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WHEN SILENCED VOICES SPEAK: AN EXPLORATORY STUDY OF
PROSTITUTE HOMICIDE

198117

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Department of Clinical and Health Psychology

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ABSTRACT

The FBI's National Center for the Analysis of Violent Crime (NCAVC) recently cited an increase in consultations involving serial, or multiple, homicide of female prostitutes, including anecdotal evidence of distinct victimology and crime scene differences among the victims. Of particular interest to the NCAVC was whether such variables (e.g., work location, body disposal method) could classify a deceased prostitute case as being either "single" (i.e., the only victim of a murderer) or "serial" (i.e., one of several victims of a murderer) in nature. Because this phenomenon had not been examined empirically, this exploratory study investigated differences between samples of serial and single prostitute homicide victims. The NCAVC's anecdotal data and variables excerpted from relevant research literatures were included in an instrument designed for the study, the Prostitute Homicide Questionnaire (PHQ; Dudek & Nezu, 2000). Psychopathy was measured retrospectively with the Psychopathy Checklist-Revised (PCL-R; Hare, 1991c). Efforts were made throughout the study to control error variance. Trained raters examined 123 closed homicide files (49 single and 74 serial victims, respectively) submitted from U. S. law enforcement agencies, completing both instruments. The study's aims were largely fulfilled. Significant bivariate relationships between victim groups and conceptual blocks of included variables were demonstrated, including expected trends from the examined literatures. Although most prostitute victims were crack cocaine addicts, serial victims evidenced a more chronic pattern of abuse and risk behaviors, resembling so-called "crack whores" (Ratner, 1993a), while single victims resembled traditional street prostitutes. Although the perpetrators resembled each other superficially, having lengthy

criminal histories and elevated psychopathy levels, the serial killers differed markedly “under the surface,” evidencing sexual motivations, deviant interests, and a high likelihood for sexual aggression (Hanson & Bussiere, 1996, 1998). Serial offender subgroups were identified, differing in their socioeconomic status, criminal sophistication, and exhibition of sadistic and idiosyncratic crime scene behaviors. Single offenders were nonsexually motivated, murdering victims spontaneously during interpersonal disputes involving substances. Although low sample size precluded multivariate analyses, odds ratio calculations facilitated victim classification, and empirical profiles of the murderers and victims were derived. Replication with a larger, more representative sample of prostitute victims and murderers is recommended.

DEDICATION

To the late Mrs. Janice Silva, my high school English teacher and dear friend, and to Professor William Rosenfeld, my college English instructor, who both showed me, with their red pens, how to write as well as the magic of written discourse.

To college Professor Douglas Herrmann, whose psychology witticisms in one afternoon made a psychologist out of a future economist, and to college Professor Amy Gervasio, my first clinical mentor, who fostered my interests in clinical and forensic psychology and who continues to watch over me.

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INTRODUCTION

Purpose:

The National Center for the Analysis of Violent Crime (NCAVC), a unit of the Federal Bureau of Investigation (FBI) offering investigative support - such as crime scene analysis, violent criminal profiling, and investigative and interview strategies - to federal, state, and local law enforcement agencies on complex crimes such as serial murder and child abduction (FBI, n.d.a), has cited a perceived increase in the number of case consultations involving the serial homicide of prostitutes. In this regard, a search of the NCAVC's proprietary violent crime computer database - containing files of submitted solved, unsolved, attempted, serial, sexual, random, and/or seemingly motiveless homicides; abductions; and cases involving suspected foul play, such as missing person cases and the discovery of unidentified bodies (FBI, 1991, n.d.b) - reveals a total of 329 prostitute homicide victims (FBI, 2000b).

Interestingly, the FBI's most recent annual Uniform Crime Reports (UCR) for calendar year 1999 lists only a total of seven homicide victims (1 female and six males) under the circumstance "prostitution and commercialized vice" (FBI, 2000a, p. 22). This category includes "sex offenses of a commercialized nature, such as prostitution, keeping a bawdy house, procuring, or transporting women for immoral purposes..." as well as attempts at these offenses (p. 405). Similarly, small numbers of victims in this category are reported for years 1992 ($n = 32$), 1993 ($n = 18$), 1994 ($n = 14$) (FBI, 1997, p. 21), 1995 ($n = 9$), 1996 ($n = 8$), 1997 ($n = 7$), 1998 ($n = 15$), and 1999 ($n = 7$) (FBI, 2000a, p. 22); these figures also suggest a decreasing trend of prostitution-related homicide reports

over this time period. Although the large discrepancy between the NCAVC and UCR statistics might simply be attributable to poor reporting, other, more disturbing factors may also be responsible.

Specifically, it is argued that both the legal system and the police have stereotypic perceptions of prostitutes, resulting in apathy (Hatty, 1989; Miller & Schwartz, 1995). Because prostitutes do not conform to societal norms of "good" women demonstrating "proper" behavior, as evidenced by their revealing clothing and their performing of sexual acts, they are perceived as "illegitimate victims" and "expendable objects" by the authorities when victimized and killed; as such, their deaths receive scant investigative attention (Hatty, 1989, p. 244). Hatty (1989) provides a striking example of this negative bias, quoting Great Britain's Attorney General, who, when discussing the victims of serial killer Peter Sutcliffe, the so-called "Yorkshire Ripper," stated, "Some were prostitutes, but perhaps the saddest part of this case is that some were not" (Edwards, 1987, p. 49, as cited in Hatty, 1989, p. 245). It is, therefore, possible that prostitution homicide investigations receive a low priority designation by law enforcement agencies, resulting in a dearth of reporting about the victims.

The FBI Special Agents comprising the NCAVC also report anecdotal evidence, gleaned from their case consultations, noting distinct victimology and crime scene differences between various prostitute murder victims. Specifically, certain prostitutes working in neighborhood areas with foot traffic customers have been murdered and their bodies left at the crime scene. These women are believed to be drug-using and primarily engaged in activities to support their drug habits, as evidenced by their neglect of hygiene and poor attention to dress. Conversely, prostitutes working in known vice, or "stroll,"

areas, and servicing customers with vehicles have been killed and their bodies disposed of elsewhere. These women, although also described to be drug users, reportedly dedicate more attention to their appearance and dress.

Of particular interest to NCAVC investigators is whether an examination of distinctions such as these may be used to classify a given case of a deceased prostitute as being either "single" (i.e., the only victim of a murderer) or "serial" (i.e., one of several victims of a murderer) in nature. It follows that the typology of homicide offender (i.e., either single or serial) suggested by these respective victim and crime scene nuances would have significant implications for the NCAVC's approaches to crime scene analysis, criminal profiling, and the formation of investigative, interrogation, and interview strategies during consultations, especially as they pertain to the identification and apprehension of serial murderers (FBI, n.d.a).

This study analyzed victim, perpetrator, and crime scene data from closed investigative case files in an attempt to offer empirically-based distinctions between single and serial prostitute homicide victims, and to offer support for the NCAVC's anecdotal assertions regarding lifestyle and crime scene differences among prostitutes working in either neighborhood areas or established vice areas, respectively. Moreover, the investigation attempted to identify salient victim and perpetrator characteristics so as to facilitate the identification of single and serial murderers of prostitutes. In particular, the project attempted to elucidate whether particular offender and victim typologies and associations existed.

Project Challenges:

The merger of the disciplines of psychology and law enforcement in this endeavor presented several significant challenges. Law enforcement personnel, such as homicide investigators, have been trained to examine physical evidence (e.g., blood spatter, semen, fingerprints, etc.) and then to reconstruct the fatal crime scene. It is posited that their training makes them hesitant to consider nonphysical evidence, such as psychological variables, when building their cases (Holmes & Holmes, 1996, pp. 46-47). As such, from the standpoint of clinical psychology, here in a consultatory role, the challenges included amending or "translating" intangible psychological constructs, such as deviant fantasies, into tangible manifestations of this behavior that would be useful for the criminal investigator (e.g., evidence of a pornography or stolen underwear collection, suggesting the presence of an active fantasy life); generating psychological hypotheses about an offender's personality characteristics based upon crime scene data (e.g., "What type of an individual is likely to dispose of a body in a distant, isolated location from the murder scene?"); and modifying one's clinical approach or "mindset" from that of treating an individual, such as a sexual offender, and identifying requisite therapeutic targets (e.g., reducing deviant thoughts), to that of apprehending perhaps this same individual, utilizing, instead, behavioral evidence as clues (e.g., inferring that an individual has deviant fantasies based upon sadistic detective magazines seized at his home during a search warrant).

There is also a dearth of empirical information available on the phenomenon of prostitution homicide. A literature search reveals a paucity of studies, mainly descriptive and ethnographic in nature (e.g., Green, Goldberg, Christie, Frischer, Thomson, Carr, &

Taylor, 1993; Ratner, 1993a; Silbert, 1982; Silbert & Pines, 1981,1982), examining violence against prostitutes, with passing, anecdotal references made to occasional murders. A scholarly challenge was presented in not only creating a conceptual basis for this investigation from a variety of existing literatures that were, or appeared, relevant – such as studies of prostitution and risk behaviors, serial homicide, criminal profiling, the actuarial prediction of sexual offending behavior, and homicidal and violent behavior, including comorbidity with substance use – but also identifying criminal and psychological variables that would be useful to criminal investigators.

Importance of Study:

By empirically examining this phenomenon; discerning any distinctions between single and multiple murder victims; and illustrating both perpetrator and victim characteristics and relationships, it was hoped that these results would facilitate active serial homicide investigations by focusing their scope (e.g., by linking similar homicides and/or by ruling out single offender victims) and/or by identifying potential suspects and likely victims. Moreover, the FBI's National Center for the Analysis of Violent Crime would be able to offer empirically-based data, inferences, and recommendations regarding prostitution homicide during its consultations with visiting state and local law enforcement agencies. The study's findings would further foster the unit's credibility and prestige, by supplementing its members' collective recommendations - based upon years of investigative experience and work with similar cases (Douglas et al., 1986) - with empirical support.

From a public health standpoint, this project would also advocate for the victims,

comprising a high-risk population that has been seemingly neglected by both clinicians and law enforcement personnel. By contributing to our understanding of this tragic phenomenon, it was hoped that the findings of this research would foster further scholarship and cooperation between mental health and law enforcement professionals in the areas of prostitute victim risk assessment, protection strategies, and therapeutic interventions.

CAUTIONARY NOTE

This author would like to remind the reader that this was an exploratory study of prostitute homicide conducted on a small, geographically-limited sample of 123 victims ($n = 49$ single prostitute victims and single offenders and $n = 74$ serial prostitute victims attributable to $n = 26$ serial offenders, respectively). As such, the study should be conducted on a larger, more geographically representative sample to replicate the findings. Because the data were collected retrospectively, utilizing trained research assistants to examine closed homicide case files, the study is subject to error introduced by the file materials themselves, the human raters, and inherent methodological and conceptual limitations of the study's data collection instrument. Because of the low sample size and to increase statistical power, no statistical correction procedure was implemented during the various bivariate data analyses, increasing the likelihood for spurious significant results. It is imperative that all of these limitations be considered when reading and interpreting the study's findings.

In particular, the reader is cautioned to take particular care not to generalize the study's results to all prostitute homicide victims and perpetrators and to other female victim and male criminal populations. The psychological and behavioral profiles, generated from the study's empirical findings and data trends, are, as such, subject to the aforementioned limitations of the data set. For instance, the prevalence of African-American/Black and Caucasian offenders in the sample should not be accepted at "face value" by criminal investigators as a means of ruling-out homicide offender suspects of other racial and ethnic backgrounds. Similarly, the prevalence of African-

American/Black serial prostitute victims may be an artifact of the study's subsample of serial victims, and this finding should not rule out serial victims of other racial and ethnic backgrounds.

Lastly, the reader is cautioned about developing negative stereotypes, biases, or judgments about the female prostitute victims in this study, especially in light of the inherently sexual, degrading, and dangerous nature of their work. In the following pages, a particularly vulnerable cohort of these women will be described – many who are homeless and who exchange sexual services for crack cocaine, supporting their chronic drug addiction. Indeed, it has been easy for society to “blame the victim” for engaging in such risky behaviors and for being victimized (Hatty, 1989; Miller & Schwartz, 1995). Arguably, however, these women, by engaging in such high risk behavior and being brutalized by male customers, exemplify the highest degree of human destitution. They are human beings who deserve not only our sympathy, but also our understanding. Furthermore, none of these women chose to be victimized and murdered.

LITERATURE REVIEW

Criminal Profiling as a Template for Examining Prostitute Homicide:

A description of criminal profiling, as implemented by the FBI's NCAVC, provides a useful, initial framework for examining prostitute homicide while also defining a joint role for applied clinical psychology to facilitate an understanding of this phenomenon. Ault and Reese (1980) note that law enforcement personnel have a difficult mandate when solving crimes, often having to work backwards from the crime scene; to generate hypotheses; and then to identify a yet unknown perpetrator. They next identify the discipline of psychology as a useful tool to assist the police, observing that psychologists study and observe "nonphysical items of evidence, such as rage, hatred, fear, and love" (p. 23). Criminal profiling, as practiced by the FBI, has evolved as an adaptation to these psychological practices, whereby investigators examine crime scene information in an attempt to generate inferences about the perpetrator's personality and behavior (Ault & Reese, 1980; Douglas, Ressler, Burgess, & Hartman, 1986; Ressler, Burgess, & Douglas, 1988). A crime scene encompasses the scene of the crime (e.g., abduction location), the victim, and other locations associated with the crime (e.g., victim holding areas, murder site, and body disposal location) (Ault & Reese, 1980; Ressler et al., 1988).

Profiling is predicated on the belief that behavior reflects personality (Ault & Reese, 1980; Douglas et al., 1986; Holmes & Holmes, 1996; Ressler et al., 1988), and that by analyzing the offender's behavior, one may elucidate the type of individual responsible for the crime (Douglas et al., 1986; Ressler et al., 1988). More specifically,

the FBI's approach involves the measurement of the "product" of the offender's behavior within the crime scene, such as the presence or nonpresence of a weapon or victim injury, arguing that this method is superior to the subjective interpretation of homicidal behavior (Ressler, Burgess, Douglas, Hartman, & D'Agostino, 1986, p. 306). Similarly, within the discipline of behavioral psychology, behavioral assessment involves the measurement of observable, operationally-defined behaviors, as opposed to the examination of underlying personality constructs, which is weaker empirically (Goldfried & Kent, 1972). For instance, one might hypothesize that a clinical psychology client whose home is filled with collected trash and newspapers might have an obsessive compulsive or thought disorder.

The FBI profilers also assume that thoughts influence behavior (Douglas et al., 1986), which is consistent with the tenets of cognitive (e.g., Beck, 1995) and cognitive-behavioral (e.g., Gelder, 1997) psychology. Hence, an analysis of the crime scene may reveal clues about both the offender's emotions, expressed behaviorally (Ault & Reese, 1980), as well as his or her thinking, or motive (Douglas et al., 1986), which is the profiler's primary objective (Ault & Reese, 1980). It follows that criminal profiling is most useful in crime scenes evidencing some form of psychopathology (Ault & Reese, 1980), in seemingly motiveless crimes, or in cases where the motive is hidden (Ault & Reese, 1980; Holmes & Holmes, 1996; Ressler et al., 1988). In this regard, profiling is utilized to facilitate investigations of a wide variety of offenses, including hostage-taking, arson, pedophilia, satanism, and threatening letter-writing (Douglas et al., 1986; Holmes & Holmes, 1996). It is particularly helpful in the investigation of sex crimes, such as rape and sexual homicide (Ault & Reese, 1980; Ressler et al., 1988).

The FBI defines sexual homicides as “murders with evidence or observations,” indicating that the homicide was sexually motivated. These include the presence or nonpresence of clothes on the victim; exposure of the victim’s genitals and sexual areas; sexual positioning of the victim’s corpse; sodomy of body orifices with foreign objects; evidence of sexual intercourse (oral, vaginal, and anal); and evidence of “substitute sexual activity, interest, or sadistic fantasy” (Ressler et al., 1988, p. xiii). Geberth (1996) elaborates on these criteria, noting that substitute sexual activity might include masturbation, ritualism, and symbolism; that semen might be found near, on, or inside the corpse; that sexual injury or mutilation might be present on the victim’s body; and that the corpse might evidence multiple stabbings and cutting wounds, including abdominal slicing, throat-slashing, and overkill injuries that appear to be sexually motivated (p. 401). Holmes and Holmes (1996) add that profiling is appropriate in cases involving postmortem wounds as well as the evisceration of the victim’s body.

In the case of serial killings, the perpetrator’s seemingly random selection of victims suggests a lack of motive, although it is posited that a comparison of “similarities and differences among victims” will ultimately reveal a secretly-held agenda (Ressler et al., 1988, p. 10). In this regard, commonalties between victims may be discerned through their victimology as well as the offender’s modus operandi and crime signature (Geberth, 1996; Holmes & Holmes, 1996). Briefly, victimology encompasses the victim’s personal, demographic, background, and lifestyle information (Geberth, 1996). Modus operandi, or “MO,” is defined as a criminal’s “method of operating,” and “way of working,” here referring to the same “pattern of criminal operation” (De Sola, 1982, p. 94), which is assumed to be consistent across crimes (Holmes & Holmes, 1996). An

offender's signature is the unique fashion in which he commits his crimes (Holmes & Holmes, 1996), and it is also believed that these specific actions (e.g., use of similar weapon, similar technique used to kill victim, or similar unusual behavior exhibited at each crime, such as mutilation) will be repeated at each crime scene (Geberth, 1996; Holmes & Holmes, 1996).

In toto, profiling presumes that a perpetrator's personality, as manifested by crime scenes with similar characteristics, will not change (Holmes & Holmes, 1996). However, when one considers the wide range of behaviors, cognitions, and emotions that humans exhibit and experience daily, the aforementioned assumptions may become problematic. For instance, Ted Bundy, who killed victims across state lines, and John Wayne Gacy, who buried the bodies of his victims under his home, are two notorious serial killers whose criminal sophistication allowed them to successfully elude detection by the police for many years.

Moreover, it is argued that some killers may exhibit both organized (e.g., exhibits self-control, planning) and disorganized (e.g., exhibits loss of self-control, lack of planning) characteristics so as to avoid apprehension (Holmes & De Burger, 1988; Levin & Fox, 1985); might cease killing under police pressure; or may simply move to another location, making detection difficult (Levin & Fox, 1985). Seemingly acknowledging these limitations, the FBI identifies a "mixed" offender as one whose crime scene exhibits both organized and disorganized elements (Ressler et al., 1988) while explicitly stating that profiling should not be considered a substitute for a comprehensive criminal investigation (Ault & Reese, 1980).

Nonetheless, through the above methods, criminal profiling aims to assist law

enforcement personnel in focusing their investigations and to help them run their cases more efficiently (Ault & Reese, 1980; Douglas et al., 1986; Ressler et al., 1988). Perhaps most importantly, it is hoped that profiling reduces so-called "linkage blindness," or the failure to connect similar crimes over the course of an investigation (Geberth, 1996, p. 758). Profiling may also be used to provide a psychological assessment of an offender's known or likely possessions, which might link him to the crime of interest, and to propose interview strategies (Holmes & Holmes, 1996).

For instance, embellishing upon an example provided by Holmes and Holmes (1996), if it was believed that a male offender took photographs of a murdered female victim as well as kept an item of her undergarments as a souvenir, this information could be listed on a search warrant, while photo shops in the area might be canvassed by the police. One might also infer that the offender has an active fantasy life, manifested by paraphilic interests (e.g., fetishism), to possibly include compulsive masturbation and the use of pornography. Regarding interview strategies, in another situation, investigators, who knew about a suspect's desire for control, "played up" this behavioral characteristic during their interrogation, encouraging him to "help" them with their case, culminating in a confession (Holmes & Holmes, 1996).

When generating a psychological profile of an alleged offender, the following components are critical: 1). Crime scene information (e.g., photographs of victim, body position, crime location, such as residence, and aerial views; description of crime scene; physical evidence; and recovered weapons); 2). Autopsy report, photographs, toxicology results, and medical examiner's impressions regarding time of death and delivery of wounds; 3). Comprehensive police reports of the incident (e.g., date and time of incident,

location, description of neighborhood, weapon used, sequence of events, and witness interviews; 4). Maps of the area, including the victim's whereabouts prior to death (showing place of employment, residence, location last seen, and crime scene), and sketches of crime scene denoting distances, direction, and scale; and 5). Victimology information (e.g., data pertaining to the victim's demographics; physical description; employment; residence; reputation; criminal, social, educational, financial, medical; and psychiatric histories, family relationships, friends and enemies; personal and social habits; hobbies; fears; drug and alcohol use; and recent lifestyle changes and court activity) (Ault & Reese, 1980, pp. 25-26; Geberth, 1996, pp. 720-721; Ressler et al., 1988, pp. 136-137).

Holmes and Holmes (1996) propose that a sound psychological profile should contain useful psychosocial information about the offender, including his age, race, employment history and status, marital status, and education level as well as possible psychological characteristics. Additional components might include risk assessment predictions regarding the likelihood of reoffense as well as possible future attack sites (p. 3). When generating inferences about an offender, the FBI distinguishes between so-called "crime scene characteristics" and "profile characteristics" (Ressler, Burgess, et al., 1986; Ressler et al., 1988).

Crime scene characteristics are described to be "tangible clues" which are left at or are missing from the crime scene with the victim's body (Ressler, Burgess, et al., 1986, p. 297). This physical evidence is described to include the presence of restraining devices, the method used to kill the victim, depersonalizing of the victim, staging the crime scene to make it look a certain way; and the gross level of evidence left at the scene

(Ressler et al., 1988, p. xiii). Profile characteristics are defined to be characteristics of the killer himself (Ressler, Burgess, et al., 1986), and are inferred from crime scene characteristics (Ressler et al., 1988). Specifically, these variables pertain to the perpetrator's personal background (e.g., age, socioeconomic level), precrime state (e.g., under the influence of alcohol, angry, depressed), residence, use of vehicles, distance to the crime scene, and postoffense behavior (e.g., revisiting the crime scene) (Ressler, Burgess, et al., 1986, p. 297).

Using the aforementioned victim, perpetrator, and crime scene information, the FBI profilers also make determinations regarding the risk levels of both the victim and perpetrator (Ressler et al., 1988). For instance, high risk victims are those whose occupations, lifestyles, age, and physical characteristics make them vulnerable to killers, such as prostitutes working alone at night in high crime areas. As applied to the homicide offender, risk encompasses the degree of danger he is willing to undertake during the commission of the crime, such as kidnapping a prostitute with witnesses present, suggesting various hypotheses about his behavior (e.g., he is acting out under stress, believes he can escape police detection, or is a thrill-seeker) (Ressler et al., 1988, p. 141). One might also determine whether or not the crime represents an escalation of behavior, say from fetish burglaries-to-homicide-to serial homicide (Ressler et al., 1988). Hence, in addition to fostering hypotheses about risk, the profiling data may offer insights vis-à-vis the perpetrator's degree self-control, emotional state, and level of criminal sophistication (Ressler et al., 1988, p. 137).

In this regard, the FBI posits two typologies of the sexual murderer: organized and disorganized. Briefly, an organized offender plans the murder, exhibits control at the

crime scene, and leaves few clues. Conversely, the disorganized offender behaves spontaneously, leaving a sloppy crime scene with incriminating evidence (Ressler, Burgess, et al., 1986; Ressler et al., 1988). It has also been found that sexual murderers have an active sexual fantasy life - which may include paraphiliac interests, past sexual offenses, and sexual sadism - that may be manifested at the crime scene (e.g., Dietz, Hazelwood, & Warren, 1990; FBI, 1985; Geberth & Turco, 1997; Hazelwood, Warren, & Dietz, 1993; Prentky, Burgess, Rokous, Lee, Hartman, Ressler, & Douglas, 1989; Ressler, Burgess, Hartman, Douglas, & McCormack, 1986; Ressler et al., 1988). More detailed descriptions of these offender typologies and the role of sexual fantasies, based upon the research of the FBI and others with sexual homicide offenders and sexual sadists, are provided in the literature review.

Lastly, the FBI offers a series of four perpetrator categories and variables, encompassing the act of the homicide itself, which not only facilitate the understanding of prostitute homicide, but also help organize and conceptualize this complicated phenomenon. Specifically, these include "antecedent behavior and planning," "the act of murder," "body disposal," and "postcrime behavior" categories (Ressler et al., 1988, p. 45). "Antecedent behavior and planning" includes such variables as precipitating emotional stressors, the perpetrator's affective state prior to committing the homicide, planning of the murder, precrime offenses and actions, victim selection, and triggering variables. The "act of homicide" category involves a plethora of factors which involve the crime scene and the state of the victim's body, including whether the homicide was sexually motivated or not, the presence of sexual sadism (e.g., torture), evidence of fantasy (e.g., the presence of semen next to the body), object insertion, mutilation,

overkill, and depersonalization of the victim (e.g., covering victim's face) (Ressler et al., 1988).

"Body disposal" encompasses what the offender does with the victim's body after the homicide. Specifically, the FBI examines a series of so-called "body state" variables, such as the corpse's visibility, state of dress, and positioning, as well as the final location of the body (Ressler et al., 1988, p. 59). Moreover, within this category one may include several variables pertaining to time and location factors, respectively. These include the amount of time taken to kill the victim, the length of time spent to commit postmortem acts, the length of time taken for body disposal, and whether or not differences exist between the encounter/abduction, murder, and body disposal locations (Ressler et al., 1988). Geographic profiling, proposed by Rossmo (1994, as cited in Geberth, 1996; Rossmo, 1997), examines a homicide offender's mobility, familiarity, and comfort within specific geographic areas as well as the geographic characteristics of the various crime scenes (Geberth, 1996; Holmes & Holmes, 1996).

Lastly, the "postcrime behavior" category of perpetrator variables serves to describe the offender's behavior after having murdered and disposed of the victim. These include such activities as returning to the crime scene, observing the discovery of the body, keeping souvenirs (i.e., mementos taken from the victim as reminders of the crime) and trophies (i.e., mementos taken by an organized offender, reminding him of his ultimate domination of the victim), interjecting himself into the investigation, and following the investigation through the media (Ressler et al., 1988).

In summary, the aforementioned review of the profiling literature identifies a host of perpetrator (demographics; risk factors; precrime, murder, body disposal, and

postcrime variables; offender typology; and evidence of fantasy-based psychopathology), victim (victimology variables, including demographics and lifestyle variables; risk factors; and postmortem variables), and crime scene (crime scene characteristics, geographic profiling variables; encounter, murder, and body disposal site data) variables (e.g., Ault & Reese, 1980; Dietz et al., 1990; Geberth, 1996; Holmes & Holmes, 1996; Ressler, Burgess, et al., 1986; Ressler, Burgess, Hartman, et al., 1986; Ressler et al., 1988; Rossmo, 1997), providing a useful “template” with which to conceptualize prostitute homicide and to organize its many contributory variables.

Using the aforementioned “template” as a guide, the relevant literatures on prostitution; sexual homicide, serial homicide and crime scene analysis; the actuarial prediction of sexual offending and violent behavior; and homicide, violent behavior, and comorbid substance use were reviewed, identifying those characteristics, risk factors, and crime scene variables that have been found or hypothesized to be the most predictive of the perpetrators and their murdered victims, respectively, emphasizing empirically-validated findings wherever possible. In particular, those “tangible” and “intangible” (i.e., psychological) variables believed to be most useful to investigating law enforcement professionals were extracted for analysis. In the latter regard, the project encompassed the application of psychological theory and scientifically-based inferences to the area of criminal investigation.

Prostitution Literature Examining Lifestyle, Substance Use, and Risk Behaviors:

Empirical Limitations:

In light of the dearth of research on prostitute homicide, the existing literature on

prostitution was surveyed to identify potential risk variables that may contribute to this phenomenon. These are described in the various subsections. As shall be illustrated, a number of salient risk factors were identified from the substantial research pertaining to the lifestyle and occupation of prostitution (e.g., Barnard, 1993; Green et al., 1993; Silbert & Pines, 1982), substance use and health risk behaviors (El-Bassel, Schilling, Irwin, Faruque, Gilbert, Von Bargen, Serrano, & Edlin, 1997; Gossop, Powis, Griffiths, & Strang, 1994, 1995), male customers (e.g., de Graaf, van Zessen, Vanwesenbeeck, Straver, & Visser, 1996, 1997), and, especially, sex-for-drug exchanges in the era of crack cocaine (e.g., Ratner, 1993a).

At the outset, however, it is worthy to note that much of the prostitution literature is anecdotal in nature and lacking in empirical rigor, principally expressing trends and categorical data (e.g., prevalences, percentages, frequencies) reported from ethnographic data collection, namely interviews with prostitute volunteers and male customers (e.g., Barnard, 1993; Barnard, McKeganey, & Leyland, 1993; Gossop et al., 1994; Green et al., 1993; McKeganey & Barnard, 1992; Miller & Schwartz, 1995; Plumridge, Chetwynd, Reed, & Gifford, 1996; Ratner, 1993a; Silbert, 1982; Silbert & Pines, 1981, 1982; Sterk & Elifson, 1990; Whittaker & Hart, 1996). With a few exceptions (e.g., Booth, Watters, & Chitwood, 1993; de Graaf et al., 1997; Dudish & Hatsukami, 1996; El-Bassel et al., 1997), many of the prostitution studies appear to be weak methodologically.

Specifically, some employ multiple comparisons without reporting safeguards to prevent experiment-wise error (e.g., Gossop et al., 1994, 1995; McCoy, Inciardi, Metsch, Pottieger, & Saum, 1995; Philpot, Harcourt, & Edwards, 1989); fail to clearly document the data collection methods (i.e., the contents of structured interviews) and statistical tests

employed, making replication difficult (e.g., Gossop et al., 1994, 1995; Green et al., 1993; McCoy et al., 1995; Philpot et al., 1989; Plumridge et al., 1996; Sterk & Elifson, 1990); report findings based upon single samples and neglecting to use comparison groups where appropriate (e.g., Barnard, 1993; Miller & Schwartz, 1995; Silbert, 1982; Silbert & Pines, 1981, 1982; Whittaker & Hart, 1996; Williamson, 1997); and employ small sample sizes (e.g., Miller & Schwartz, 1995; Whittaker & Hart, 1996; Williamson, 1997). Because many of the findings of these investigators are germane to the understanding of prostitute homicide, they will be included in the current study. In light of the aforementioned weaknesses in the literature, it was hoped that the project would also serve as an empirical validation of the importance or nonimportance of these factors.

Prostitution Definition and Motivations:

Prostitution is defined as the exchange of money for sexual services, including intercourse, masturbation, sadomasochistic practices, and exhibitionism (O'Neill, 1997). Although beyond the scope of this review, women enter the prostitution profession for a variety of reasons, such as earning an income, poverty, supporting a partner or family, being homeless, having family problems, being a runaway, having low self-esteem, joining friends already in the profession, being coerced by a pimp, and supporting a drug addiction (O'Neill, 1997; Ratner, 1993a; Scrambler, 1997; Whittaker & Hart, 1993). Female prostitutes also cite sexual victimization as a factor influencing their decision to enter the profession (O'Neill, 1997; Silbert, 1982; Silbert & Pines, 1982).

Prostitution Lifestyle:

Prostitutes work in a wide variety of locations, including on the street; in crack houses; in bars, clubs, and hotels; in saunas and massage parlors; out of apartments,

working as “call girls”; in brothels; and, in prearranged locations, employed as escorts (e.g., Hatty, 1989; Plumridge et al., 1996; Ratner, 1993a; Sagarin & Jolly, 1997; Scrambler, 1997; Silbert & Pines, 1982; Whittaker & Hart, 1993). Specifically, in light of the FBI’s observations on the increased number of prostitute homicide victims; the illegality of prostitution in the majority of the United States, proscribing studies of legal, organized establishments; the effects of the recent crack cocaine influx on street prostitution, including the diminished role of pimps and brothels (Fagan, 1994; Sagarin & Jolly, 1997); and the lack of research on nonstreet prostitutes, such as those who earn high incomes, working independently and discreetly (Scrambler, 1997), this study focused on street prostitution, including the subset of women addicted to drugs and servicing customers in drug-infested, inner-city neighborhoods as well as in so-called “crack houses.” This latter category of drug-using prostitutes has been the focus of much research on risk-taking behavior as part of sex-for-drug exchanges (e.g., Ratner, 1993a). Because it was believed that these women would be especially prone to victimization, including murder, they have been described in detail in a separate section.

Street prostitutes work on so-called “prostitute strolls,” literally, areas where they walk, or “stroll.” Strolls are usually located a block from a major road, and are known by customers, who frequent the area in vehicles and on foot (Barnard, 1993; French, 1993). The literature frequently reveals that these areas are located in low income, high crime, and drug-infested areas of the inner city (e.g., Booth et al., 1993; El-Bassel et al., 1997; Gunn et al., 1995; Ratner, 1993a). Street prostitutes refer to their customers as “johns,” “dates,” and “tricks,” while describing the actual transaction itself as “having a date,” “having a party,” or “turning a trick.” For those prostitutes working on the street or who

engage in sex-for-drug exchanges, sexual encounters may occur in a car, on a back street, in an abandoned building, in a local hotel, or in a crack house (French, 1993). In studies of street prostitutes in Glasgow, customers with vehicles were serviced in parking garages or near city parks; private homes; and client offices; pedestrian customers were serviced in back alleys and bus station toilets (Barnard, 1993; Green et al., 1993).

Situational/Interactional Risk Variables:

Hatty (1989) offers a useful framework with which to conceptualize violence - here extended to include homicidal behavior - against prostitutes, positing that it should be framed within the context of an economic transaction, involving the exchange of sexual services for money, goods, or other services. Indeed, it will be later argued that certain lifestyle factors, notably drug addiction to crack cocaine, negatively impact the interaction between the female prostitute and her male customer, culminating in a homicide.

Customer Screening, Negotiation, and Risk:

Describing the activities of street prostitutes in Philadelphia and Newark, French (1993) explains that transactions are made with men in passing cars. Following eye contact with the customer, the prostitute asks a sexually suggestive, but not incriminating question to the individual so as to avoid arrest, with the driver expected to offer money prior to making the transaction. The next stage of the encounter has been universally described in the literature, and encompasses an informal "screening" or profile of the potential client by the prostitute, intended to avoid dangerous situations (e.g., Barnard, 1993; de Graaf et al., 1995; French, 1993; Miller & Schwartz, 1995). This appraisal is

based upon the prostitute's intuition as well as observations of the customer's behavior and mannerisms (Barnard, 1993; Whittaker & Hart, 1993).

Specifically, "safe" customers reportedly include those who look "acceptable," "normal," and "safe" (Miller & Schwartz, 1995). Prostitutes employ a variety of acceptability and rejectability criteria, such as whether the customer drives a "nice" car versus an old or inexpensive vehicle; whether or not he is under the influence of substances; his socioeconomic status and race; and whether or not he makes a degrading request for sexual services, such as anal or kinky sex (Barnard, 1993; de Graaf et al., 1995; McKeganey & Barnard, 1992; Miller & Schwartz, 1995). The screening process is not fail-safe, however, and violent actions have been committed against prostitutes by customers believed to be trustworthy - in other words, who appeared "normal" and "safe" (Barnard, 1993; Miller & Schwartz, 1995). One might expect some murderers of street prostitutes, therefore, to be individuals the women trusted enough to conduct the sexual encounter. The screening process must also be completed quickly, in light of the illegality of prostitution. As a result, the prostitute's assessment is often not thorough, and personal health issues, such as safe sex practices, may not be addressed (Barnard, 1993; Morrison & McGee, 1995). Interestingly, a recent study of male prostitute patrons in New Zealand found that they screened encounter locations, looking for places that were clean, respectable-looking, and adherents of safe sex practices (Plumridge et al., 1996).

The literature reveals that during the negotiation process, the prostitute asserts her control to protect herself from verbal abuse, such as attacks on her self-worth (i.e., taboo requests for kinky sex); to prevent physical attacks; to secure payment; and to remind the

customer of the commercial nature of the transaction (Barnard, 1993; Whittaker & Hart, 1993). By having the client agree to a set of stated terms, female prostitutes believe that this reduces the likelihood of problems developing during the negotiation for sexual services (Barnard, 1993). Moreover, dangerous potential clients are those who refuse to obey the prostitute's instructions on where the sexual act will be performed and/or who deviate from the agreed-upon sexual service (Barnard, 1993).

The tactics used by prostitutes during negotiations include making the client pay for a set time period (Green et al., 1993); making a clear agreement when the client would achieve orgasm; servicing the client in a short time period; allowing the client fewer sexual acts; and making the client pay more for additional services (de Graaf et al., 1995). In potentially threatening situations, prostitutes have reported trying to reassure or calm down the client; handle him in a cheerful, friendly way; "playing up" to him; and treating the client better (de Graaf et al., 1995). As shall be illustrated later, sexual homicide offenders have been found to escalate their violent behavior pursuant to victim resistance and negotiation (Carter, Prentky, & Burgess, 1988; Ressler, Burgess, et al., 1986).

Acceptable and Nonacceptable Sexual Acts and Condom Use:

The negotiation is framed by what Barnard (1993) describes as a "latent tension" (p. 695), namely the potential for violence stemming from discrepancies between what the customer desires and what the prostitute is willing to do. In a sample of 68 street prostitutes in Glasgow, Barnard (1993) reported that their opinions prevailed during negotiations with customers; otherwise, rejected customers were left to approach other coworkers. As applied to the phenomenon of prostitute homicide, this finding suggests

that rejected potential killers may easily solicit other victims in a stroll area; their behavior might also escalate due to, say, an argument with a prostitute.

Some prostitutes restrict themselves to only a few permissible sexual services, while others will perform kinky, unconventional sex acts for extra money (Scrambler, 1997). Several studies of street prostitutes in Glasgow reported that oral sex, vaginal sex, and masturbation were the most frequently provided sexual services (Green et al., 1993; McKeganey & Barnard, 1992). The prostitutes indicated that oral sex was most often requested by male customers, and that they preferred this sexual activity because it was easier to escape potentially violent clients from within a vehicle and that it helped them to avoid HIV infection (McKeganey & Barnard, 1992). Performing oral sex also does not require the prostitute to disrobe, saving time and decreasing police suspicion of her activities (J. Ridges, personal communication, November, 2000). Among a sample of crack cocaine-addicted females in Harlem, oral sex was the most frequently provided service, followed by vaginal sex (El-Bassel et al., 1997), providing further confirmation that these are "acceptable" sexual activities.

The Glasgow prostitutes described anal sex as a frequently requested, "taboo" service that would likely result in a terminated negotiation, although some reportedly permitted this activity (Green et al., 1993; McKeganey & Barnard, 1992). Additionally, these prostitutes would occasionally be solicited to perform perverse sex acts by male customers, which they provided for extra money. These included voyeuristic activities (e.g., client asked prostitute to help him cross-dress; prostitute paid to disrobe, to masturbate, insert sex toys or tampon into her vagina or rectum; prostitute asked to "talk dirty"); supplying sexual objects (e.g., soiled undergarments or female hygiene products);

pornographic requests (e.g., posing for photographs or viewing them); being subjected to physical abuse and degradation (e.g., giving and receiving physical punishment; whipping clients; mutilating clients' genitals; and defecating, urinating, or spitting on clients); and having unusual sexual contact (e.g., anal sex requests, client requests to have sex with menstruating prostitutes; and requests to provide children to pedophilic customers) (Green et al., 1993, p. 328). The sample reported that sadistic customers were encountered (e.g., sodomizing one victim with a shotgun), and that rapes frequently occurred when requests for certain sexual acts were denied (Green et al., 1993).

Scrambler (1997) notes that many prostitutes want sexual encounters to end quickly, and they try to mentally "distance" themselves from the customer during the act. Few prostitutes become involved intimately with customers – a shunned activity – although it does occasionally occur (Scrambler, 1997). Additionally, many prostitutes proscribe kissing as a form of intimacy, and require the use of condoms as a physical "barrier" between themselves and the client (Scrambler, 1997). In this sense, condoms serve to separate the prostitute's business life from her personal life, with protections infrequently used with boyfriends and regular customers (Faugier & Sargeant, 1997; McKeganey & Barnard, 1992). These latter individuals, who provide the prostitute with a regular income, allowing her to be independent, may also take a more active role in her welfare, occasionally becoming an intimate partner (Day & Ward, 1990, as cited in Faugier & Sargeant, 1997; de Graaf et al., 1997).

Prostitutes also use condoms as a form of control during the sexual encounter (Faugier & Sargeant, 1997; McKeganey & Barnard, 1992). It is reported that the Glasgow prostitutes perceived unsafe sex requests as deviant, inferring that the customer

wanted to sexually transmit a disease to them. However, arguments can easily erupt around the issue of condom use during negotiation (McKeganey & Barnard, 1992). Green et al. (1993) note that few male customers in their sample carried condoms, and that they perceived the prostitute's refusal to have unsafe sex as a sign that she was infected with the HIV virus. Clients may offer the prostitutes money to abstain from condom use; might disregard the prostitute's request to wear a condom (McKeganey & Barnard, 1992); or may try to foster a false sense of intimacy with her by making her feel that she is special (Leonard, 1990, as cited in Faugier & Sargeant, 1997).

Protective Strategies and Location-Based Risk:

In addition to screening customers, prostitutes utilize other protective measures, with some reportedly carrying weapons (Barnard, 1993) and others relying upon their pimps or male significant others to observe their negotiations; to hold money, and even to watch over them during sexual encounters (Barnard, 1993; Green et al., 1993). Those prostitutes who work in organized brothels or flats managed by an older, experienced female prostitute, referred-to as a "madam" or "maid" (Sagarin & Jolly, 1997; Whittaker & Hart, 1993), engage in similar practices. However, this arrangement has been declining in the United States (Fagan, 1994; Sagarin & Jolly, 1997), with relevant studies conducted on European and Australian prostitute samples, for instance (Philpot et al., 1989; Whittaker & Hart, 1993). Nonetheless, it is worthwhile to compare the various types of prostitution (e.g., street, brothel, escort) and their settings (e.g., high crime neighborhood, managed brothel, prearranged location), as they undoubtedly contribute to the female worker's degree of risk on-the-job.

For instance, Whittaker and Hart (1993) report that London prostitutes who

worked with a maid in a well-lit, familiar apartment setting could more easily screen customers, negotiate the transaction; and store money, controlling the situation. In particular, the maid was informed about agreed-upon sexual services, would wait in an adjoining room in case of problems; and would notify the prostitute and customer when time had expired. The maid also served as a mentor to young prostitutes who lacked experience (Whittaker & Hart, 1993). Philpot et al. (1989), describing brothels in Sydney, Australia, note that drug and alcohol use by prostitutes is not tolerated, with house managers checking the female workers' purses for contraband and their arms for needle marks. This minimizes the potential risks introduced by substance use, namely the inability to successfully and safely negotiate transactions while intoxicated (e.g., Gossop et al., 1995; Morrison & McGee, 1995; Ratner, 1993a).

However, Hatty (1989), commenting on Melbourne, Australia's brothels, remarks that prostitutes interacting alone with customers - without the supervision of fellow prostitutes or "sitters" - are at risk for being harmed (p. 240). Additionally, prostitutes contacting customers through clubs, hotels, and advertisements are described to be at risk due to the fleeting nature of these contacts, minimizing the time available to screen potentially dangerous clients (Hatty, 1989), while those prostitutes working in bars and lounges are prone to addiction, as the nature of these settings facilitates the use of alcohol (Gossop et al., 1994). Conversely, one might expect the aforementioned "high class" escorts or call girls, who exchange sexual services for a high price, working independently or for an organization, to be less at risk, having the discretionary ability to refuse customers on a business level (Morrison & McGee, 1995). A recent study of 559 Dutch male prostitute clients found that more educated individuals solicited higher-end

prostitutes in clubs and brothels (de Graaf, van Zessen, Vanwesenbeeck, Straver, & Visser, 1996).

Female street prostitutes also "look out" for the welfare of their coworkers, recording license plate numbers of customers; however, this system is unreliable, as these women might be solicited themselves and leave the area (Barnard, 1993). Indeed, street prostitutes who work in isolated locations (e.g., poorly lit and vacant areas) and who perform acts in vehicles - a restricted environment, making escape difficult - are especially at risk for being injured or killed (Barnard, 1993; Hatty, 1989).

Role of Pimps:

Some street prostitutes work for pimps, who, as mentioned above, serve as protectors, as well as managers and exploiters (Faugier & Sargeant, 1997; Sagarin & Jolly, 1997). They also frequently victimize their prostitute workers through beatings, rape, and, occasionally, murder (Faugier & Sargeant, 1997; Sterk & Elifson, 1990). Faugier and Sargeant (1997), citing a survey of prostitutes in Portland, Oregon, reported that over 50% of 179 former prostitutes had been raped by their pimps 16 times per year on the average, while 63% of a subsample of 55 prostitutes had been severely beaten by their pimps an average of 58 times per year.

Anecdotally, Sagarin and Jolly (1997) note that pimping has largely become dominated by African-American and Hispanic individuals in America's inner-cities. In a study of 106 drug-using prostitutes in New York City, approximately 68% ($n = 72$) reported working for pimps (Sterk & Elifson, 1990). Conversely, however, with the influx of the highly addictive drug crack cocaine in the mid-1980's (Fagan, 1994), the role of the pimp has reportedly diminished, with street prostitutes now becoming

“dependent” on the substance itself (Faugier & Sargeant, 1997). Crack-addicted prostitutes frequently work independently, without a pimp, as they are considered unreliable, motivated principally to support their drug habit (Sterk & Elifson, 1990). As such, these women have subsequently come to be exploited and victimized by customers (e.g., Ratner, 1993a), drug dealers, and crack house operators, as shall be illustrated (Fagan, 1994).

Victimization of Prostitutes:

Notwithstanding abuse from pimps, prostitutes are at high risk of being victimized both on- and off-the-job (Silbert & Pines, 1982), especially those working on the street and in isolated areas (Hatty, 1989). Rape, robbery, assault, muggings, being threatened with weapons, being cheated by customers, and random acts of violence are common in their lives (Barnard, 1993; Bourgois & Dunlap, 1993; Farley & Barkan, 1998; McKeganey & Barnard, 1992; Miller & Schwartz, 1995; Silbert & Pines, 1982; Whittaker & Hart, 1993). For instance, in a survey of 200 juvenile and former and current adult street prostitutes in San Francisco, Silbert and Pines (1982) found the following: 70% had been raped or victimized 31 times on the average by customers who violated them beyond the agreed-upon contract; 65% reported physical abuse; 73% reported being raped off-the-job; 45% were robbed; 74% had customers who did not pay after having sex; and 66% were physically abused by their pimp. In a more recent study, Farley and Barkan (1998) interviewed 130 prostitutes in San Francisco (75% who were women), reporting that, while prostituting, 82% of the sample had been physically assaulted; 83% had been threatened with weapons; and 68% had been raped. Of those raped, 48% had been victimized more than 5 times, and 46% were raped by customers.

Not surprisingly, the sequelae of these events include posttraumatic stress disorder (PTSD) as well as feelings of distrust, depression, anger, low self-esteem, and confusion (Farley & Barkan, 1998; Resick & Schnicke, 1990). In Silbert and Pine's (1982) study, 69% of the sample reported PTSD symptoms; 78% reported feeling helpless while being physically abused; 79% felt helpless while being raped; and 26% experienced depression. Similarly, Farley and Barkan (1998) found that 68% of their sample met full criteria for PTSD while 76% met partial criteria for this diagnosis. Fullilove, Lown, and Fullilove (1992) found traumatic experiences to be especially prevalent among a small sample ($n = 14$) of female crack cocaine addicts involved in sex-for-drug exchanges. Specifically, they found that these women suffered from past victimization, which has also been reported by others (e.g., Farley & Barkan, 1998; O'Neill, 1997); crack cocaine related traumatic events, which will be discussed in the next section; and "stigma" trauma stemming from their being perceived as social degenerates and poor parents (p. 284).

As previously mentioned, these women may be further victimized pursuant to arguments during negotiation over sexual services to be performed and/or condom use. Additionally, during sexual encounters, prostitutes may rob customers of money to purchase drugs (Green et al., 1993; Ratner, 1993a; Sterk & Elifson, 1990), triggering a violent confrontation. Further, prostitutes engaged in drug distribution activities may also be victimized by "systemic violence," including arguments over drug prices, quality (e.g., adulterated drugs), unpaid debts, and drug-using equipment (Sterk & Elifson, 1990).

Crack Cocaine Addiction, Sex-for-Drug Exchanges, and Prostitute Risk:

Crack cocaine has rapidly become a drug of choice among prostitutes working within economically depressed areas of America's inner cities (Elwood, Williams, Bell, & Richard, 1997; Fullilove et al., 1992). Briefly, crack is a highly addictive form of cocaine. It produces a quick, intense euphoria followed by negative feelings and "craving" for more of the drug (Ouellet, Wiebel, Jimenez, & Johnson, 1993). Addicts may return to the street on an hourly basis or even more frequently to obtain more crack. In this regard, crack "binges," or ongoing, intensive desire and ingestion of the drug, can last from 2 to 3 days up to one week (Feldman, Espada, Penn, & Byrd, 1993; Ouellet et al., 1993). Binges result in a loss of income and physical exhaustion due to fatigue caused by sleep deprivation as the person constantly attempts to obtain more of the drug (Feldman et al., 1993). Other consequences include compromising personal safety, neglecting hygiene and nutrition, and ignoring family responsibilities (Griffin, Weiss, Mirin, & Lange, 1989, as cited in Fullilove et al., 1992, p. 276).

In addition to intense feelings of craving, crack's side effects include paranoia, violent behavior, irritability, hostility, loss of self-control (Sterk & Elifson, 1990). It is also known to cause sexual dysfunction in males (Ratner, 1993a; Inciardi, 1993) as well as reduced sexual interest in females (Ouellet et al., 1993; Koester & Schwartz, 1993). Alcohol may also be regularly ingested by the addict to combat the drug's side effects while bingeing (Feldman et al., 1993; French, 1993) or at the end of a binge, along with marijuana (Boyle & Anglin, 1993; Dudish & Hatsukami, 1996).

The addictive properties of crack cocaine, and its abuse by inner city prostitutes, have given rise to a unique subculture in which sex is bartered for the drug in so-called

“sex-for-crack” exchanges (Elwood et al., 1997; Fullilove et al., 1992; Koester & Schwartz, 1993; Ratner, 1993b). This is possible due to the drug’s unusual, solid form (small pieces or “rocks” sold in vials or glassine bags), allowing for sex acts to be exchanged for a rock or the price of a rock (Koester & Schwartz, 1993). Ouellet et al. (1993) explain that these women find the crack high so reinforcing that exchanging sex in return for the drug satisfies their craving most quickly, rather than having to use money to “cop,” or purchase (French, 1993), more of it.

In research samples, inner city, African-American females comprise the majority of crack cocaine addicts engaging in sex-for-crack exchanges (Dudish & Hatsukami, 1996; El-Bassel et al., 1997; Gunn et al., 1995; Ratner, 1993b). For instance, in an ethnographic study involving qualitative interviews, Ratner (1993b) found that of 340 male and female crack users assessed across 7 U.S. cities, 72% were African-American and 69% were female. Overall, approximately 56% of the entire sample was involved in sex-for-crack exchanges. However, this behavior has also been documented in other racial groups as well as among men and the socioeconomically disadvantaged (Elwood et al., 1997).

These desperate women, who will literally do anything in exchange for even small amounts of crack cocaine or money to satisfy their craving, are referred to derogatorily by other prostitutes and males who exploit them as “crack whores,” “skeezers,” “chicken heads,” “strawberries,” and “rockstitutes” (Bourgois & Dunlap, 1993; Boyle & Anglin, 1993; Elwood et al., 1997; Feldman et al., 1993; Fullilove et al., 1992; Ouellet et al., 1993; Ratner, 1993b). They are further despised by others on the street for having lost control of their addiction, for engaging in degrading sex acts, and

for driving down prices for sexual services (Feldman et al., 1993; French, 1993; Fullilove et al., 1992; Koester & Schwartz, 1993). They are often homeless, in need of food, shelter, and clothing, and are characterized by a poor physical appearance and neglect of personal hygiene (Boyle & Anglin, 1993; El-Bassel et al., 1997; Ouellet et al., 1993).

Not surprisingly, the literature reveals that these crack-addicted prostitutes engage in a multitude of risk behaviors, including having frequent, unprotected sexual encounters in exchange for crack cocaine with many partners (Booth et al., 1993; Gunn et al., 1995; Hoffman, Klein, Eber, & Crosby, 2000). For instance, Hoffman et al. (2000) examined a sample of 1723 females in 22 U.S. cities who had ingested crack in the last 30 days, reporting that women who had a higher intensity and frequency of crack use were significantly more likely to have higher numbers of sexual partners, to engage in sexual encounters more often while under the influence of alcohol and/or other drugs, and more frequently traded sex in exchange for money and/or drugs. Similarly, in a sample of 52 male and female crack-using prostitutes in Miami, Inciardi (1993) found that 90% of the female crack users had over 100 sexual partners in the 30 days prior to study participation.

Unlike street prostitutes, these crack-addicted women are not experienced in providing sexual services. In this regard, Inciardi (1993) follows that in the Miami sample traditional street prostitutes had fewer sexual encounters and dedicated more time to screening customers, taking personal safety measures, and paying attention to hygiene (e.g., insisting on condom use) than crack-addicted prostitutes, who were motivated solely to obtain more crack (Inciardi, 1993). Additionally, it is posited that traditional street prostitutes who may be addicted to crack are not dependent on customers to

provide them with the drug, which they may purchase with their own earnings (Feldman et al., 1993; Ratner, 1993b); these women also earn respect if they control their addictions, earn an income, and support a family (Feldman et al., 1993; French, 1993).

There is a substantial literature documenting the various public health risks involved in these sex-for-crack exchanges, including the spread of sexually transmitted diseases, such as HIV and syphilis (Booth et al., 1993; Gunn et al., 1995; Inciardi, 1993; Wallace, Porter, Weiner, & Steinberg, 1997). Transmission may occur through infected semen, ripped skin on the penis, and vaginal secretions (Inciardi, 1993). Further, lip, mouth, and tongue injuries (e.g., open sores) associated with crack cocaine abuse (Ratner, 1993b; Wallace et al., 1997) facilitate transmission, as oral sex is frequently performed (French, 1993; Koester & Schwartz, 1993). Some prostitutes reported that they performed oral sex, believing it was less dirty and risky than other activities, and because men with sexual dysfunction requested it (Koester & Schwartz, 1993). Inciardi (1993) reports that crack-using prostitutes were more likely to retain ejaculate in their mouths, exposing it to open sores, while traditional street prostitutes stated that they would avoid this behavior.

Typically, the crack-addicted prostitutes' fleeting sexual exchanges occur in drug-infested, inner city neighborhoods in such locations as crack houses, vehicles, apartments, hotel rooms, parks, public toilets, and isolated locations, such as abandoned buildings, dark stairwells, alleys, and behind dumpsters (Boyle & Anglin, 1993; Feldman et al., 1993). The literature reveals that some of these desperate women work in crack houses, offering them shelter, food, and a supply of crack cocaine; others come to crack houses to offer their bodies in exchange for crack (Ratner, 1993b). Within these settings

as well as elsewhere, these crack-addicted prostitutes are degraded and humiliated by male customers, drug dealers running the crack house, and crack house patrons (Feldman et al., 1993; Koester & Schwartz, 1993).

Further, during these sex-for-crack exchanges these women have little control over the sexual transaction (Boyle & Anglin, 1993). As a result, the literature reveals that women working in crack houses are forced to engage in perverse sexual acts, known as "freaking," beyond what they would perform normally (Boyle & Anglin, 1993) or willingly (Koester & Schwartz, 1993). These might include having group sex with all males present, being gang-raped, having sex with other women, anal sex, and bestiality (Boyle & Anglin, 1993; Bourgois & Dunlap; Koester & Schwartz, 1993). One male customer remarked, "For a little crack, you can make them act like circus animals" (Feldman et al., 1993, p. 148). It is posited that this sexual violence and abuse may serve to raise the prestige of the males engaging in it (e.g., street gang members) within the tough, inner city drug subculture (Koester & Schwartz, 1993). Bourgois and Dunlap (1993), who studied crack-using prostitutes in Harlem, reported that this violent sexual activity was justified by males in their sample who believed that these women were not "acting like [ladies]" and therefore were "getting what [they] deserved" (p. 125).

Within the actual sex-for-crack exchange itself, there is a high potential for violence, as both parties may be actively ingesting crack or may already be high on the drug during the sex act (Koester & Schwartz, 1993; Ratner, 1993b). For instance, males who have ingested crack may have erectile dysfunction and be unable to ejaculate, demanding increased oral sex, which the victim may not wish to provide (Ratner, 1993b). He may also blame the prostitute for his erectile difficulties and become angry or violent

(Bourgois & Dunlap, 1993; Ouellet et al., 1993). Because females may have decreased sexual interest after ingesting crack, they may not want to engage in sex, angering male customers (Koester & Schwartz, 1993; Ouellet et al., 1993). Further, the female prostitute may become angry after lengthy, vigorous sex with a male customer (Inciardi, 1993). Specifically, males experiencing erectile dysfunction or inability to ejaculate want the sex act to continue for a long time, while the prostitute wants the act to end quickly so that she may obtain more crack (Feldman et al., 1993). Dispensing of the customer quickly in this manner or robbing him of money or crack may trigger a violent encounter (Sterk & Elifson, 1990).

Sterk and Elifson (1990) interviewed 106 drug-using prostitutes in New York City (34 who used crack cocaine and 15 who engaged in sex-for crack exchanges) and found that violence erupted pursuant to the aforementioned side effects of crack after ingestion (e.g., paranoia, loss of self-control, etc.) as well as while prostitutes were "coming down" from a high, where their violence level was positively associated with the severity of this "crash." Further, violence occurred when prostitutes, who were high on crack, interrupted other prostitutes' negotiations with customers, violating an understood street rule about such activity. The authors also warn that prostitutes who have become violent with a male customer are at risk for being victimized by this same customer later, when they return to work, especially if they are under the influence of crack. In their sample, prostitutes who were high on crack were forced to perform sex acts without compensation; were assaulted and robbed of earnings; and were forced to perform sex acts they had refused to do, as explained above (Sterk & Elifson, 1990).

Prostitute Customers:

The customers of crack-using prostitutes are also described to be chronic crack addicts as well as alcoholics, petty street hoodlums (Bourgois & Dunlap, 1993), street gang members, and drug dealers (Koester & Schwartz, 1993). These men are unlikely to use protection during sex (Bourgois & Dunlap, 1993). In crack houses, customers include local people, unskilled workers, petty criminals, and other crack house operators; most come to smoke crack while others come to have sex, to watch sexual activities, and/or to meet socially (French, 1993). As previously mentioned, these men also regularly verbally, sexually, and physically abuse crack-using prostitutes who work in these settings.

The general literature on male prostitute customers has largely been generated by scholars outside of the United States. Nonetheless, because it provides the only existing basis for understanding customer motivations, it is useful to briefly examine here. Plumridge et al. (1996) studied a sample of 24 male patrons of prostitutes in New Zealand and found that most were regular customers for periods of at least one year, with most seeing their preferred prostitutes for several years. However, only 2 of these patrons solicited traditional street prostitutes, with most in the sample being serviced by women working out of massage parlors. Interestingly, these 2 men reported that they were not concerned about health risk in the prostitution stroll area and "screened" potential prostitutes much like the prostitutes themselves would "screen" customers.

Next, de Graaf et al. (1996) examined a sample of 559 male Dutch customers, finding that they made an average of 22 solicitation visits yearly. Almost 60% of the sample visited one or more regular prostitutes, and nearly 48% solicited only one kind of

prostitute (e.g., working on the street, in a brothel, or in a massage parlor). Some men in the sample stated that they solicited street prostitutes due to increased selection potential and cost. Interestingly, the authors reported the following reasons given by the men for soliciting prostitutes: not having a partner, not wanting the obligation of having a partner, loneliness, partner had reduced or little need for sex, subject had an increased need for certain sexual activities (e.g., oral sex or sadomasochistic activities), monotony and lack of "exciting" sex with partner, wanting to gain sexual experience or initiation, sexual arousal/thrill of visiting a prostitute, need for sexual contact, uncontrollable urge for sexual contact, relieving stress or anxiety, and as a reward for hard work (pp. 421-422). Assessing for the presence of these motivations, as well as differences, among the prostitute homicide perpetrators would be useful to investigators.

In a second study using the same sample, de Graaf et al. (1997) found that customers who were inconsistent condom users with prostitutes had higher levels of sexual encounters (i.e., were sexually compulsive), were less educated, more frequently visited regular prostitutes, and more often had emotional (e.g., desiring intimacy), rather than sexual, motivations. These men had less concern for their own health risk and had negative views toward condom use and prostitution. They would ignore the prostitutes' requests to wear condoms, and had more self-confidence vis-à-vis their risky encounters (i.e., being able to "screen" for healthy prostitutes). Some males in the sample, who evidenced higher levels of sexual arousal as well as interests in having sex with different prostitutes, exhibited elevated levels of unsafe sex with nonsteady prostitutes, suggesting that they found this risky activity thrilling. Ultimately, the authors conclude that sexually compulsive men, who are unable to find outlets for their arousal, are prevalent in the

prostitution subculture. Knowing whether or not a prostitute homicide suspect was a frequent visitor to stroll areas and who solicited many prostitutes would also be helpful to investigators.

Alcohol and Substance Abuse by Street Prostitutes:

The literature on traditional street prostitution reveals that these women also engage in alcohol and drug abuse during encounters and with customers. Again, much of this research has been conducted outside of the United States, and, as such, consideration must be given to different substance abuse patterns. Although beyond the scope of this research, the use of alcohol and other drugs by street prostitutes, beyond supporting their addictions (Gossop et al., 1994), has been described as a coping mechanism (Gossop et al., 1994; Morrison & McGee, 1995; Philpot et al., 1989). Additionally, Gossop et al. (1994) reported that prostitutes in London used alcohol to help them relax, to be sociable, and to gain confidence. However, like crack cocaine, alcohol use by prostitutes has been associated with an increase in their willingness to have unsafe sex (Gossop et al., 1995). Further, Morrison and McGee (1995) posit that street prostitutes who drink and take drugs relinquish control over negotiating the sexual contract, and attract customers who wish to victimize them.

In a sample of 206 male and 3 female prostitute patrons in Scotland, Thomas, Plant, and Plant, (1990) found that approximately 78% of these customers reported that occasional drinking occurred during their sexual encounters, while over 40% said that drinking frequently occurred or that they always drank during encounters. Approximately 17% of the patrons said they sometimes used drugs when meeting prostitutes, while 12% reported that they always used drugs in these situations. The

respondents estimated that female prostitutes were under the influence of alcohol or drugs approximately 38% and 33% of the time, respectively, during encounters. Similarly, Gossop et al. (1995) found that almost 77% of a sample of 51 prostitutes in London ingested alcohol before or during encounters, with 59% of the respondents indicating that they always ingested alcohol in this manner. In a sample of 277 female prostitutes in Sydney, Australia, Philpot et al. (1989) found that approximately 21% of these women were drinking at harmful levels.

Sexual Homicide, Serial Homicide, and Crime Scene Analysis Literature:

Because the NCAVC has consulted upon numerous cases involving serial prostitute homicide victims - many, if not most of which involved sexual aggression, as exhibited at the crime scene - and since the act of prostitution itself involves a sexual transaction between the female sex seller and the male customer (Hatty, 1989), the literature on sexual and serial homicide and crime scene analysis was surveyed. As previously mentioned, a sexual homicide is a murder that is sexually motivated, determined through either physical evidence or by observation (Ressler et al., 1988). The FBI currently defines serial homicide as "two or more killings committed as separate events, usually, but not always, by one offender acting alone. Crimes may occur over a period of time ranging from hours to years. Quite often the method is predatory/stalking, the motive is psychological, and the offender's behavior and physical evidence observed at the crime scenes will reflect sadistic, sexual overtones" (FBI, n.d., p. 3). A prior FBI definition of a serial killer cites the occurrence of an "emotional cooling-off period" between killings (Ressler et al., 1988, p. 139).

Not surprisingly, much of the literature on sexual homicide and serial murder has been authored by FBI Special Agents assigned to the NCAVC and consulting scholars, published in a number of studies which, concurrently, examine crime scene analysis, criminal profiling, and other topics, such as sexual sadism (e.g., Dietz et al., 1990; Douglas et al., 1986; Prentky et al., 1989; Ressler, Burgess, et al., 1986; Ressler, Burgess, Hartman, et al., 1986; Ressler et al., 1985a, 1985b, 1985c, 1988). To begin, the FBI's sexual homicide and serial murderer research stems from interviews conducted by Special Agents with 36 male, incarcerated sexual murderers between 1979 and 1983. The collective findings of this research are published in Ressler et al.'s (1988) book, entitled, Sexual Homicide: Patterns and Motives, from which many of the variables included in this study have been directly excerpted and in the order of their presentation, covering the offender's prehomicide state, the homicide itself, and posthomicide behavior.

These men were responsible for the deaths of 118 victims, 9 who survived (Ressler, Burgess, et al., 1986; Ressler et al., 1988). More specifically, 24 subjects were classified as "organized" offenders, responsible for 97 victims, while 12 subjects comprised "disorganized" offenders with 21 victims (Ressler, Burgess, et al., 1986). Of the 36 subjects, 25 were classified as serial murderers, and the 11 others had committed other murders, such as single or double homicides (Ressler et al., 1985a). However, because the FBI's definition of serial murder at this time required three or more victims to be so-classified (Ressler et al., 1988), the overall number in the sample would exceed 25 in light of the lower, two-victim requirement used today (FBI, n.d.a).

Although this unique, early research by the FBI and others largely forms the basis

of our knowledge regarding serial homicide, offender typologies, and criminal profiling from crime scene analysis, it is important at the outset to acknowledge its inherent empirical limitations. Most notably, the sample size is small, lowering the power of the statistical tests used in the analysis (Cohen, 1988). Next, the self-selected subjects were interviewed by one or two FBI Special Agents, who were trained for the interviews and who questioned them about their backgrounds, homicides, victims, and crime scenes. The agents also reviewed the offenders' existing files (Ressler et al., 1988, p. xi). In addition to a potential self-report bias (Hall, 1996) and a confound introduced by using law enforcement personnel to conduct research interviews (e.g., perception by the subject of an adversarial interviewer), it is also unclear whether the interviews were standardized, and no empirically-validated psychological measures were apparently administered. However, a 24 item checklist of "behavioral indicators" (e.g., daydreaming, firesetting, stealing, phobias, self-mutilation) based upon existing "psychosocial research" was completed by the investigators (Ressler et al., 1988, p. 28). Most obviously, the FBI study lacked a comparison group.

Lastly, the over 400 principally categorical variables comprising the data set were analyzed with multiple t-tests (Ressler, Burgess, et al., 1986), and it is unclear whether measures were undertaken to control the experiment-wise error rate. The reported results are generally presented as comparative percentages or are even anecdotal in nature (e.g., Ressler et al., 1988; Ressler, Burgess, et al., 1986; Ressler et al., 1985a, 1985b). Notwithstanding these shortcomings, the FBI's research does identify a plethora of salient perpetrator, victim, and crime scene variables that are relevant to the present study. In particular, those characteristics found to be empirically significant are

presented within their respective categories (e.g., perpetrator variables) and subcategories where appropriate (e.g., precrime behavior, postcrime behavior, etc.). These variables, as shall be discussed, were included in the questionnaire designed for the study.

Perpetrator Variables:

To begin, almost all (92%) of the 36 offenders were Caucasian, with the majority having average or better intelligence (27 of 34 offenders or 80%), although many (15 of 25 offenders or 60%) had a poor academic record in high school. Many offenders had a history of unsteady employment (24 of 35 offenders or 69%) (Ressler et al., 1988). Despite having the ability to hold skilled jobs, most offenders held unskilled positions, with few (7 of 35 offenders or 20%) working consistently (Ressler et al., 1985b, 1988). Most respondents reported feeling isolated (73%) and had a poor body image (62%) (Ressler et al., 1988).

Although the FBI identifies the offenders' deprived and chaotic developmental backgrounds - reflecting histories of sexual, verbal, and physical abuse; familial alcohol use and instability; domineering maternal figures; and negative relationships with male caretakers, for instance - as being critical in fostering their murderous motivations, these factors will not be further discussed here, as they do not represent easily identifiable variables that would aid in the apprehension of a perpetrator. The interested reader may consult Ressler, Burgess, Hartman, et al. (1986), Ressler et al. (1985b, 1988) for elaborations of this theory.

Victimology:

As previously mentioned, there were 118 victims (109 killed and 9 survivors) in the FBI's sample (Ressler et al., 1988). The majority of the victims were Caucasian

(93%), female (82%), unmarried (80%), and between the ages of 15-28 years old (73%, based on 113 victims). Almost half (47%) of the deceased had proximate ages to the offender, while a sizable proportion were younger (37%). Most victims were strangers (81%), while the rest (19%) were known by the perpetrator. Many of the victims had an average to above average socioeconomic status (62%), while one-third (30%) had marginal incomes. At the time of the attack, more than half (63%) of the victims were alone, although one-third were accompanied by a companion (Carter et al., 1988; Ressler, Burgess, et al., 1986).

The offender demographics and victimology data reveal that the offenders were almost exclusively Caucasian, killed intraracially, and murdered predominantly females. These data are consistent with recently reported national crime statistics, stating that murder is intraracial and that men are responsible for murdering approximately 89% of all female victims (FBI, 2000a, p. 17). Interestingly, in calendar year 1999, in excess of 48% of all murder victims were acquainted with their killers (14% of the victims were related and 34% were acquaintances); 12% of the perpetrators were strangers; and 40% of the victim-perpetrator relationships were unknown. Spouses or boyfriends were the murderers of 32% of the female victims, and 30% of all homicides stemmed from arguments (FBI, 2000a, p. 17). Hence, the aforementioned research suggests that serial homicide, as a phenomenon, falls within the low frequency "stranger/victim" category.

Victim/Offender Interaction During Assault:

In Ressler et al.'s (1988) sample, there were 83 cases with victim response data, with 67 attributed to organized offenders and 16 attributed to disorganized offenders, respectively. According to the perpetrators, 28% of these victims offered no resistance;

31% attempted to negotiate; 19% resisted physically; 10% screamed; 7% refused verbally; and 5% tried to escape. In 65% of these cases, the sexual murderers responded to the victim's resistance (i.e., with violence (25%), with greater aggression (25%), and with verbal threats (15%)). The authors found that 66% of those victims who resisted nonforcefully were killed anyway, as were all of those who physically resisted or who offered no resistance (Carter et al., 1988; Ressler, Burgess, et al., 1986). These data suggest that the sexual homicide offenders generally escalated their attacks to any victim reaction, while following through with their homicidal motive, notwithstanding the victim's response. This pattern of escalation has been demonstrated in adult rapists (Carter et al., 1988).

Victim Resistance, Crime Escalation, and Related Offender Typologies:

In this regard, Carter et al. (1988) report on a study of 108 convicted rapists, incarcerated in a facility for sexual aggressors, who attacked 389 victims. They posit four rapist typologies: compensatory (the rapist is motivated by rape fantasies, multiple paraphilias, feelings of sexual inadequacy, and beliefs that females will never become intimate with him); exploitative (the rape is spontaneous, predatory, and without remorse; the offender wants the victim to succumb to his advances); displaced anger (the rape stems from anger and rage, with the victim representing someone who is hated; the offender's anger may be derived from actual or perceived wrongdoings); and sadistic (the rape represents an expression of sadistic sexual fantasies, which mutually reinforce each other; the anger may not be manifested possibly until sexual arousal occurs, with violence directed at the victim's sexual areas, such as breasts, genitals, anus, mouth, and buttocks) (p. 202).

Although no empirical data is cited, Carter et al. (1988) report that all rapist typologies responded to physical victim resistance with more severe aggression than passive resistance. They also offer specific victim resistance outcomes with two rapist typologies that may apply to the perpetrators of prostitute homicide. Specifically, they posit that because the displaced anger rapist desires to hurt the female, citing his own perceived victimization by women, any physical resistance by the victim may justify his "punishing" her and escalating his attack (p. 207). Similarly, 16% of the prostitutes in Silbert and Pines' (1982) study reported being beaten by a customer who despised their gender and/or profession. In this regard, Holmes and De Burger (1988) propose two serial killer subtypes of interest, based upon their analysis of court documents, interviews, case studies, clinical data, and biographies for 110 multiple murderers (pp. 59-60). As with much of the existing serial murder literature, they do not furnish empirical evidence of their findings, leaving their conclusions open to question.

Specifically, Holmes and De Burger (1988) describe the "mission-oriented serial killer" as an individual whose conscious goal is to eliminate a particular group or category of persons who have been deemed "undesirable" or "unworthy" of living in society - such as one murderer who wanted to rid Louisville, Kentucky of prostitutes as a "community service" (p. 57). With a similar motivation, Robert Hansen murdered 17 prostitutes in Anchorage, Alaska's red-light district (Holmes & De Burger, 1988; Levin & Fox, 1985). Mission-oriented killers are described to be frequently nonpsychotic persons, who function within day-to-day life, and who realize the consequences of their "crusade" (Holmes & De Burger, 1988).

Levin and Fox (1988) further mention that some offenders who hunt and kill

prostitutes may do so out of displaced anger and disgrace of their own mothers' promiscuous and sexually perverse behaviors, whether actual or perceived (p. 104). Conversely, the "visionary serial killer" is a psychotic offender who is motivated to commit homicides by delusions or hallucinations (Holmes & Holmes, 1996). In a later work, Holmes and Holmes (1996) describe a hypothetical case of a prostitute homicide with a disorganized crime scene, evidencing necrophilia; they follow that this evidence might suggest a visionary killer who is "ridding the world of prostitutes," motivated by a delusion (p. 82).

Moreover, Carter et al. (1988) argue that because the sadistic rapist is motivated solely by his violent fantasies, then neither physical nor nonphysical resistance will deter him, and will likely increase his sexual arousal and anger, possibly resulting in serious injury or death (p. 208). The response of this rapist subtype to victim resistance closely resembles that of the sexual killers described above, who murdered their victims notwithstanding of the circumstances. Sexually sadistic murderers will be examined as part of the next section of this review.

Deviant Sexual Interests and Sexually Sadistic Fantasy Life:

Notwithstanding their sexual offending histories, the offenders' backgrounds also reveal a high degree of deviant sexual interest, notably in the paraphilias. For instance, when asked to rank their sexual interests, pornography was ranked the highest (25 of 31 offenders or 81%), followed by compulsive masturbation (22 of 28 offenders or 79%), fetishism (21 of 29 offenders or 72%), and voyeurism (20 of 28 offenders or 71%) (Ressler et al., 1985a, 1988, pp. 24, 29). Other interests reported by the sample included bondage (39%), exhibitionism (25%), zoophilia (23%), telephone scatologia (22%),

frottage (18%), cross-dressing (17%), prostitution (11%), and coprophilia (7%) (Ressler, Burgess, Hartman, et al., 1986, p. 277). A significant number of the respondents also engaged in daydreaming (81%).

The use of pornography, compulsive self-stimulation, and prevalence of paraphilias in the daily lives of these men attests to the solo nature of their sexual interests (Ressler et al., 1985a, 1988). Hence, it is not surprising that approximately 75% of the subjects expressed sexual concerns, including sexual aversion or inhibition to being intimate with peers (61%), sexual conflicts (69%), sexual incompetence (69%), sexual inhibitions (61%), sexual ignorance (59%), and sexual dysfunction (56%) (Ressler, Burgess, Hartman, et al., 1986, pp. 277, 279-80; Ressler et al., 1988, p. 25).

All 36 murderers in the FBI sample also reported the presence of sexually sadistic fantasies, with slightly over half (53%) citing their development between 5-25 years of age. Many of the killers cited rape fantasy development, beginning in childhood (22/36, 61%), as well as other pathologies, such as histories of animal torture (36% of 28 subjects) and firesetting (56% of 25 subjects) (Ressler et al., 1988, pp. 24, 29).

The Fourth Edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM IV, 1994) describes sexual sadism as a paraphilia manifested by an individual deriving sexual arousal from a victim's psychological and physical suffering and humiliation. The perpetrator's sadistic fantasies might only be triggered during sexual acts. The fantasies or actions themselves might include total domination of the victim, the use of restraints, blindfolds, whipping, beating, burning, the use of electrical shocks, raping, cutting, stabbing, strangling, torture, mutilation, and killing (p. 530). Sexually sadistic fantasies are said to have a childhood

onset, with an acting out of the fantasies beginning in early adulthood. The condition is described as chronic, with the severity of sadistic acts escalating over time. When sexual sadism is comorbid with antisocial personality disorder (APD), the DSM IV (1994) warns that victims are at high risk for personal injury or death (p. 530).

In this regard, Geberth and Turco (1997) reviewed the cases of 232 male serial murderers who had committed sexual homicides, as described previously, to determine the prevalence of comorbid sexual sadism and APD, as defined in the DSM IV (1994). Briefly, the diagnostic criteria for APD include prior evidence of conduct disorder and three or more of the following factors, which encompass violations of the rights of others and societal rules (breaking societal laws as evidenced by the commission of repeated, arrestable behaviors; chronic lying and deceitfulness of others; impulsiveness and lack of planning; irritability and aggression, manifested by repeated assaults, fights, etc.; reckless disregard for one's safety or that of others; chronic irresponsibility, evidenced by frequent work changes, unpaid debts, etc.; and total lack of remorse for one's conduct toward others) (DSM IV, 1994, pp. 649-650).

Due to incomplete records, the authors were only able to analyze 68 complete files, although all met criteria for both sexual sadism and APD diagnoses. The subsample was predominantly Caucasian and heterosexual (82%), over 25 years old (68%), and never married (60%) (Geberth & Turco, 1997). Although the findings reveal a subset of serial murderers with comorbid sexual sadism and antisocial personality disorder, they must be interpreted with caution due to the many subjects that were excluded, the resulting small sample size, the lack of a comparison group, and the retrospective nature of the research.

MacCulloch, Snowden, Wood, and Mills (1983) examined the content and manifestation of fantasies in a small sample of 13 hospitalized subjects with histories of sexual offenses (or offenses with a sexual component) and comorbid diagnoses of psychopathy. Through record reviews and interviews, the authors found that 9 of the subjects had been masturbating to sadistic fantasies, including rape, kidnapping, whipping, torture, and murder, prior to committing their index offenses, which included many of these same crimes. The perpetrators reported that they altered their fantasies in order to maintain a high level of arousal. In other words, using a classical conditioning paradigm, having habituated to a fantasy (the conditioned stimulus), they necessarily increased its violent content (i.e., enhanced its novelty and intensity) to maintain its highly reinforcing properties, namely the ability to elicit the conditioned response (i.e., sexual arousal) (Domjan & Burkhard, 1986; MacCulloch et al., 1983).

MacCulloch et al. (1983) state that this classical conditioning model offers an explanation for the salience and permanence of the sadistic fantasies as well as their progression to sexual and physical acts of aggression, ostensibly because the fantasies themselves became habituated over time, and were replaced with sadistic acts, which then became conditioned with sexual arousal. Similarly, with regard to their sample of sexual murderers, the FBI posits that their sadistic fantasies, which developed during childhood, evolved into acts of sexual aggression and eventually murder. They argue that early fantasies pertained to the act of murder, while successive fantasies addressed how to "perfect" aspects of successive homicides (Ressler et al., 1985c; 1988).

One may also offer an explanation for this pathology based upon the empirical law of effect in operant learning theory, which posits that reinforcers are anything that

increases the frequency or strength of behaviors, or operants (Malone, 1991, p. 232). Here, the offender's initial sadistic fantasies which no longer have reinforcing properties, have been replaced by acts of torture and murder, which are highly reinforcing. The reinforcing nature of the homicide further suggests an explanation for repetition of this behavioral act, resulting in a string of serial homicides.

During their investigation, MacCulloch et al. (1983) determined that the 13 subjects enhanced their fantasies through so-called "behavioral try-outs" (p. 25), or by acting-out their fantasies in public. For those offenders with sadistic fantasies, some of these try-outs resulted in criminal apprehension and conviction. The crimes committed ranged from sexual offenses (e.g., attempted rape, rape, indecent assault, indecent exposure) to thefts (e.g., car theft, theft of house keys), robberies, assaults, drunk driving, drunk and disorderly charges, and possession of weapons. Eight of the subjects, like the offenders in the FBI's sexual murderer sample (Ressler et al., 1988), were social isolates with limited sexual contact and experience with others, obtaining sexual pleasure from their fantasies and behavioral try-outs; five subjects with sex partners reported masturbating to their fantasies and utilizing them to become aroused during moments of intimacy (p. 25). Finding evidence of such tryouts would be useful to criminal investigators, and this phenomenon was incorporated into the study's protocol.

Hazelwood, Warren, and Dietz (1993) interviewed 7 female wives or partners of documented sexual sadists to ascertain whether they were subjected to the same sadistic behaviors as the offenders' other victims. Despite the small sample size and subjective nature of the results, all of the women were victimized physically (e.g., beaten with fists, blunt objects, strangled manually or by ligature, bitten, whipped, clamped on nipples and

labias); sexually (e.g., anal sex, forced fellatio, offender ejaculated on body or face); and emotionally (e.g., forced to repeat words or phrases, to describe the sex acts taking place, to beg for physical and/or sexual abuse, to degrade themselves and parts of their bodies, and to help create their partner's perverted fantasies). The authors report that the sadists had a negative global worldview of women, and constantly degraded their female partners, calling them "whores" and "bitches." The 7 women were also forced verbally and physically to comply with the sadists' sexual fantasies. Anecdotally, the women told the authors that the sadistic men could never be sexually satisfied, and that sex activities predominated their daily lives (Hazelwood et al., 1993).

Although these findings must be interpreted with caution, they do suggest that sexually sadistic individuals require a high degree of arousal and generalize their behaviors across situations, to include their spouses and partners (Hazelwood et al., 1993). The authors suggest that domestic violence reports may be used to furnish leads for yet unsolved crimes that involve sexually sadistic activity (Hazelwood et al., 1993). The prostitute homicide study's protocol also assessed for the presence of sexually sadistic activity across situations.

Dietz, Hazelwood, and Warren (1990) retrospectively examined the cases of 30 male sexual sadists submitted to the NCAVC. The preselected sample was found to be exclusively Caucasian (97%), as were the victims (97%) who were mostly females (73%) and strangers (83%). Seventy-three percent of the sample ($N = 22$) were known to have killed 187 victims, and 17 of the men were documented serial murderers. Although most offenders (57%) had no prior arrest histories, a sizable percentage (43%) had arrests for nonsadistic sexual offenses and other criminal violations. Further, 50% of the sample

abused drugs (Dietz et al., 1990). A significant number of the sadists (83%) maintained collections of items with sexual and violent themes, such as pornography (53%), guns (37%), bondage materials (27%), detective magazines (23%), and police paraphernalia (30%) (Dietz et al., 1990). These criminal history and sexual sadism lifestyle variables will be included in the analysis; if significant, they will facilitate active investigations of prostitute homicide by narrowing their focus, say, to a suspect with a history of sexual offenses who possesses a violent pornography collection.

Nearly all of the offenders (93%) in Dietz et al.'s (1990) sample had planned their offenses, evidenced by their studying police procedures, collecting and studying weapons, constructing torture devices and kits, altering vehicles for abductions, taking burial items (e.g., shovels and limestone) with them, stalking victims, bringing supplies of food to isolated locations, wearing gloves, and bringing victims to preselected areas (Dietz et al., 1990, p. 169). The authors found that 67% of the offenders preferred to keep their victims alive for periods ranging from one day to six weeks before either killing or releasing them. Hence, the length of time spent with the victim prior to killing, if extended, may be indicative of an offender with sadistic tendencies (Ressler et al., 1988).

Further, all offenders used torture, and most used restraints (87%) and bondage materials (77%) (Dietz et al., 1990). These methods are commonly used by organized offenders and are means of exercising their power over the victim. More specifically, bondage is used to restrain the victim for torture; to degrade the victim; and to inflict pain upon the victim (Holmes & Holmes, 1996). The preferred sex acts committed by the sample of sadists on their victims reflect significant humiliation, including anal sex (73%

of sadists), forced fellatio (70%), vaginal rape (56%), and penetration with foreign objects (40%) (Dietz et al., 1990). A majority of the sample (67%) performed three or more of these sex acts with one or more of their victims. Interestingly, 43% of the men evidenced sexual dysfunction (Dietz et al., 1990).

Using victim statements, actual offender recordings of attacks, or existing interviews of some subjects, Dietz et al. (1990) posit that in approximately 87% of the cases, the offender exhibited flat, "detached" affect (p. 171), which, superficially, suggests antisocial (i.e., lack of remorse) characteristics and a planned, focused (i.e., organized) attack. Furthermore, for those offenders who killed their victims, their methods were personal, involving strangulation (61% of 130 homicides with known causes of death). A smaller percentage of victims were killed by firearms (25%). Most offenders concealed the body of the victim (67%), and slightly more than half (53%) documented at least one offense for themselves (e.g., kept diary, made drawings, took pictures, made audiotapes/videotapes of incident). Forty percent of the sadists kept some of the victim's personal effects as mementos, such as underwear, shoes, jewelry, a license, or a wallet (Dietz et al., 1990).

Many of the sexual sadist characteristics identified by Dietz et al. (1990) (e.g., planning of crime, selecting stranger victims, etc.) are consistent with the organized serial offender typology (e.g., Ressler et al., 1988). Indeed, as mentioned, 17 of 30 offenders were documented serial murderers. The findings also closely replicate the demographic and victim selection trends (i.e., Caucasian males who murder Caucasian females who are strangers) found in the FBI's sexual murderer sample (Ressler, Burgess, et al., 1986; Ressler et al., 1988). Again, Dietz et al.'s (1990) results should be interpreted with

discretion due to the small, preselected sample and lack of a comparison group.

Prentky, Burgess, Rokous, Lee, Hartman, Ressler, and Douglas (1989) did examine the hypothesized, critical role of fantasy in serial murder retrospectively, comparing 17 single victim sex murderers (7 from the aforementioned FBI sample of 36 sexual murderers - see Ressler, Burgess, et al., 1986; Ressler et al., 1988 - and 10 sex murderers incarcerated in a forensic hospital) with 25 serial killers from the FBI sample. Although this study's design and methods are empirically sound, one must cautiously interpret the results in light of the small sample size, with some comparisons involving less than five subjects, for instance. Specifically, the authors hypothesized that the serial offenders would have a higher prevalence of violent sexual fantasies (coded positively if interviews with the subject or his records revealed the presence of fantasies involving sadism and/or sexual violence); would exhibit organized crime scenes (first crime scene of each serial murderer utilized for the comparison, with organized coded positively if a crime scene appeared orderly or planned, while disorganized was coded for chaotic, sloppy crime scenes); and would have a higher prevalence of paraphilias (coded if there was documented file evidence or if self-reports indicated that the perversion was practiced by the subject). The authors also measured the presence or nonpresence of planning, measured by such criteria as the offender bringing his own weapon or prior rehearsal of the crime (Prentky et al., 1989).

Demographically, the serial murderer group in the Prentky et al. (1989) study was almost entirely Caucasian, while the single murderer group had almost 20% African-American and Hispanic composition. Although the serial group had a higher percentage of members with above average IQ's (58% of serial offenders versus 29% of single

offenders, respectively), this result was not statistically significant. Nonetheless, the authors interpret these figures, suggesting that the prevalence of higher IQ's amongst serial offenders signifies a more sophisticated "translation" of their fantasy into acting-out behavior, manifested by organized crime scenes (p. 888). The authors found that the serial offenders had significantly more sexually violent fantasies (86%) than the single homicide offenders (23%); a higher prevalence of all paraphilias measured (compulsive masturbation, exhibitionism, voyeurism, fetishism, and cross-dressing), although only fetishism and cross-dressing were statistically significant; and a significantly higher percentage of organized crime scenes (68% versus 24%, respectively).

Prentky et al. (1989) posit that the comorbidity between serial murder and sexually violent fantasies suggests a functional relationship between them (p. 890). Citing MacCulloch et al.'s (1983) findings, they explain that serial murderers attempt to act out their violent fantasies, only to repeat the action with a new victim when their prior effort does not "match the fantasy" (p. 890). Although they do not entirely agree with MacCulloch et al.'s (1983) classical conditioning explanation of fantasy development, stating it is "unlikely" that the theory completely explains the fantasy-behavioral acting-out progression, they do propose that the offender's repeated rehearsal of the fantasy creates a strong association with his sexual arousal; specifically, this involves the differential reinforcement of deviant sexual fantasies by compulsive masturbation, offering a behavior theory-based explanation for their salience and resistance to extinction over time (Prentky et al., 1989 p. 890).

Like MacCulloch and colleagues (1983), Prentky et al. (1989) suggest that the serial offenders' paraphilias foster their sexually violent fantasies by giving them a

convenient, behavioral means to exercise them. Most importantly, they propose that the presence of deviant fantasies may be predictive of future sexual violence and should be considered in risk models with this unique population. Additionally, supporting the findings of MacCulloch et al. (1983) and Hazelwood et al. (1993), they argue that one may identify behavioral evidence of violent fantasies through paraphilias, sadistic fantasies being carried out upon significant others, and other factors, such as a history of animal torture (p. 891).

Criminal and Sexual Offending Histories:

As adults, 86% of the subjects in the FBI's sample (Ressler et al., 1988) engaged in assaults against other adults; 72% reported rebelliousness; 56% reported stealing; and 68% lied chronically to others. Of a subset of 34 offenders, nearly all (94%) had a prior history of sex offenses, while 38% had four or more convictions in this regard. Of 13 offenders who served in the military, eight (62%) stated, or were otherwise strongly suspected, that they had committed undetected sex offenses while on duty, while only four were discharged honorably (Ressler et al., 1985b; Ressler et al., 1988).

Murder Phases - Antecedent Behavior and Planning:

Psychosocial Stressors:

The FBI's sample of 36 sexual murderers cited the following psychosocial stressors, endured prior to their committing a homicide, were ultimately responsible for triggering their behavior: conflict with female (59% of 81 homicides); parental conflict (53% of 86 homicides); financial difficulties (48% of 86 homicides); employment problems (39% of 90 homicides; suspected in an additional 26%); marital problems (21%

of 89 homicides); legal problems (28% of 89 homicides); conflict with male (11% of 81 homicides); physical injury (11% of 83 homicides); death of significant person (8% of 78 homicides); and childbirth (8% of 89 homicides) (Ressler et al., 1988, pp. 45-47).

Additionally, the sex offending literature reveals that "internal stressors" (i.e., negative affective states), which will be discussed below, and "external stressors" (i.e., exogenous pressures, such as sudden financial problems) (Nezu, Nezu, & Dudek, 1998), also referred to as "situational stimuli" (e.g., reading violent pornography, being angered by someone, using alcohol) (Hall, 1996), may precipitate sexually aggressive acts. Should prostitute murderers evidence these, or other, stressors, or have a history of sexually acting-out pursuant to stress, such knowledge would be useful to criminal investigators, potentially narrowing their suspect pool to someone who, say, recently lost his job or who was known to become sexually aggressive while intoxicated.

Negative Emotional States:

Additionally, a significant number of offenders in the FBI sample evidenced negative affective states prior to the murders. Specifically, the sexual murderers reported that they felt frustrated (50% of sample); hostile/angry (46%); agitated (43%); excited (41%); nervous (17%); depressed (15%); afraid (10%); calm (9%); and confused (7%) (Ressler et al., 1985c, 1988, p. 48). Ressler et al. (1988) hypothesize that the offender's negative mindset before the crime predisposes him to, likewise, interpret the victim's own behavior negatively (p. 48). A similar state has been reported in sex offenders, where negative affect, such as feelings of anger or depression, precipitates subsequent sexual aggression, also described as "affective dyscontrol" (Hall, 1996). Physiological arousal and disinhibition attributable to substance use may also serve as internal stressors

(Nezu et al., 1998). Knowing whether or not prostitute killers are experiencing negative feelings prior to committing a homicide is useful to field investigators, who might be able to identify a suspect – through interviews with other prostitutes or witnesses - who exhibited anger or frustration when initially encountering the victim.

Planning of Homicide:

One-half of the FBI sexual murderer sample revealed that they had planned their homicides (Ressler et al., 1988). As previously mentioned, Dietz et al. (1990, p. 169) and Prentky et al. (1989) operationalized this variable according to whether the offender studied police procedures, collected and studied weapons, brought and removed his own weapon from the crime scene, fabricated torture devices and kits, altered a vehicle for kidnapping purposes, took burial items with him to the crime (e.g., shovels and limestone), stalked victims or otherwise rehearsed the crime (e.g., “cased” a desired area, such as a prostitution stroll location), packed extra food to take to distant crime scene locations, wore gloves, and/or brought victims to preselected areas. These planning activities were incorporated into the study’s questionnaire.

Precrime Actions:

Ressler et al. (1988) explain that in the days prior to committing a homicide, some of the sexual murderers engaged in criminal, violent, and self-destructive behaviors. These included fetish burglaries, threatening and assaulting a spouse, discharging weapons, killing animals, firesetting, thefts, cruising for victims, and ingesting drugs and alcohol (pp. 49-50). The value of knowing whether or not a prostitute killer is likely to engage or to have engaged in such activities is obvious - these behaviors might be noticed or brought to the attention of law enforcement.

Victim Selection:

The FBI posits that the process of victim selection signifies the beginning of the offender's acting-out of his planned homicide and/or fantasy. A victim might be chosen due to physical traits; a certain profession, such as prostitution; according to a role in the perpetrator's fantasy; or for symbolic purposes, representing a person in the offender's past or a manifestation of a past conflict (Ressler et al., 1988, p. 50). For instance, Ressler et al. (1988) write that one subject murdered victims resembling his mother while another killed women resembling those who rejected him platonically in the past (p. 50). As previously mentioned, the victim may represent a despised group, targeted by the killer for elimination (Holmes & De Burger, 1988).

Furthermore, the victim may elicit certain reactions from the offender, perhaps because she reminds him of something (e.g., a prostitute reminds an offender of vileness), enraging the offender, and, ultimately, resulting in her death (Ressler et al., 1988). Victims may also be chosen based upon the killer's assessment that he may commit the crime without being apprehended (Holmes & Holmes, 1996), perhaps because they are alone, in an isolated location, or otherwise vulnerable. As such, the high percentage of stranger victims selected by serial killers (e.g., Ressler et al., 1988) and sexual sadists (e.g., Dietz et al., 1990) appears intentional; their lack of prior contact with the victim minimizes the likelihood that they will be detected (Dietz et al., 1990). In the current study, the NCAVC's desire to distinguish between single and multiple prostitute homicide victims, as well as their anecdotal observations of victimology and crime scene differences among prostitute victims, warranted the inclusion of a victim selection variable. It was hypothesized that this factor would account for differences in the victim

preferences of single and serial prostitute murderers.

Victim-Perpetrator Interaction/Triggering Factors:

Many of the 36 sexual murderers in the FBI sample (Ressler et al., 1988) cited certain triggering factors, culminating in the act of homicide. It is posited that the offender's aforementioned negative emotional state makes him especially volatile to escalation (Ressler et al., 1988). Additionally, many of the triggering variables iterated by the offenders alluded to their own violated sense of control, resulting from the victim's behavior during the attack. These complement the aforementioned situational/interactional factors gleaned from the prostitution literature.

Specifically, the triggers mentioned by the sexual murderers included: the victim running away (i.e., offender feels he is losing control); the victim's compliance (i.e., offender believes victim is seizing control); the victim's behavior does not match his sexually violent fantasy, angering him; the victim's behavior matches a sadistic fantasy, resulting in death, as planned; merely acting-out the death fantasy on a victim, who is irrelevant; experiencing negative affect; and the ingestion of substances (Ressler et al., 1985c, 1988, pp. 50-52). Of the 36 sexual murderers, 49% and 35% reported alcohol and drug use, respectively, at the time of their crimes (Ressler et al., 1988). Similarly, studies of prostitute customers report that they are under the influence of substances, or ingesting substances, at the time of the encounter (e.g., de Graaf et al., 1995; Thomas et al., 1990).

Murder Phases - The Act of Murder:

The FBI theorizes that murder is the "epitome" of expressed dominance over a victim, and that a sexual murderer's first homicide grounds his violent fantasy in reality

(Ressler et al., 1985b, p. 6). Ressler et al. (1988) write that all of the 118 homicides or attempted homicides committed by the 36 offenders were sexual in nature, and that both the execution of these crimes, as well as their symbolic meaning to the offender, varied widely. Specifically, a number of crime scene variables, pertaining to perimortem and postmortem sexual and sadistic acts committed on the victim, may be identified. These factors have been found to distinguish between organized and disorganized sexual murderers (e.g., Ressler, Burgess, et al., 1986; Ressler et al., 1988) and, as such, were included in this study in an attempt to describe the perpetrators of single and serial prostitute homicide, based upon the characteristics of their victims.

Perimortem and Postmortem Sexual Intercourse:

For instance, 56% of the 108 homicides in the FBI sample involved the rape of the victim prior to death (Ressler et al., 1988). Rape prior to killing may reflect the offender's desire to have complete mastery over the victim, without regard to the consequences. Conversely, rape after killing, or necrophilia, suggests that the offender requires death "to have total domination without fear of resistance and/or rejection" (Ressler et al., 1985b, p. 6). As previously mentioned, the presence of postmortem sexual intercourse may also be indicative of a psychotic component to the offender's psychopathology (Holmes & Holmes, 1996). In the FBI sample, 42% of 92 homicides involved postmortem sexual acts (Ressler et al., 1988). Another variable that should be considered is the length of time the offender spends attacking his victim and then performing acts with the corpse, if any, prior to disposing of the body. To spend an extended period of time with a victim increases likelihood of apprehension, unless the offender preselects a known, isolated location for this purpose (Ressler et al., 1988).

Mutilation of Victim:

Mutilation usually occurs postmortem, and encompasses a variety of violations to the victim's body, including the insertion of foreign objects into vaginal and anal orifices; slashing of the corpse; cutting of breasts and buttocks; and biting (Ressler et al., 1988). It is described to represent the epitome of an offender's sexually sadistic fantasy (Ressler, Burgess, Hartman, et al., 1986; Ressler et al., 1988), and may be necessary to maintain the offender's high level of sexual arousal, as explained previously (e.g., MacCulloch et al., 1983; Prentky et al., 1989). It may comprise a primary sadistic fantasy or may be part of a secondary fantasy, involving dismemberment of the corpse for body disposal (Ressler et al., 1985b), reinforcing the offender's sexual arousal, possibly through picquerism, or the repeated stabbing or wounding of a person for sexual gratification (Holmes & Holmes, 1996). Dismemberment is also posited to demonstrate the killer's power over and ultimate degradation of the victim (Holmes & Holmes, 1996).

The FBI also notes that mutilation fantasies may be evidenced through symbolic markings and cut patterns on the victim (Ressler et al., 1985b). Other forms of mutilation at the crime scene, which are usually attributed to a disorganized offender, are the removal of the victim's breasts (defeminization), the postmortem mutilation of genitals, evisceration of the body, and the presence of vampirism (drinking of victim's blood) and/or anthropophagy (cannibalism) (Geberth, 1996; Ressler et al., 1988).

When the insertion of foreign objects is present at the crime scene, it is said to occur in conjunction with other forms of mutilation, and may represent a surrogate form of sexual intercourse (Ressler et al., 1988). Seminal fluid may also be present on or around the victim's body, suggesting that the offender masturbated after the victim's

death; similarly, the offender may urinate or defecate at the crime scene. In light of the aforementioned sexual difficulties and solo sex preferences cited by the 36 sexual murderers, it is argued that many resorted to compulsive masturbation after committing their homicides, despite the presence of the victim (Ressler et al., 1988).

Depersonalization of Victim:

Depersonalization, which may occur prior to or after death, is a functional form of mutilation, intended to obscure the identity of the victim. This includes mutilating or covering the victim's face or even turning the victim onto her stomach (Ressler et al., 1988). Holmes and Holmes (1996) explain that attacks on a victim's face transform the individual into a "nonperson," making it easier for the perpetrator to commit his crime. They follow that blindfolds may simply be used to prevent the victim from identifying the assailant, although they may also be employed to depersonalize and humiliate the victim. Because some killers may not be comfortable viewing their victim's face, using a blindfold, again, transforms them into a nonentity (Holmes & Holmes, 1996). The authors note that in cases involving oral sex, the presence of a blindfold on the victim suggests a stranger perpetrator, while the nonpresence of a blindfold coupled with facial injuries suggests an attacker known by the victim (Holmes & Holmes, 1996).

Torture of Victim:

Within the FBI sample, approximately 33% of 92 homicide cases involved torture (Ressler et al., 1988), described to be perimortem acts such as cutting, burning, or slicing the victim; pulling out hair; removing body parts, and biting (Ressler et al., 1985b). Torture is said to reinforce the sexual sadist's arousal during the attack (Ressler et al., 1985b), while it also serves as a means of distancing the killer from his victim (Holmes &

Holmes, 1996).

Presence of Overkill:

Overkill is defined as inflicting more injury than is necessary to kill the victim (Ressler et al., 1988, p. 55). It is also described to be a form of depersonalization. When overkill is present on the victim's face, this may suggest that the killer knew the victim, or that the victim may have resembled a despised person from the offender's past (Ressler et al., 1988, p. 131). Overkill may be measured by the number of so-called "secondary injuries" listed in an autopsy report, or those injuries present on the victim that are secondary to the primary, fatal injury. These secondary injuries might include stab wounds, cuts or slashes, beating wounds/contusions, and gunshot wounds, for instance (W. D. Lord, personal communication, June 22, 1998).

Murder Phases - Body Disposal:

The body disposal phase of a homicide addresses the offender's activities with the victim's corpse after the homicide; the location of the body in relation to the encounter and murder sites; and the means by which it is discarded, or lack thereof, known as the "body state" (Ressler et al., 1988). Holmes and Holmes (1996) note that sophisticated killers will be careful during this phase, where they may be especially vulnerable to apprehension. For some offenders, the body disposal process may significantly sexually stimulating, or reinforcing, as it may be incorporated into their sadistic fantasies (Ressler et al., 1985c, 1988). For instance, transporting the corpse in the car was highly reinforcing from one of the interviewed sexual murderers (Ressler et al., 1985c). Hence, the length of time spent to dispose of the victim's body may be revealing in this regard

(Ressler et al., 1988). Additionally, it is argued that the body disposal process may become incorporated into the offender's fantasies, resulting in an improvement of his dumping methods over time as they are "perfected" and rehearsed in his mind (Ressler et al., 1988).

Body State Variables:

The victim's body state encompasses the following factors: visibility or concealment, state of dress, and positioning. The perpetrator's interaction with the corpse, such as evidence of "remorse" (e.g., washing wounds or covering the victim), should also be examined (Ressler et al., 1988).

Visibility/Concealment of Body:

In the FBI's sample of 36 sexual murderers, 58% of the victims' bodies were concealed, while 42% were left exposed (Ressler et al., 1988). Although Ressler et al. (1988) explain that the corpse's visibility may simply be due to practical reasons (e.g., the offender flees the scene after the homicide), they state that a visible body may be reflective of an offender who wants to "make a statement" and have it discovered, while, conversely, a hidden body may suggest a perpetrator who wants to avoid detection or to maintain control of the victim, keeping the location of the corpse a secret (pp. 57, 59).

State of Dress:

In the FBI study, 47% of the victims (in a subsample of $n = 100$ cases) were found nude; 11% had buttocks exposed; 9% had breasts exposed; and 5% had genitals exposed. Further, 28% of the bodies were fully clothed upon discovery. In addition to suggesting a possible sexual motive to the killing, a nude body found without clothes nearby may signify an organized offender who is attempting to stymie the investigation by removing

incriminating evidence (i.e., blood-soaked clothing) and delaying identification of the victim (Ressler et al., 1988).

Positioning:

Ressler et al. (1988) explain that a body may be arranged in a certain manner for specific reasons, to include disguising the crime scene. This "staging" of the crime scene is indicative of an organized offender (Holmes & Holmes, 1996). The act of positioning the corpse may also be a salient component of the offender's sexually sadistic fantasy (Ressler et al., 1988). Moreover, a degrading posture could signify the "work" of not only a sexual sadist or a lust-seeking offender, but also that of a "mission-oriented" offender who, say, is "making a statement" about how much he despises prostitution (Holmes & De Burger, 1988; Holmes & Holmes, 1996). In the FBI study of 36 sexual murderers, 28% ($n = 30$ cases) of the bodies were positioned, while 17% ($n = 18$ cases) were unable to be classified (Ressler et al., 1988).

Final Body Location/Disposal Site:

The body disposal site itself has practical value, determining how quickly the corpse will be discovered (Ressler et al., 1988). For instance, the FBI researchers cite the cases of two murderers who offensively positioned a body in a well-travelled area to ensure discovery, while another offender, who dumped a weighted corpse into a river, did not (Ressler et al., 1988, p. 60). Moreover, if the disposal location is inconsistent with the victim's daily activities, interests, and occupation, for instance, this may signify that it has significance to the killer (Holmes & Holmes, 1996), possibly playing a role in his fantasies (Ressler et al., 1988). It is conceivable that those offenders who drive the body

a far distance from the crime scene to the disposal site find this prolonged contact with the body highly sexually arousing, or reinforcing, perhaps moreso than the act of murder itself (C. M. Nezu, personal communication, February 12, 1998).

If the disposal site is different from the victim abduction and murder sites, this signifies planning and a willingness to travel long distances - characteristics of an organized offender (Holmes & Holmes, 1996; Ressler et al., 1988). The final body location may further reveal behavior that is consistent with psychosis (e.g., the presence of overkill, evisceration of corpse, cannibalism, etc.) or it may be used by the killer to "express" feelings toward others (e.g., one FBI sample subject buried female victims' heads outside of his mother's window, for she had told him that the victims would never date him socially (Ressler et al., 1988, p. 61).

Geographic Profiling Variables:

Geographic profiling examines an offender's likely spatial behaviors "within the context of the locations of, and the spatial relationships between, the various crime sites" and is recommended as a supplement to psychological profiling (Rossmo, 1997, p. 161). The theory of geographic profiling, as described by Rossmo (1994, as cited in Geberth, 1996; Holmes & Holmes, 1996), posits that killers commit their crimes in so-called "psychological comfort zones," namely, in the areas of their residence, work, or shopping and entertainment (Rossmo, 1994, 1995, in press, as cited in Holmes & Holmes, 1996). The offender's "zone of behavioral activity," encompasses these activity areas, crime areas, and connecting roads (Rossmo, 1994, as cited in Geberth, 1996, p. 769; Rossmo, 1994, 1995, in press, as cited in Holmes & Holmes, 1996, p. 156). Hence, it is posited

that the killer selects victims, victimizes them, and disposes of their bodies in areas that he is familiar with (Rossmo, 1994, 1995, in press, as cited in Holmes & Holmes, 1996). For instance, notorious serial killer Ted Bundy disposed of his victims' bodies in the areas of Taylor Mountain and Lake Sammanish State Park in Washington State, which he frequented (Holmes & Holmes, 1996, p. 156).

Moreover, the offender's decision-making (e.g., hunting victims and disposing of bodies) is influenced by both physical (e.g., rivers, railroad beds, etc.) and psychological boundaries (e.g., discomfort of being in unfamiliar areas, such as neighborhoods with differing socioeconomic and racial makeup) (Holmes & Holmes, 1996; Rossmo, 1997). Holmes and Holmes (1996), describe these considerations in the hypothetical case of a killer who decides to stalk victims across a river. Not only must the waterway's physical presence be evaluated, but also the individual's psychological preparedness to hunt on the other side; the location of the nearest bridge; and any border, jurisdiction, and legal issues that may result from crossing (p. 151). Rossmo (1997) observes that a predatory prostitute killer might likely look in established prostitute stroll areas for his victims.

Using the geographic profiling model as applied to this prostitute homicide study, the following variables were examined: the offender's familiarization with the various crime scenes (i.e., encounter, murder, and disposal sites); the approximate distances between the residences of the victim and perpetrator from the body disposal site; the approximate distance between the perpetrator's residence to the initial encounter site; and the approximate distances between the initial encounter and body disposal sites (Cloud, 1996; Holmes & Holmes, 1996). The role of distance has been found to vary according to the victim-perpetrator relationship. In her study of child abduction and homicide,

Cloud (1996) found that parents and acquaintances who murdered children disposed of the bodies significantly less further away from the abduction site than did strangers.

Applying this finding, one might predict that an organized killer who selects, stalks, and murders prostitutes who are strangers would be likely to dispose of the body elsewhere. Conversely, the bodies of prostitutes who are murdered pursuant to an interpersonal dispute or to an argument with a regular customer might be left at the murder location, possibly due to the perpetrator confessing to the crime or fleeing the scene out of fear or surprise. Indeed, Holmes and Holmes (1996) suggest that variation among the victim encounter, murder, and body disposal sites signifies an organized typology; citing the work of Barret (1990), they follow that this offender will likely live a distance away from the contact site, given his willingness to travel.

Citing their examination of over 800 homicides, Holmes and Holmes (1996) posit that a serial offender likely commits his initial murder within a "comfort zone" near his home and/or workplace. They add that if successive victims are stalked and murdered further away, this reflects an increase in both comfort and self-confidence (p. 155). As such, one might expect larger geographic distances between the organized offender's residence and the victim encounter, murder, and body disposal sites as well as between the latter three locations, respectively.

Murder Phases - Postcrime Behavior:

After committing the act of murder and disposing of the victim's body, it is argued that the offender's most immediate postcrime behaviors will be directed toward self-preservation (i.e., avoiding detection by the police) (Ressler et al., 1988). However,

in its study of 36 sexual murderers, the FBI researchers documented a number of risky behaviors (e.g., interjecting themselves into the investigation and returning to the disposal site) undertaken by the perpetrators during this period, possibly due to a driving need to perpetuate their sexually violent fantasies, overriding their self-protection priorities (Ressler et al., 1988). All of these behaviors were included in the prostitute homicide study, since it was believed they could facilitate the perpetrator's apprehension. Further, these behaviors have also been found to distinguish between the aforementioned organized and disorganized offender typologies (Ressler et al., 1988).

Returning to the Crime Scene/Observing Body Discovery:

In the FBI study, 26% (31 of 118 homicides) of the offenders returned to the crime scene to reexperience their fantasy; 19% (22 of 118 homicides) returned to monitor police progress; 8% (9 of 118 homicides) to murder another victim; and 6% (7 of 118 homicides) to perform necrophilia (Ressler et al., 1988, pp. 62-63). The killer might also observe the body discovery, fostering his sexual arousal through this prolonged contact with the victim. This might occur by the killer telephoning or writing to the police; being in a crowd present at the body disposal site; or confessing and taking investigators to the victim (Ressler et al., 1988).

Keeping of Trophies and Souvenirs:

In 27% (32 of 118 homicides) of the homicides in the FBI study, the killer kept items of clothing, jewelry, underwear, and other items, such as the murder weapon (Ressler et al., 1988). These "souvenirs" are material reminders of the homicide (Holmes & Holmes, 1996; Ressler et al., 1988). Their importance to the offender - providing a tangible means, possibly fetish-driven, with which to perpetuate his fantasy and "relive"

the event - supersedes their obvious quality as incriminating evidence (Ressler et al., 1988). Moreover, it is suggested that the removal of these items from the crime scene depersonalizes the victim on a psychological level, while making identification difficult (Holmes & Holmes, 1996). "Trophies" are described to be items taken by an organized offender from the crime scene that signify his conquest and victory over the murdered victim (Holmes & Holmes, 1996; Ressler et al., 1988). These items are usually personal, such as body parts, and may be used by the offender for sexual arousal (Holmes & Holmes, 1996).

Participating in the Investigation/Following the News Media:

In 20% of 118 homicide cases attributable to the FBI's sexual murderer sample, the offender interjected himself into the police investigation, either directly or indirectly by following news accounts of the crime (Ressler et al., 1988). This implies that the offender is sensation-seeking, and these actions continue to reinforce his posthomicide euphoria (Ressler et al., 1988). Some offenders called and taunted police, while others left clues, suggesting an elevated degree of narcissism. In 46% of the cases (54 of 118 homicide cases), the offenders followed the media, saved news clippings, kept a diary or scrapbook, and/or sought out news reports of their crimes (Ressler et al., 1988). Items such as diaries and news clippings could be listed on a search warrant of a suspected offender's residence, and their discovery during execution would focus attention on the individual.

Use of Weapons:

Holmes and Holmes (1996) note that weapons, like torture, serve to distance the killer from his victim. Sexual murderers will usually kill using their hands (e.g., via

manual strangulation; ligatures, such as straps or panty hose; knives; hammers; and handguns), as this allows them to physically touch, terrorize, and degrade the victim (Holmes & Holmes, 1996). Interestingly, an FBI analysis of 64 homicides found that 56% (36 cases) involved firearms while 44% (28 cases) involved sharp or blunt objects. In those cases where the offender used a firearm, he was more likely than those who used a blunt or sharp instrument to have followed the media; to have maintained a diary; to have hinted or told someone about the crime; to have photographed his victims; and to have revisited the crime scene (Ressler et al., 1988, p. 65). Using a firearm as a personal weapon suggests a more sophisticated offender than one who uses a weapon of opportunity. This finding has been demonstrated in the literature, where psychopaths have been found to be more likely to use a firearm during a crime than nonpsychopaths (Hare & McPherson, 1984).

Organized and Disorganized Sexual Murderer Typologies:

As previously mentioned, the FBI researchers classified their 36 sexual murderer sample into two subgroups, representing 24 organized killers (with 97 victims) and 12 disorganized killers (with 21 victims), respectively (Ressler, Burgess, et al., 1986; Ressler et al., 1988). These two groups were compared across the aforementioned series of profile and crime scene variables, and the following distinctions were found. Briefly, the organized offenders were significantly more intelligent, skilled in their occupation, likely to plan the crime, to have a negative emotional state prior to committing the offense as well as a precipitating emotional stressor, to have a car in good condition, to follow their case in the news media, and to change jobs or leave town after the murder than were the

disorganized offenders (Ressler, Burgess, et al., 1986; Ressler et al., 1988).

These individuals were also more likely to have a high birth order; to have spotty work histories (i.e., changing jobs frequently and working for short periods of time); to be employed in skilled positions below their ability levels; to be socially adept, speaking to the victim and earning her confidence before attacking her; to exhibit a controlled mood during the crime; and to use alcohol before the homicide (Ressler, Burgess, et al., 1986; Ressler et al., 1988). The organized offender is also said to have an average demeanor and neat appearance (Ressler et al., 1988).

Conversely, disorganized offenders were significantly more likely to have a low birth order; to have sexual difficulties (e.g., poor sexual knowledge, sexual aversion, and sexual inhibition); to be scared or confused during the crime; to be acquainted or familiar with the victim; to live alone; and to live or work proximate to the murder site (Ressler, Burgess, et al., 1986; Ressler et al., 1988). Additionally, these individuals were found to have below average intelligence; to be socially inept; to be impulsive, acting out under stress; to have little or no precipitating emotional stressors; to rarely ingest disinhibiting substances prior to the crime; to have little interest in following crimes in the media; and to maintain the same lifestyle, without alteration, after committing a homicide (Ressler, Burgess, et al., 1986; Ressler et al., 1988). These persons may also have poor, inconsistent work histories and may be suffering from a psychotic disorder at the time of the homicide (Ressler et al., 1988). Because these offenders are less likely to use a vehicle in commission of the crime (Ressler, Burgess, et al., 1986), they have a more restricted area of operation, working on foot (Holmes & Holmes, 1996).

Numerous crime scene differences were also found by the FBI researchers. The

organized killers were significantly more likely to have restrained the victim, to have assaulted the victim sexually while alive, to control the victim using threats, fear, and manipulation, and to use a vehicle during the offense. The FBI's findings and interpretations also suggest that the organized perpetrator's planned offense may be rape and/or murder as part of a fantasy; that his victims are preselected strangers; that the crime scene evidences a sense of control and order prior, during, and after the homicide; that he exhibits sexually sadistic qualities during the crime (e.g., threatens victim with weapon, controls conversation, demanding certain victim reactions during the rape, uses restraints such as chains, ropes, tape, chemicals, blindfolds, etc., and tortures victim); that his behavior will escalate when the victim's behavior does not match his wishes; that his victim will be killed pursuant to a triggering event (e.g., victim resists, attempts to escape, etc.); that he will bring his own weapon to-and-from the crime scene, leaving little evidence; and that the victim's body will be removed from the murder site (Ressler, Burgess, et al., 1986; Ressler et al., 1988).

The disorganized murderers were significantly more likely to leave a weapon at the crime scene, to position the body, to conduct postmortem sexual acts on the corpse, to keep the body, to depersonalize the body, and to not use a vehicle during the crime (Ressler, Burgess, et al., 1986; Ressler et al., 1988). The FBI's research findings reveal that this offender solicits victims within his own geographic area who may be acquainted with him, although selection criteria (e.g., appearance of victim, profession, etc.) appear to be unimportant; in this regard, victims are killed quickly and may comprise those individuals who the offender first encounters. Hence, restraints are seldom used, and the offender interacts little with the victim. The attack itself is described to be a surprise or

“blitz,” encompassing a sudden interruption to the victim’s daily activities. It follows that the crime scene reflects a lack of planning, impulsivity, and chaos (Ressler, Burgess, et al., 1986; Ressler et al., 1988).

In particular, the victim’s body may evidence mutilation, overkill, and signs of postmortem sexual sadism and bizarre ritualistic behavior, such as ejaculating on the victim, urination, defecation, severe injuries to the victim’s sexual areas, and disembowelment. Frequently, the victim’s body is left, in place and in plain view, where encountered and killed, although the offender may reposition the body as part of a fantasy or even keep the corpse. Lastly, the disorganized offender leaves a plethora of physical evidence at the crime scene, such as fingerprints, footprints, and, as mentioned, the murder weapon (Ressler, Burgess, et al., 1986; Ressler et al., 1988).

Actuarial Prediction of Sexual Aggression Recidivism Literature:

Actuarial, or statistical, prediction of sexual as well as violent recidivism risk has been repeatedly demonstrated to be more accurate than clinical prediction (Hall, 1988, 1990; Harris, Rice, & Quinsey, 1993; Mossman, 1994; Rice & Harris, 1997). In this regard, clinical predictions have evidenced poor interrater reliability (Harris et al., 1993). In his review, Hall (1990) cites the following reasons for the superiority of actuarial prediction over clinical prediction. First, humans have cognitive limitations for processing information. Second, working with restricted populations, such as prostitute murderers, makes one vulnerable to illusory correlations, where face valid predictors are accepted even though disconfirming evidence exists. Third, actuarial prediction offers incremental validity over clinical predictions due to an ability to examine large amounts

of information as well as it being a more consistent technique. Actuarial instrument use is also reported to improve prediction ability; to standardize decision-making; to facilitate staff training; and to attenuate the problems inherent in clinical prediction (e.g., influence of low base rate behaviors, illusory correlations, and personal biases) (Loza & Dhaliwal, 1997).

Hall (1990) cites the importance of theory and parsimony in predictive models of behavior. He argues that theory helps identify germane variables, while parsimony makes it easier to implement the model, which may be complex. Although this study is exploratory in nature, seemingly relevant literatures have been consulted (here representing "theory") with relevant variables excerpted for analysis (here representing "parsimony"). Further, Hall (1990) writes that making idiopathic predictions of sexual aggression for any given case is time-consuming and nonproductive, as the number of possible explanations accounting for the person's behavior is infinite. This same argument would also apply to an individual examination of the single and serial prostitute murderers in this study.

Using these explanations as guiding principles, it follows that empirically-derived predictors of sexual aggression could facilitate the criminal profiling of prostitute murderers, since this phenomenon involves inherent sexual components, namely, the nature of the prostitute-perpetrator interaction as well as the subsequent homicide, which might be sexually motivated. Moreover, it is argued that having an empirically-generated set of perpetrator characteristics will result in more accurate and credible offender profiles, avoiding the pitfalls of subjective judgments, influenced by individual attitudes and experiences. However, at the same time, actuarial prediction should not be

exclusively relied-upon when examining low base rate behaviors, such as prostitute homicide (Hall, 1990). In this regard, prior law enforcement experience with this phenomenon is critical, and actuarial means may supplement the investigative predictions of behavior utilized by the FBI (Hall, 1990).

Actuarial prediction of sexual and violent recidivism involves the examination of both "static" and "dynamic" factors (Hanson & Bussiere, 1996, 1998; Proulx, Pellerin, Paradis, McKibben, Aubut, & Ouimet, 1997; Quinsey, Lalumiere, Rice, & Harris, 1995). Specifically, static factors do not change, cannot be altered by clinical treatment, and help determine an offender's overall level of risk. These might include past sexual offenses, the offender's age, etc. Conversely, dynamic factors are modifiable and have been associated with decreased risk for sexual recidivism. These might encompass offender attitudes, deviant sexual interest, and cognitive distortions (Hanson & Bussiere, 1996, 1998; Proulx et al., 1997; Quinsey, Lalumiere, et al., 1995). Dynamic factors are most helpful in the prediction of future recidivism, treatment target response, and treatment response (Hanson & Bussiere, 1996, 1998).

Variables have been identified through research with sex offender populations by measuring them on certain factors (e.g., sexual deviance using phallometry) and then comparing these results with later recidivism. Hence, salient variables have been identified that distinguish those offenders who recidivate sexually from those who do not (Hanson & Bussiere, 1996). Hall (1996) writes that the most dangerous sexual aggressors are those who victimize many people; who cause severe harm to their victims; and who have DSM IV (1994) personality disorders. As shall be discussed, having a psychopathic personality is also a salient risk factor in this regard (e.g., Quinsey, Rice, &

Harris, 1995; Rice & Harris, 1997).

It was believed that these identified predictors from the literature would be useful to investigators in examining the sexual homicide of prostitutes – especially serial sexual homicide, which, by nature, involves repetitive sexually aggressive and violent acts. As shall be illustrated, these principally static factors identified by researchers (e.g., Hanson & Bussiere, 1996, 1998) may be particularly useful to the FBI and other law enforcement agencies in that they may be easily identified through field and record investigation. As such, they warrant inclusion in this study. The following discussion will cite those variables from this literature believed to be of principal interest and practical use to law enforcement. As such, the reader is encouraged to refer to the original research findings for complete lists of predictors.

To begin, with regard to predicting sexual recidivism, rapists have been found significantly more likely to recidivate sexually, violently, and criminally (Hanson & Bussiere, 1996; Rice & Harris, 1997). Sex offenders with both adult and child victims have also been found to be most at risk for recidivating sexually and violently (Rice & Harris, 1997). In their meta-analysis of 61 sex offender studies, Hanson & Bussiere (1996, 1998) examined sexual, violent (included sexual aggression), and general criminal recidivism. The authors found the following factors to be predictive of future acts of sexual aggression: being a young offender, being single, total number of prior criminal offenses, having antisocial personality disorder and/or being psychopathic, number of prior admissions to corrections, history of prior sex offending, having stranger sex offense victims, committing a variety of sex crimes, deviant sexual interest (especially pedophilia), having male child sex offense victims, and having an early onset of sex

offending behavior.

Hanson and Bussiere (1996, 1998) found that predictors of violent recidivism in sex offenders were similar to those in a nonsex offender population. These included being a young, unmarried offender, having a history of juvenile delinquency, having a minority race, having a prior criminal history, especially for violent crimes, and having antisocial personality disorder and/or psychopathy. Interestingly, having a prior sex offense history was not found to predict nonsexual, violent recidivism. Further, the investigators found that the predictors for general criminal recidivism in sex offenders resembled those of a nonsex offender population, including being young and unmarried, having a minority race, the presence of juvenile delinquency, having antisocial personality disorder and/or being psychopathic, having a sex offending history, especially involving force against victims.

Overall, Hanson and Bussiere (1996, 1998) concluded that sexual recidivism was most strongly associated with sexual deviance. General criminal factors such as age, marital status, and offense history also predicted future sexual aggression. Additionally, nonsexual violent and general recidivism predictors in sex offenders resembled those general recidivism predictors of nonsex offenders (e.g., age, marital status, juvenile delinquency, antisocial personality disorder/psychopathy, etc.). Hanson and Bussiere's (1996, 1998) empirically-based findings are worthy for inclusion in the study as they would provide opportunities to assess for potential differences among the single and serial murderers with respect to their likelihood of recidivating sexually, violently, and/or criminally. Other researchers have demonstrated similar findings, while also revealing other predictors of potential interest to this study.

Briefly, in their sample of 178 rapists and child molesters, Quinsey, Rice, et al. (1995) found that deviant sexual interests as measured by phallometry, having a prior history of sexual offenses, having a prior criminal history, marital status, and psychopathy as measured by the Psychopathy Checklist-Revised (PCL-R; Hare, 1991c) were predictors of sexual and violent recidivism. Additionally, they determined that psychopathy uniquely predicted sexual and violent reoffending and that psychopathy and never being married were associated with higher degrees of recidivism over time. In a prior study where they validated a risk prediction instrument, the Violent Risk Appraisal Guide (VRAG; Harris et al., 1993), these authors found the following variables to be predictive of violent (including sexual) recidivism in a combined sample of 618 male forensic psychiatric inpatients and males referred for pretrial evaluation: level of injury in the index offense, having a property offense history, never being married, having an alcohol abuse history, PCL-R (Hare, 1991c) score, and having a personality disorder diagnosis.

In a later study, Rice and Harris (1997) cross-validated the VRAG (Harris et al., 1993) on a sample of 159 child molesters and rapists who were followed for approximately 10 years; their sexual and violent recidivism results were compared to a sample of 288 sex offenders (rapists, child molesters, and "mixed" offenders having both adult and child victims). The researchers found that the rapists recidivated sexually and violently more quickly than the child molesters. However, the mixed group failed the most quickly and to the greatest degree, making them the most dangerous groups of offenders. Rice and Harris (1997) also found that psychopaths with deviant sexual interests recidivated sexually and violently the most quickly and to the highest degree.

As applied to this study, knowing whether a potential suspect had a history of child and adult sex offenses and property crimes, problems with alcohol, deviant sexual interests, and a psychopathic personality could be useful to law enforcement in narrowing a potential suspect pool, warranting their measurement in the study.

In a sample of 342 male sex offenders evaluated at a state hospital, Hall (1988) found that past history of sex offending to be the most salient predictor of sexual recidivism against adults as well as nonsexual violence, and was also associated with nonsexual, nonviolent recidivism. Hall (1988) concluded that having a sex offense history against adults serves as a risk factor for sexual, nonsexual violent, and nonviolent criminal offenses. He follows that the latter two findings indicate that adult sex offending encompasses a "range of psychopathology," encompassing antisocial personality disorder and, one could argue, psychopathy (p. 775). Hall's (1988) findings that rapists, especially those with comorbid antisocial personality disorder, are at high risk for reoffending are consistent with those found by other researchers (Hanson & Bussiere, 1996; 1998, Quinsey, Rice, et al., 1995; Rice & Harris, 1997).

Several other predictors of sexual aggression have been identified through research with college students. Hall (1990), reviewing this literature and citing the findings of Malamuth (1986) and Lisak and Roth (1988), reports several other predictors of sexual aggression, including promiscuity (i.e., frequency of past sexual experiences), dominance as a motivation for sexual acts, disinhibition from alcohol, hostile or adversarial relationships with females, impulsivity, lack of respect for societal rules, and social skills deficits. Examining these interpersonal qualities (e.g., dominance and hostility toward women, having a lack of social skills, becoming disinhibited through

alcohol use) among the prostitute murderers would be useful in examining motive, solicitation approach (e.g., "smooth talking" or socially awkward), and possible homicide triggers (e.g., murders triggered due to arguments, exacerbated by alcohol).

With regard to promiscuity, the literature reveals that sexually aggressive males have more sexual partners than nonsex offenders and are less satisfied (Kanin, 1983, 1985 and Koss & Dinero, as cited in Hall, 1996). Hall (1996), citing the work of Buss and Schmitt (1993), describes promiscuity as an "opportunity" variable for sex offenders, granting them more "opportunities," through multiple sexual encounters, to find a vulnerable victim and to become aggressive. Interestingly, Malamuth et al. (1991, as cited in Hall, 1996), found that males who were both promiscuous and hostile toward females were sexually aggressive, while those who had a nonhostile attitude but were not promiscuous were nonsexually aggressive. In this study of prostitute homicide, promiscuity and comorbid aggression could be examined through prior sexual offenses, frequencies of perpetrator visits to vice areas, and acting-out behavior against prostitutes. Additionally, knowing whether or not single and serial prostitute murderers differ with respect to promiscuity, or being sexually compulsive, would be useful to investigators.

Homicide, Violence, and Comorbidity with Drug and Alcohol Use:

Alcohol is one of the most salient precipitators of homicidal interactions, while illicit drugs have also been implicated (Riedel, 2000). Both alcohol and other drugs pharmacologically facilitate the likelihood of aggression, notably violence resulting from a loss of impulse control (Bradford, Greenberg, and Montayne, 1992). Reviewing the literature, Bradford et al. (1992) reported that between 45% and 80% of homicides

involve offenders who have ingested alcohol, and that this drug has also been implicated in assaults, robberies involving physical harm, and domestic violence.

In a retrospective study of 85 forensic psychiatric inpatients, Hillbrand, Foster, and Hirt (1991) found that both chronic and acute alcohol abusers committed more serious violent crimes than nonabusers, although there were no differences in the frequencies of crimes committed between groups. These results were consistent with the findings of other studies, asserting that alcohol influences aggression and elevates the intensity of violence (Hillbrand et al., 1991). Collins and Schlenger (1988) interviewed 1,149 incarcerated felons and reviewed their files, determining that drinking at the time of their offense was significantly associated with violent offense incarceration. Additionally, these researchers found that the acute ingestion of alcohol was more associated with potentially violent behavior than chronic alcohol use (i.e., typified by an alcoholic) (Collins & Schlenger, 1988).

The literature on homicide and violence involving drug and alcohol use was examined in this study for several reasons. First, it was hoped that existing research might clarify the role of these drugs in facilitating violent acts, including homicide, pursuant to interpersonal disputes. As previously described, prostitutes and perpetrators have been found to be under the influence of drugs and/or alcohol at the time of their encounters (e.g., Thomas et al., 1990; Gossop et al., 1995) or have otherwise ingested these substances during their encounters (e.g., Koester & Schwartz, 1993; Ratner, 1993b), resulting in violence (e.g., Ratner, 1993a; Sterk & Elifson, 1990).

Moreover, prostitute homicides with nonsexual motivations (e.g., resulting from arguments), especially if both parties are acquainted, appear to resemble interpersonal

disputes. As such, it was believed that examining the involvement of drugs and alcohol in interpersonal violence and homicides might inform our understanding of this phenomenon. Lastly, knowing that someone who abuses drugs and/or alcohol may be likely to act out violently and impulsively with prostitutes and others (e.g., spouse, partner, etc.) would be useful for investigators when profiling and identifying suspects.

Research Limitations:

Reviewing the literature on the involvement of alcohol and drugs in homicide, Parker and Auerhahn (1999) remark that most studies of this subject involve a selection bias, namely, selected populations of homicide offenders and/or victims. They follow that this research limitation proscribes assessment of risk for homicide among the general population of persons who ingest alcohol and drugs. Other limitations include a lack of control groups, not focusing on the context of the homicide, and inadequate models characterizing the relationship between alcohol, drugs, and homicide (Parker & Auerhahn, 1999). In their review, Bradford et al. (1992) add that much of the evidence supporting alcohol involvement with violence is anecdotal; that studies are descriptive; that extraneous variables confound the relationship; and that definitions of what construes alcohol use vary across studies.

The relationship between drugs (other than alcohol) and homicide has not been fully investigated and is less defined than the related literature involving alcohol (Parker & Auerhahn, 1999; Riedel, 2000). Riedel (2000) observes that drug-homicide research involving prevalence rates and dosages of drugs does not account for the complex drug-homicide nexus, which also involves chronicity of abuse, genetics, the amount of drug ingested, as well as situational and cultural factors (p. 224). Other limitations of the

research include unreliable prevalence rates vis-à-vis illicit drug consumption and, like the alcohol literature, reliance upon descriptive studies (Parker & Auerhahn, 1999).

Theories of Alcohol- and Drug-Related Violence:

Two competing models of the alcohol-violence relationship have been posited: “selective disinhibition” and an “integrated construct of intoxication and aggression” (Parker & Rebhun, 1995 and Fagan, 1990, respectively, as cited in Parker & Auerhahn, 1999). Briefly, the selective disinhibition model proposes that alcohol selectively disinhibits violent behavior, contingent upon the situation, the players involved, their relationship, and the presence of observers (Parker & Auerhahn, 1999, p. 184). This model could be easily applied to prostitute-customer interactions involving alcohol ingestion, a subsequent argument, and a violent outcome. The theory further describes so-called “active” and “passive” constraint. The former literally describes proactive action and problem-solving by an intoxicated individual to prevent a violent action from occurring to solve a dispute. The latter concept involves the person’s rationality, or conscience, superceding their intoxication, and reminding them that violence would be an inappropriate solution to the dispute (Parker & Auerhahn, 1999, p. 185).

The intoxication-aggression model is a complex, integrated construct, proposing that intoxication affects cognitive functioning, and that the degree of incapacitation is contingent upon the substance used, social and cultural factors, human expectancies about the effects of intoxication, personality traits, the setting, and the nature of the interpersonal interaction (Parker & Auerhahn, 1999, p. 187). This model has been criticized for its complexity, need for refinement prior to empirical testing, and problems associating aggression, as opposed to homicide, as an outcome variable (Parker &

Auerhahn, 1999).

With regard to the relationship between drugs and violence, Goldstein's (1985) tripartite model, as cited in Parker and Auerhahn's (1999) review of the literature, is of particular interest. Specifically, the theory posits that "psychopharmacological violence" stems from the effects of ingested substances by the victim and/or perpetrator; that "economic-compulsive violence" centers around addiction and dependent persons' attempts to obtain drugs; and that "systemic violence" erupts from the drug distribution subculture (p. 178). As previously discussed, both psychopharmacological violence and economic-compulsive violence have been documented in the prostitution literature with respect to crack cocaine side effects and concomitant prostitute risk behaviors undertaken to obtain more of the drug (e.g., Ratner, 1993a).

Relevant Research:

The selective disinhibition model of alcohol-related violence has been tested empirically. In their review, Parker and Auerhahn (1999) cite a study by Parker (1995), who found that alcohol consumption predicted "family intimate" (i.e., spouse or partner) and "primary nonintimate" (i.e., friends, neighbors, and acquaintances) homicides (p. 186) in an apparent sample of archival data. The authors follow that alcohol seemingly erodes the prohibition against violence in close, interpersonal relationships (p. 186). Research has also been conducted on Goldstein's (1985) tripartite model, as described in Parker and Auerhahn (1999). Interestingly, in one analysis of 414 homicide cases from New York City, Goldstein (1989, as cited in Parker & Auerhahn, 1999) found that homicides involving intimates (i.e., spouse or partner) as well as strangers were less likely to have drug involvement; however, the majority of drug-related murders involved

acquaintances.

In another study, Spunt, Brownstein, Goldstein, Fendrich, and Liberty (1995) interviewed 268 incarcerated homicide offenders in New York. They reported that 61% of the sample regularly used 1 drug, that 53% drank alcohol, 33% smoked marijuana, and 22% used cocaine on the day of the homicide; and that 32% were drunk at the time of the homicide. Overall, 45% of the respondents were intoxicated or high on other drugs at the time of their homicides. These findings seem to support Goldstein's (1985) psychopharmacological violence theory described above (Parker & Auerhahn, 1999).

Lindqvist (1991) sampled 52 alcohol abusers and 19 drug abusers (totaling 68 men and 3 women) in Sweden who had committed homicides of male and female victims, reporting that 50% of the sample had criminal records for violent offenses. Most of the alcohol abusers also had arrests for alcohol-related offenses. Almost 58% of the sample had personality disorder diagnoses. In 48 of the 52 alcohol-related homicides, the victims – most who were acquaintances or former partners of the perpetrator - were also ingesting alcohol. Further, 44 of 71 victims in the study were alcohol abusers. Lindqvist (1991) found that 44 homicides were precipitated by an argument, with 9 involving disputes among intimates. Of the 52 alcohol-abusing murderers, 20 were provoked by their victims at the time of the homicide through verbal threats, gestures, and/or physical attacks. Notwithstanding the need to be sensitive to cultural differences, including alcohol and drug abuse patterns, the author's findings do reinforce the apparent role of arguments among acquaintances or intimates, the ingestion of alcohol, possibly mutually, and perpetrator escalation pursuant to provocation in these homicides. Also interesting was the prevalence of personality disorders among the largely male homicide offender

sample. In this study, it would be valuable to assess for perpetrator-victim arguments, mutual alcohol ingestion, and escalation occurring within their sexual encounters.

Yarvis (1990, 1994, 1995) published a series of studies that reveal interesting patterns of substance abuse and psychopathology among various homicide offender groups. However, the studies are limited in that the author selected and personally evaluated the offenders in the various samples, while one study compared data from live offenders with archival statistical data (Yarvis, 1990). To begin, Yarvis (1990) personally assessed 100 murderers (88 males and 12 females), reporting that 35% had substance abuse disorders; 29% had psychoses; and 39% had a diagnosis of antisocial personality disorder. He found that, again, a small sample of rape murderers ($n = 10$) were more likely to have nonpsychotic DSM III Axis I disorders such as substance abuse and/or sexual sadism as well as Axis II personality disorders. Further, he reported that murderers with prior criminal histories were more likely to have substance abuse disorders than those without prior criminal histories. Homicide offenders who were knew their victims were less likely to have substance abuse disorders than killers of stranger victims, who, themselves, were more likely to have antisocial characteristics.

Cluster analyses revealed two groups of interest. The first group of offenders ($n = 21$) had a subset of 10 rape-murderers, 8 who victimized strangers. These offenders were principally diagnosed with substance abuse and antisocial personality disorders, and comprised the most behaviorally pathological and antisocial group (Yarvis, 1990). A second cluster grouped 22 individuals who killed acquaintances. In this group, Axis I psychotic and depressive disorders were predominant as well as substance abuse disorders. Further, this group also evidenced Axis II pathology, namely, borderline and

antisocial personality disorders. Yarvis' (1990) findings, as applied to this study, suggest that prostitute murderers could likely have substance abuse disorders and antisocial personality characteristics, while a subset of offenders with sexually sadistic interests might victimize strangers.

Next, using the same sample of examined 88 male and 12 female homicide offenders referred for psychiatric evaluation, Yarvis (1994) found that 58% of the subjects were abusing substances and 48% were abusing alcohol at the time of their crimes. He found that murderers ingested alcohol and other drugs 2 to 5 times more excessively than the general population. Further, he reported that homicide offenders with prior criminal histories (violent or nonviolent) were significantly more likely to be substance abusers than those without prior histories. The author conducted a cluster analysis that revealed some interesting offender typologies.

One cluster, representing 20% of the subjects, involved psychotic offenders. A second cluster, involving murder motives such as revenge, money disputes, or intimate arguments, was comprised of offenders with Axis I neurotic disorders who were abusing substances or were intoxicated over 50% of the time. A third cluster was composed entirely of predatory, callous individuals with antisocial personality disorder (Yarvis, 1994). They killed as part of another crime, such as rape or armed robbery, to eliminate witnesses and to avoid apprehension. Yarvis (1994) stated that these individuals felt alienated and disenfranchised, blaming others for their problems. All of these offenders were abusing substances, with 78% intoxicated, at the time of committing their murders. Yarvis' (1994) second cluster appears to encompass pharmacologically-based violence (Goldstein, 1985, as cited in Parker & Auerhahn, 1999) and/or selective disinhibition

involving alcohol (Parker & Rebhun, as cited in Parker & Auerhahn, 1999). Individuals in the third cluster appear to psychopathic offenders who, like the FBI's organized offenders, were abusing alcohol at the time of the homicide (Ressler et al., 1986).

In another study, Yarvis (1995) examined DSM III Axis I and Axis II diagnoses in 78 men charged with homicide, 92 men charged with sexual assault (vaginal and/or anal), and 10 rape murderers. Substance abuse was the predominant disorder among the three offender groups. Among the 10 rape murderers, 9 met criteria for antisocial personality disorder, having a significantly higher prevalence of this disorder than the other two groups; 4 had substance abuse disorder; and 3 were sexual sadists. The rapists and rape-murderers had a significantly higher prevalence of Axis I disorders than the murderer group, which had significantly higher levels of psychotic disorders. The rapists were significantly less likely to have psychotic disorders. Interestingly, approximately 2/3 of the murderers exhibited Axis II personality disorders as compared with only approximately 1/2 of the rapists. Despite the small sample size, this study revealed that homicidal sex offenders – arguably, to also include some of the prostitute murderers in the current investigation – abused substances and also were diagnosed with antisocial personality disorder. These latter findings resemble those reported by Lindqvist (1991) and Yarvis (1994) above.

Williamson, Hare, and Wong (1987) further examined the association between personality characteristics and violence. Specifically, they examined the police reports of 55 incarcerated psychopaths and 46 nonpsychopaths, classified by scores on the Psychopathy Checklist (PCL; Hare, 1980). The authors found that the psychopaths were significantly more likely to commit serious violent assaults (e.g., attempted murder,

assaults involving bodily harm, wounding others) and property offenses than the nonpsychopaths. Additionally, the psychopaths were more likely to have material gain as a criminal motive; were more likely to have male and stranger victims; and had higher levels of alcohol involvement during their offenses than the comparison group (Williamson et al., 1987).

Conversely, the nonpsychopaths were significantly more likely to commit murder; to be acquainted with their victims; to have female victims; to be intoxicated during their offenses; and to be motivated by heightened emotional arousal (e.g., jealousy, rage, an argument) than the psychopaths (Williamson et al., 1987). Interestingly, no differences were found between the groups with respect to numbers of sexual assaults committed, having sexual motivations, using weapons, and overall alcohol use. The authors concluded that nonpsychopath murders occurred while the offender was aroused emotionally, and that psychopaths committed nonemotionally-based or callous acts of violence while drinking or with revenge or retribution as motives. Further, they posited that the tendencies of psychopaths to avoid intimate relationships accounted for the prevalence of stranger victims in the sample, while also making these individuals less likely to be involved in acts of domestic violence (Williamson et al., 1987).

These findings seem to imply that prostitute homicides involving acquaintance victims may involve a more emotion-based, or interpersonal, component (e.g., an argument erupting during a sexual encounter) while those involving stranger victims may be associated with a more psychopathic, cold-blooded killer with little emotional investment in the situation. More specifically, it is believed that single prostitute homicides may more likely involve arguments between victim and offender

acquaintances, while serial prostitute homicides may more likely involve stranger victims and more predatory and sexually-motivated offenders.

Alcohol has been frequently implicated in domestic violence incidents (Fagan, Barnett, & Patton, 1988). Indeed, Bourget and Labelle (1992) observe that most homicides result from a conflict between two acquainted parties in a relationship, with most murders taking place in the home. As previously mentioned, if case evidence suggested that a prostitute homicide offender struggled with alcohol abuse and acted-out violently when intoxicated, then investigators might look for suspects with alcohol-related, violent, and/or domestic criminal offenses.

Briefly, it is estimated that between 48% and 87% of male batterers were abusing alcohol at the time of the incident, with prevalences of comorbid alcohol and drug abuse ranging between 60% to 70% and 13% and 20%, respectively (Collins & Messerschmidt, 1993, as cited in Johnson & Belfer, 1995). The involvement of substances in domestic violence incidents has been repeatedly documented in the literature. Comparing a sample of 44 maritally violent males with three control groups of nonmaritally violent men, Fagan et al. (1988) found that 31% of the maritally violent men reported that drinking frequently accompanied domestic abuse. Further, the maritally violent group reported higher levels of alcohol consumption across social situations and higher levels of drinking by female partners than the other groups (Fagan et al., 1988). Because they found that alcohol ingestion also occurred pursuant to domestic incidents, the authors concluded that the drug facilitated these violent interactions, but no causal relationship could be inferred from the data (Fagan et al., 1988). One might surmise that during sexual encounters involving mutual alcohol ingestion, the likelihood for violence

increases.

Telch and Lindquist (1984) compared groups of violent ($n = 19$ couples), nonviolent/ distressed ($n = 7$ couples), and nonviolent/nontherapy ($n = 24$ couples) couples who completed a variety of measures. The violent couples evidenced the following: significantly more alcohol problems, more stereotyped sex role attitudes and traditional marriage views, more passive-aggressive behaviors, low self-esteem, and poor communication. Within the violent group, violent incidents occurred when one partner did not meet the needs and wants of the other (Telch & Lindquist, 1984). This latter finding could be applied to the prostitute-perpetrator negotiation, where the prostitute may refuse the perpetrator's demands for additional sexual services, resulting in violence (Koester & Schwartz, 1993; Ouellet et al., 1993; Ratner, 1993b).

Saunders (1992) administered measures to 182 males being assessed for domestic battering and found that over 60% of the respondents had at least one violent incident outside their marriage. Cluster analyses revealed two interesting subtypes. One cluster was comprised of males with rigid sex role attitudes who were the most severely violent individuals and who were most likely to be generally violent outside of the home, having high numbers of arrests for violent offenses and drunk driving. These men also used alcohol the most frequently and committed acts of violence during its ingestion. A second cluster was comprised of verbally abusive men who were emotionally volatile (e.g., angry, jealous, depressed, and suicidal), were unhappy with their intimate relationships, and had rigid sex role attitudes. As previously explained, the prostitution literature has documented extreme sex role stereotyping during sex-for-crack exchanges, involving the degradation of female prostitutes (e.g., Fullilove et al., 1992; Ratner,

1993b). Saunders' (1992) findings also suggest that prostitute customers who have histories of violent offenses and alcohol abuse may be particularly dangerous, especially if ingesting alcohol at the time of the interaction.

Roberts (1987) analyzed the characteristics of 234 male batterers retrospectively from legal records. He found that over 47% of the sample were unemployed; that 60% were under the influence of alcohol at the time of the offense according to their female victims; that over 70% were under the influence of alcohol and/or drugs at the time of the offense; and that 1/3 of the men were drug users. Moreover, 60% of those batterers with a criminal history ($n = 143$) had prior felony (e.g., violent and property crimes) or misdemeanor offenses (e.g., drug possession, public intoxication, and disorderly conduct). Although only 14% of this subsample had major felonies (e.g., rape, assault, attempted murder), they were responsible for committing all 53 felonies documented in the study (Roberts, 1987). These retrospective findings reinforce what has been discussed previously (e.g., Saunders, 1992; Yarvis, 1990, 1994, 1995) about the comorbidity of substance use and violent crimes among some male criminals.

In a study involving 128 male batterers ($n = 86$ who were court-involved and $n = 42$ who were not court-involved), Barrera, Palmer, Brown, and Kalaher (1994) found that the court-involved males were significantly more likely to report having alcohol involved in their last assault. These men also had significantly less education, full-time employment, lower income, and social supports than the non-court-involved men. Although these findings must be interpreted cautiously due to their being based on self-reports, they do suggest that socioeconomic factors may also be associated with alcohol use and violent behavior. As mentioned above, Saunders (1992) cited the prevalence of

unemployment in his sample of abusive husbands. Similarly, Goldstein and Rosenbaum (1985) found that a small sample of male batterers ($n = 20$) had significantly lower incomes than comparison groups of happily married and martially discordant/nonviolent males. As applied to prostitute homicide offenders, these findings suggest that factors such as unemployment and low socioeconomic status should also be considered in relation to drug and alcohol use and violent behavior.

Research Question:

“Through an examination of closed homicide cases involving single and multiple female prostitute victims, do differences exist among the following variables: victim and perpetrator characteristics, victim and perpetrator risk factors, crime scene data, and victim-perpetrator interactions?” Understanding such differences may provide important distinguishing characteristics to assist in single and serial homicide victim classification while suggesting unique psychological profiles and victim preferences of the murderers.

Study Aims:

Because prostitute homicide has not been examined in the literature, it is difficult, if not impossible, to formulate and test hypotheses scientifically. Rather, this exploratory study will be a hypothesis-generating endeavor – a first step toward conceptualizing this particular homicide phenomenon. As previously described, clinical and investigative variables of interest have been extracted from the various examined literatures and supplemented with germane anecdotal information from the NCAVC. This project will

look for initial trends in the data derived from these scholarly and investigative resources.

Specifically, it is hoped that the study will demonstrate the following:

1). There will be bivariate differences in the relationships between conceptually-based blocks of variables - derived from the Prostitute Homicide Questionnaire's (PHQ; Dudek & Nezu, 2000) Victim and Perpetrator Characteristics, Situational-Interactional Factors, Crime Scene Variables, and Body Disposal Forms - and the single and serial prostitute homicide victim groups.

a). "Victim Characteristics Form" Blocks may suggest victimology differences among the single and serial prostitute homicide victims in the areas of demographics, work-related factors, risk-taking behaviors, and lifestyle variables.

These may include the following:

i). Drug-addicted prostitutes will comprise the majority of all prostitute homicide victims due to their increased vulnerability and risk-taking behaviors.

ii). Single prostitute homicide victims may more likely be inner-city, African-American females addicted to crack cocaine as a drug of choice, consistent with reported trends (e.g., Ratner, 1993a). It is believed that these women will engage in concomitant risk-taking behaviors (e.g., working while intoxicated, engaging in sex-for-drug exchanges with customers, or dealing drugs) that make them highly vulnerable victims.

iii). Serial prostitute homicide victims may more likely be Caucasian females (Carter et al., 1988) who appear to be traditional, economically-motivated street prostitutes working in established vice areas.

b). "Perpetrator Characteristics Form" Blocks may suggest the following distinctions:

- i). Single homicide perpetrators may more likely be from the drug subculture (i.e., drug addict, drug dealer, have history of drug abuse) and/or be closely associated or intimately involved with the victim (i.e., a spouse, a pimp, a fellow drug user, a significant other) (Bourgois & Dunlap, 1993; Faugier & Sargeant, 1997; Silbert & Pines, 1982). As such, single homicides may more likely evidence nonsexual motives.
- ii). It is anticipated that serial murderers of prostitutes will likely have higher levels of psychopathy as measured by the Psychopathy Check List-Revised (PCL-R; Hare, 1991c) (Geberth & Turco, 1997; Quinsey, Rice, et al., 1995; Rice & Harris, 1997) as well as higher frequencies of sexual and nonsexual offenses (e.g., Hanson & Bussiere, 1998; Hare & McPherson, 1984; Quinsey et al., 1995; Rice & Harris, 1997). Based on existing evidence (e.g., Ressler et al., 1988), it is believed that serial murderers of prostitutes will more frequently demonstrate sexual motivations than single murderers of prostitutes.
- iii). The literature suggests that serial killers will likely be strangers who plan their crimes, who select their prostitute victims carefully (e.g., Ressler et al., 1988), and who have or obtain the victim's trust (e.g., are regular customers or who are able to pass customer screenings) (e.g., Williamson et al., 1987).

c). "Situational-Interactional Factors Form" Blocks may suggest the following

differences:

- i). Single homicides will likely have links to drug use by the prostitute victim and/or customer (Johnson & Belfer, 1995; Ratner, 1993a). It is believed that these women will be killed for reasons ultimately attributable to the support of their drug addiction, including side effects, vulnerability while intoxicated, and related risk behaviors (e.g. engaging in a sex-for-drug exchange that “goes bad”; “holding out” on a pimp; or being involved with the drug trade). Additionally, single homicides with nonsexual motives will likely stem from arguments (Lindqvist, 1991; Ratner, 1993a) or crimes of passion (e.g., a lover’s quarrel or domestic violence) (Bourget & Labelle, 1992).
 - ii). Serial murderers will exhibit more indicators of sexual sadism and deviant sexual fantasies (Geberth & Turco, 1997; MacCulloch et al., 1983; Ressler et al., 1988) than single prostitute killers.
- d). “Crime Scene Variables Form” and “Body Disposal Form” Blocks may evidence the following:
- i). Single homicide crime scenes may appear more disorganized than those of the serial homicide victims (e.g., may look unplanned and spontaneous, with the victim’s body left in place; may contain incriminating evidence, such as the weapon or clothing (Ressler et al., 1988); and may possibly exhibit overkill due to crack-cocaine induced psychosis (Geberth, 1996) or the murderer’s familiarity with the victim).
 - ii). Conversely, the serial homicide crime scenes may more likely appear

organized, or more frequently exhibit planning, than the single homicide crime scenes (e.g., the bodies of serial victims may more likely be moved from the murder site to a distant disposal site by the offender who also removes incriminating evidence from the crime scene, such as the murder weapon and clothing (Ressler et al., 1988)).

- 2). Those variables found to discriminate between the single and serial prostitute homicide victim groups may be incorporated into multivariate models to predict victim group membership.
- 3). Taken collectively, the bivariate and multivariate findings may be incorporated to suggest empirically-derived psychological profiles and victim preferences of the single and serial murderers, respectively.

Design:

This study was retrospective in nature, involving an examination of closed investigative case files, containing single and multiple female prostitute homicide victims as well as identified male perpetrators. More specifically, in this between-subjects design, the single and serial prostitute homicide victim categories comprised two, selected intact groups (Kazdin, 1992), representing the dependent variables. To better elucidate those victim, perpetrator, and crime scene characteristics that might be unique to serial prostitute homicide victims, the single prostitute homicide victims served as a comparison group, matched in the areas of victim and perpetrator gender, fatal outcome, and occupation, while also believed to share representative demographic variables (e.g., race, age) and risk factors (e.g., place of occupation, type of services offered, access to

illicit drugs, vulnerability to attack by multiple male offenders) with this principal group of interest (Kazdin, 1992).

The scope of the study was restricted to females because this gender is predominantly involved in prostitution (Sagarin & Jolly, 1997) and, hence, comprises the majority of victims. Moreover, although a subject worthy of future study, the phenomenon of male prostitution and related homicide clearly involves the identification of unique factors that go beyond the scope of this research. For instance, although anal sex may occur within male-male prostitution encounters (e.g., Davies & Feldman, 1997; de Graaf, Vanwesenbeeck, van Zessen, Straver, & Visser, 1994), female prostitutes have cited this as an uncommon, taboo sexual practice with male customers (McKeganey & Bernard, 1992). Additionally, the presence of overkill has been associated with homosexual homicide incidents (Bell & Vila, 1996; Geberth, 1996), although this proposition has been questioned (Taff & Boglioli, 1996).

Because recently reported homicide data in the United States indicate that 90% of all homicide offenders in 1999 (with gender reported) were males, who were also responsible for killing 89% of females during "single victim/single offender" interactions (FBI, 2000a, pp. 14, 17), the study was restricted to male perpetrators who, legally and/or investigatively, were determined to be responsible for the single or multiple murders in question. Moreover, since the study assessed for the detrimental effects of certain illicit drugs, namely crack cocaine, representative cases for each group were selected with dates of death occurring from 1985 - representing crack's initial appearance date in New York City (Fagan, 1994) - to the present, as it remains a drug of choice.

MATERIALS AND METHODS

Subjects/Dependent Variables:

Operational Definitions:

In this study all subjects were the deceased female victims of either identified single or serial homicide offenders whose occupation at the time of death was prostitution. Immediately, the question, "How does one ascertain whether a single homicide is truly a sole event and not actually one of a series of homicides?" comes to mind.

Indeed, the FBI admits that the Uniform Crime Reporting System does not distinguish between single and serial homicide submissions, and that some offenders intentionally commit murders and dispose of bodies in various jurisdictions to hamper law enforcement efforts (FBI, n.d.). In this regard, serial homicides might be erroneously misclassified as single homicides due to a lack of communication between police agencies, proscribing links between cases (FBI, n.d.; Holmes & Holmes, 1996); animosity or "turf" issues between these agencies; the refusal of investigators to identify or accept serial homicide cases; an infrequent pattern of killing by a serial offender; or other such hiatuses attributable to incarceration or illness (Holmes & Holmes, 1996). To reduce the likelihood of this confound, the dependent variables served as classification variables (Keppel, 1991), comprising two operationally defined groups of homicide victims: serial and single, respectively.

Multiple Homicide Prostitute Victim (MHPV): A MHPV was defined to be one of the two or more victims of a documented serial killer in closed investigative case files

whose occupation at the time of death was prostitution. As previously explained, the NCAVC definition of serial murder encompasses “two or more killings committed as separate events, usually, but not always, by one offender acting alone” (FBI, n.d., p. 3). A previous, more conservative FBI definition mandated three or more events for classification and cited an “emotional cooling-off period” by the offender between killings (Ressler et al., 1988, p. 139). The period of time between these crimes, which are believed to have psychological motivations, may range from hours to years. The serial offender stalks his victims in a predatory fashion, and his “behavior and physical evidence observed at the crime scenes will reflect sadistic, sexual overtones” (FBI, n.d., p. 3).

Single Homicide Prostitute Victim (SHPV): In light of the above arguments, defining a SHPV operationally was challenging, since it was likely that some single homicides may actually have been part of a series of linked killings, say by an offender who intentionally targeted victims in different geographic areas. As such, for the purposes of this study, the definition of a SHPV - the sole victim of a homicide offender as reflected in closed investigative case files whose occupation at the time of death was prostitution - was largely exclusionary in nature. In particular, a single homicide victim was so defined if the circumstances of the crime did not lead criminal investigators to believe that it was linked to others (e.g., a prostitute killed randomly during a drive-by shooting); if the homicide was a resolved situation (e.g., the murder of one spouse by another); and if the criminal investigation led investigators to believe that the offender was not linked to other homicides (e.g., an offender’s confession and/or interrogation, witness interviews, computer queries, and liaison with other law enforcement agencies

effectively ruled out the perpetrator's involvement in other homicides) (M. A. Hilts, personal communication, August 3, 1998).

Specifically, a SHPV was defined to be a single victim killed at a single point in time during a single event, unlike a MHPV, who comprised one of a series of victims, as described above. It follows that a SHPV was not part of a double or triple homicide, involving two and three victims, respectively, killed at a single point in time during a single event (Ressler et al., 1988, p. 138). Further, a SHPV was not the victim of a mass murderer: a single individual, described to be mentally unstable, who, out of anger, killed either three random victims (or family members) plus himself or four or more random victims (or family members) during a single event during at a single point in time (Ressler et al., 1988, pp. 138-139). Lastly, the SHPV definition excluded all victims of spree murders, involving the killing of two or more persons in two or more locations, resulting from a single event. There is no "emotional cooling-off period" in this case, and the victims are killed opportunistically as encountered by the offender (Ressler, 1988, pp. 138-139).

Description of Samples:

In total, there were 123 prostitute victim cases included in the study. Of these, 49 were single prostitute homicide cases attributable to 49 male perpetrators. The mean age of the victims was 28.33 years, with a range of 14 to 43 years. Based on 22 cases with data (44.9% of sample), the mean number of months involved in prostitution was 55.95 months, with a range of two to 176 months. Racially, there were 25 African-American/Black victims (51.0% of sample), 17 Caucasian victims (34.7% of sample),

five Hispanic victims (10.2% of sample), one "Native American/Alaskan Native" victim (2.0% of sample), and one "Other" victim (2.0% of sample). Of the 49 victims, 17 cases (34.7% of sample) were designated homeless, 30 cases (61.2% of sample) were not designated homeless, and 2 cases (4.1%) had missing data. In the total sample, 34 victims (69.4% of sample) were rated as having social supports in their lives, although this demographic was unable to be determined for the remaining 15 cases (30.6% of sample).

There were 74 serial prostitute homicide victims included in the study, attributable to 26 male offenders. Based upon 72 cases with reported age data, the victims had a mean age of 30.19 years with a range between 33 and 49 years. The mean number of months involved in prostitution for this group, based on 36 available cases (48.6% of sample), was 91.58 months, with a range of one to 307 months. Of the 74 victims, 44 were African-American/Black (59.5% of sample), 27 were Caucasian (36.5% of sample), and three were Hispanic (4.1% of sample). With regard to current homelessness, 29 of the serial victims (39.2% of sample) received this designation, and 35 of them (47.3% of sample) did not. Ten cases (13.5% of sample) were unable to be rated on the homelessness criterion. The serial victims, like the single victims, largely had existing social supports (53 of 74 cases, or 71.6% of sample). Only one victim (1.4% of sample) was rated as having no social supports, although 20 cases (27.0% of sample) had missing data.

Independent Variables:

Prostitute Homicide Questionnaire (PHQ; Dudek & Nezu, 2000):

Because there was no existing questionnaire or psychological measurement tool for examining the prostitute homicide phenomenon, the author, aided by his faculty advisor, created the Prostitute Homicide Questionnaire (PHQ; Dudek & Nezu, 2000). This exploratory data collection instrument consists of approximately 287 questions coded by a rater during an intensive review of the victim's case file (see Appendix A). Specifically, the measure requests the researcher to complete a variety of questions regarding those findings, or variables - identified from the aforementioned literatures on prostitution, serial murder, criminal profiling, sexual offending behavior, and homicide, violence, and comorbid drug and/or alcohol use - that are believed to be the most salient victim, perpetrator, and crime scene predictors of prostitute homicide.

In this regard, because prostitute homicide had not been empirically examined, many variables that appeared relevant conceptually (e.g., engaging in sex-for-drug exchanges, assessing for prior violent offenses as indicators of aggression against others) and that were practical investigatively (i.e., could be easily understood and measured by the FBI and other law enforcement agencies, such as assessing for acting-out behaviors committed by the perpetrator against other prostitutes) were included in the instrument. However, this author did attempt to include variables that had an empirical basis beyond being face valid. Variables found to be either prevalent or statistically significant in the FBI's serial murderer sample (e.g., using restraints, returning to the body disposal site, torturing the victim) were included (Ressler et al., 1986, 1988).

Additionally, variables found to be significant predictors of sexual and violent recidivism were extracted from the actuarial literature (e.g., having adult sex offenses, having both adult and child sex offense victims, having an alcohol abuse history) (Harris

et al., 1993; Rice & Harris, 1997) and directly included in the PHQ (Dudek & Nezu, 2000). Other identified predictors, such as the presence of psychopathy and antisocial personality disorder (e.g., Harris et al., 1993; Quinsey, Rice, et al., 1995; Rice & Harris, 1997), were assessed utilizing the Psychopathy Checklist-Revised (PCL-R; Hare, 1991c), to be described in the next section.

Some variables that significantly correlated with either future sexual, violent, or criminal recidivism were directly excerpted from Hanson and Bussiere's (1996, 1998) comprehensive meta-analysis (e.g., deviant sexual interest, $r = .32$ (with sexual redivism); prior sex offenses, $r = .19$ (with sexual redivism); having stranger sex offense victims, $r = .15$ (with sexual redivism); having a male child victim, $r = .11$ (with sexual redivism); committing diverse sex crimes, $r = .10$ (with sexual redivism); any prior nonsexual offenses, $r = .13$ (with sexual redivism); prior violent offenses, $r = .21$ (with violent recidivism); juvenile delinquency, $r = .25$ (with general recidivism)) (1998, pp. 352-355). Other significant predictors from the meta-analysis were included in the PHQ's (Dudek & Nezu, 2000) demographic questions (e.g., race, age, marital status), or, as mentioned above, were assessed utilizing the PCL-R (Hare, 1991c), which already encompassed them conceptually (e.g., presence of antisocial personality disorder/psychopathy, number of prior admissions to corrections).

A series of readily-codable variables, largely pertaining to crime scene characteristics, including perpetrator behavior (e.g., "Was the victim's body intentionally positioned postmortem?") and forensic pathology (e.g., "Was the victim sodomized with foreign objects in the mouth, anus, and/or vagina?"), were duplicated from the NCAVC's Violent Criminal Apprehension Program (VICAP) Crime Analysis Reports (FBI, 1991;

1998) at their recommendation (W. D. Lord, personal communication, June 22, 1998). This lengthy protocol, which is completed by submitting law enforcement agencies, collects data in support of case linkage and to facilitate investigations involving sexual and serial homicides, missing persons, unidentified bodies, and abductions (FBI, 1991; n.d.). Using these preexisting variables not only facilitated the coding process, but reduced the likelihood of experimenter error, as the criteria were checked and updated for accuracy by professional analytical staff before and after entry into the NCAVC's proprietary computer database.

Additionally, wherever possible, the variables (e.g., number of prior adult sexual offense convictions; the total number of stab wounds; and victim risk behaviors, such as servicing any customer), terminology subject to interpretation (e.g., sexually sadistic acts against prostitutes and others; actions reflecting the behavioral acting-out of fantasies; and the presence of poor victim health and hygiene), and situation-based determinations (e.g., "Was the homicide precipitated by circumstances resulting from the physiological side effects of drug (especially crack cocaine) and/or alcohol use, namely erectile dysfunction, the inability to ejaculate, and decreased sexual interest?") in the PHQ (Dudek & Nezu, 2000) were carefully operationally defined, with examples provided as appropriate, for standardization purposes. As shall be more thoroughly discussed in the next section, the aforementioned items were further refined pursuant to an initial pilot interrater reliability study, conducted during the measure's development phase, followed by a second interrater reliability study at the conclusion of development.

Each PHQ (Dudek & Nezu, 2000) question offers the rater suggested portions of the case file to review for the requested information (e.g., police and autopsy reports,

offender and witness statements, criminal history reports, crime scene photographs, psychological and psychiatric records, and VICAP Form (FBI, 1991; 1998) item numbers). A majority of the variables are dichotomous or categorical in nature, requiring "yes/no" responses or checklist completions, reflecting the presence or nonpresence of the respective criteria by the rater. Where possible, however, the measure contains metric variables in the form of frequency counts (e.g., the number of prior sexual offense convictions) and quantified toxicology data (i.e., blood levels of certain drugs). The PHQ also contains numerous "hidden" variables, consisting of additive summary scores of rater-coded variables to be calculated by the computer during the data analysis phase (e.g., the total number of paraphilic interests exhibited by the offender). For each item on the measure, the rater is provided with instructions for coding missing data or uncertainty.

In light of the excessive number of independent variables measured with the PHQ (Dudek & Nezu, 2000), they are not individually described here. Instead, the reader is encouraged to consult the aforementioned literature review as well as the instrument, included in Appendix A. These provide a basis for the variables within existing theory; a conceptual rationale for their inclusion; and their respective meanings. Briefly, the PHQ (Dudek & Nezu, 2000) is organized into six conceptual sections, or "forms." In the "Classification Form" the rater initially assigns the victim and perpetrator the same unique identification number, classifies the victim in either the "single" or "serial" victim independent variable category, and then codes the type of homicide by motive - either "sexual" or "nonsexual."

The rater next completes the main series of questions, which are grouped in the

following forms: 1). "Victim Characteristics Form" (includes questions on substance use and related toxicology data, demographics, prostitution lifestyle and risk behavior variables, social supports, and victimization); 2). "Perpetrator Characteristics Form" (includes questions examining the offender's criminal, violent, and sexual offense histories, paraphiliac interests, demographics, psychopathic traits, drug and alcohol use, prostitution-related interests and behaviors, and precrime action and planning variables); 3). "Situational/Interactional Factors Form" (includes questions pertaining to the offender's affect prior to and during the homicide, psychosocial stressors, the ingestion of substances during the encounter, the many potential precipitating factors to the homicide that might occur during the offender-victim interaction (e.g., behavioral and physiological effects of chronic drug use, victim resistance, and arguments over condom use); and a subsection of variables pertaining to the perpetrator's "Sadistic Fantasy Life" (includes questions examining the presence or nonpresence of sexually sadistic fantasies, the acting out of these fantasies, prior episodes of violence against prostitutes, and the offender's motivations regarding prostitute solicitation and victim selection); 4). "Crime Scene Variables Form" (includes questions regarding forensic pathology, such as the victim's injuries and cause of death; premortem and postmortem activities conducted by the offender on the victim; and the perpetrator's use of weapons); and 5). "Body Disposal Form" (includes items pertaining to the victim's last known location, encounter/abduction site, murder site, and body disposal site; perpetrator behavior at the disposal location and the disposition of the corpse; geographic profiling variables; and offender postcrime behaviors).

Psychopathy Check List-Revised (PCL-R; Hare, 1991c):

As described above, psychopathic behavior has been documented by the FBI as a characteristic of organized sexual murderers (e.g., Ressler et al., 1988), while also being a significant risk factor for sexual and violent recidivism (e.g., Hall, 1996; Harris et al., 1993; Rice & Harris, 1997), warranting its inclusion and measurement in the present study of prostitute homicide. The Hare Psychopathy Check List-Revised (PCL-R; Hare, 1991c) is a 20-item checklist, assessing for the presence of psychopathy in a male forensic populations. Psychopaths are characterized by unreliability, insincerity, egocentricity, compulsive lying, impulsivity and poor judgment in situations, lack of remorse, guilt, shame, concern for others, inability to show empathy, inability to have warm, emotional attachments with others, having an impersonal, nonintegrated sex life, and a lifestyle that is unstable, with few commitments, plans, and attachments (Hare & McPherson, 1984, p. 35). The PCL-R (Hare, 1991c) examines both tangible (e.g., criminal offenses) and intangible (e.g., lack of empathy or guilt) measurements of psychopathic behavior.

Specifically, the 20 items include the following: 1). glibness/superficial charm; 2). grandiose senses of self-worth; 3). need for stimulation/proneness to boredom; 4). pathological lying; 5). conning/manipulative; 6). lack of remorse or guilt; 7). shallow affect; 8). callous/lack of empathy; 9). parasitic lifestyle; 10). poor behavioral controls; 11). promiscuous sexual behavior; 12). early behavior problems; 13). lack of realistic, long-term goals; 14). impulsivity; 15). irresponsibility; 16). failure to accept responsibility for own actions; 17). many short-term marital relationships; 18). juvenile delinquency; 19). revocation of conditional release; and 20). criminal versatility (Hare,

1991b, p. 2). The PCL-R administration contains two portions - an in-depth interview with the subject and a comprehensive review of the subject's records. After completing both components, the rater completes the 20-item checklist, scoring each item on a three-point scale according to the subject's "lifetime functioning" in that area (Hare, 1991b, p. 6).

A score of "2" indicates that the item applies to the individual and is a "reasonably good match" (Hare, 1991b, p. 6). Next, a "1" signifies that the item applies to the individual, but with less certainty or doubts on the part of the assessor; it may also be coded if a discrepancy exists between the interview and file data for the criterion (p. 7). A "0" means that the item does not apply; that the individual does not exhibit the trait or behavior; or that he exhibits the opposite (p. 7). Three summary scores are obtained. Factor 1, ranging from 0 to 16, contains eight items and describes a set of psychopathic interpersonal and affective characteristics. Factor 2, ranging from 0 to 18, encompasses a psychopathic lifestyle (i.e., unstable, parasitic in nature, antisocial, etc.). The subject's Total Score ranges from 0 to 40, with a score of 30 or greater posited to classify an individual as a psychopath (Hare, 1985a, as cited in Hare, 1991b). However, recent research has utilized 25 as a cutoff score (e.g., Harris, Rice, & Cormier, 1991; Rice & Harris, 1997; Rice, Harris, & Cormier, 1992), as proposed by Wong (1984, as cited in Rice et al., 1992).

The PCL-R (Hare, 1991c) has been widely administered, and its reliability and validity properties have been well-demonstrated (e.g., Schroeder, Schroeder, & Hare, 1983). For instance, Hare (1991b) lists PCL-R intraclass reliability coefficients of .91 and .91 and Cronbach alpha internal consistency reliability coefficients of .87 and .85 for

pooled samples of male prison inmates and forensic psychiatric patients, respectively ($N = 1,632$). Further, Schroeder et al. (1983) report test-retest reliability coefficient alphas for the Psychopathy Check List (PCL; Hare, 1980, as cited in Schroeder et al., 1983), the 22-item predecessor of the PCL-R, ranging from .88 to .93 over a series of studies.

There exists extensive reporting on PCL-R validity studies (see Hare, 1991b). For instance, in their psychometric evaluation of the PCL (Hare, 1980, as cited in Schroeder et al., 1983), Schroeder et al. (1983) report that the measure distinguished between high, medium, and low psychopathy groups; correlated .83 with the mean score of two raters on a 7-point psychopathy scale; correctly classified approximately 96% of 207 inmates with low and high psychopathy ratings and 75% of 301 inmates with high, medium, and low psychopathy ratings; and significantly distinguished between Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III), 1980, as cited in Schroeder et al., 1983) diagnoses of antisocial personality disorder, conduct disorder, and adult antisocial behavior.

Because the current study will entail the analysis of closed investigative case files only, this restriction mandates that the measure of the psychopathy variable, the PCL-R (Hare, 1991c), be robust enough to be coded retrospectively, without the subject interview component. Fortunately, the use of PCL-R scores based upon file reviews has been investigated both psychometrically (Serin, 1993; Wong, 1988) and clinically (Harris et al., 1991; Harris et al., 1993; Rice & Harris, 1997; Rice et al., 1992).

In a study by Wong (1988), 56 forensic psychiatric inmates were rated independently on the PCL (Hare, 1980, as cited in Wong, 1988) pursuant to file reviews. The subjects were then interviewed individually by each rater, who then completed the

PCL, based upon the interview contents and prior file review data. The interrater reliability coefficients calculated for the file reviews alone ($r = .74$) and for the file reviews plus interviews ($r = .81$) were not significantly different (Wong, 1988). In another study (Wong, 1984, as cited in Wong, 1988) involving 315 forensic psychiatric inmates, PCL scores based upon file reviews only yielded a reliability coefficient of .85.

Using PCL cutoff scores from this prior study, Wong (1988) classified subjects according to high (≥ 30), medium (21-29) and low (≤ 20) levels of psychopathy, determining that the file-only-based PCL scores tended to underestimate the number of subjects who were later assigned to the high psychopathy group by the file and interview-based scores. A kappa coefficient for the two scoring procedures, representing the degree of agreement beyond what is expected by chance, was calculated to be .63, indicating moderate agreement (Wong, 1988). Although the PCL scores based on file reviews were reliable, Wong (1988) recommends that this method should be utilized only when the available records are comprehensive.

Serin (1993) examined the reliability of the PCL-R (Hare, 1991c) on a sample of 260 Canadian male offenders. Each was interviewed and then had his federal parole files reviewed. From this group, two subsets of 120 and 35 subjects, respectively, were extracted and scored on the PCL-R after the rater analyzed their files only. For the latter subset, the interrater reliability coefficient was $r = .85$, a significant finding. However, due to incomplete files (i.e., less than 8% of the files permitted complete scoring), up to six items on the PCL-R were omitted, requiring that their scores be prorated, raising validity questions (Serin, 1993). A comparison of the file-only and file plus interview PCL-R scores for the 120 cases revealed a significant decrease in reliability, from $r = .85$

to $r = .63$, attesting to the importance of the interview (Serin, 1993). Additionally, the file-only PCL-R total scores were significantly greater than the file plus interview total scores, representing an overestimate (Serin, 1993).

Next, when the subjects were assigned, by PCL-R score, to psychopath (one standard deviation above mean), nonpsychopath (one standard deviation below mean) and mixed (remaining subjects) categories, there was considerable variability in group membership, depending upon the procedure used. For instance, in comparison to the file-only PCL-R scores, 23.3% of the subjects were rated higher, and 19.2% were rated lower using both the file and interview information, although 57.5% of the subjects had unchanged group assignments (Serin, 1993). In light of the aforementioned need to prorate scores as well as the discrepancies between the average total scores, reliability coefficients, and group assignments by cutoff score, Serin (1993) concludes that scoring the PCL-R by file review only raises serious validity questions. He discourages this practice, especially for clinical purposes, citing the tendency of file-based scores to exaggerate overall psychopathy in an individual. However, Serin (1993) notes that the parole files examined in his study were inferior in comprehensiveness to those inspected by Wong (1988), apparently "leaving the door open" to future research in this area.

Despite these mixed conclusions, numerous clinical studies have utilized file-based PCL-R (Hare, 1991c) scores. Recently, Firestone, Bradford, Greenberg, and Larose (1998) utilized file-based PCL-R scores on a sample of 48 homicidal sex offenders and a comparison group of 50 incest offenders. They reported very good interrater reliability ($r = .88$), and found that their retrospective codings successfully discriminated between the sex offender groups, with the homicidal sex offenders having

significantly higher psychopathy levels on all scores than the incest offenders. Harris et al. (1993) studied violent recidivism in 618 forensic psychiatric inmates, reporting that less than five percent of their PCL-R scores, based upon record reviews, were prorated. They found that the PCL-R scores were the most highly correlated predictor variable with violent recidivism ($r = .34$); discriminated significantly between recidivists and nonrecidivists; and, along with 11 other predictor variables, classified violent recidivists at a rate of approximately 75% (Harris et al., 1993).

Rice et al. (1992) utilized file-based PCL-R (Hare, 1991c) scores with 176 forensic psychiatric inmates to examine the interactions between treatment, psychopathy, and criminal and violent recidivism. They report an interrater reliability coefficient of .96 for the PCL-R scores. Among their findings, PCL-R scores were significantly related to both violent recidivism and treatment failure/resistance, where psychopaths who received treatment exhibited higher rates of recidivism (Rice et al., 1992). In an earlier study, Harris et al. (1991) studied violent recidivism on a sample of 169 male forensic psychiatric patients, determining that PCL-R scores obtained from file reviews significantly predicted violent offense recurrence at an accuracy rate of 78% while also significantly contributing unique variance to a regression equation composed of criminal history variables.

File-based PCL-R (Hare, 1991c) scores have also been utilized to validate actuarial risk prediction instruments, namely the Violent Risk Appraisal Guide (VRAG; Harris et al., 1993). For instance, Rice and Harris (1997) found that psychopathy, as measured by PCL-R record-based scores, significantly contributed to both violent and sexual recidivism.

Despite the cautions of utilizing file-based PCL-R scores (e.g., Serin, 1993; Wong, 1988), it is apparent that many researchers (e.g., Harris et al., 1991; Harris et al., 1993; Rice & Harris, 1997; Rice et al., 1992) have employed this process successfully while also maintaining the integrity of the instrument vis-à-vis its reliability and validity properties. These findings, as well as the exploratory, nonclinical nature of this research project, support the use of the PCL-R (Hare, 1991c) as a measure of psychopathy for single and serial murderers of prostitutes.

Procedure:

Generation and Selection of Included Cases:

The data for the study were collected at the NCAVC's highly secure setting, located near the FBI Academy in Quantico, VA, between July, 2000 and February, 2001. The author lived in residence at the FBI Academy during this time. To generate an initial subject pool of serial and single prostitute homicide victims to be considered for the study, a search of the NCAVC's proprietary computer database was conducted, extracting 275 cases involving female prostitute victims of individual male perpetrators that were "cleared" (i.e., closed) by an arrest; cleared by exceptional means (i.e., have an identified suspect but do not prosecute the instant offense due to his death; his conviction and lengthy incarceration period for another offense; extradition issues, etc.); or that were "open" with a warrant issued for the offender's arrest (FBI, 1998; M. A. Hilts, personal communication, August 21, 1998). Of the 275 cases, 22 were excluded from the list due to the following reasons: having more than one perpetrator; homicide occurring outside of the United States; perpetrator found innocent with the case being thrown out of court;

male victim and female offender; unsure whether a case was "cleared"; or that the case was too recently closed, or "too hot," with investigators reluctant to release case materials due to pending adjudication. Additional subjects were obtained from intact, closed NCAVC case files.

Two FBI Special Agents who worked in NCAVC were assigned to the project as research assistants, and were briefed on the project's objectives and research design. They were also provided with flyers containing this information to serve as scripts as they established collateral contact with the original, referring federal, state, and local law enforcement agencies who had submitted the 275 cases to the NCAVC. Specifically, the agents requested copies of the respective agency's closed homicide case file and then faxed follow-up documentation to the contact, consisting of an official FBI request as well as identifying information on the case, including the victim and perpetrator's names, dates of birth, agency case number, and victim's date of death.

Initial contacts for some of the aforementioned agencies were facilitated by command-level law enforcement personnel who were graduating from the FBI's National Academy, located at the FBI Academy. These individuals were provided with flyers describing the study, which they subsequently distributed to other colleagues. They also put the research team in contact with appropriate personnel in their respective agencies who could fulfill the information request as well as with other National Academy graduates. These latter individuals were contacted by telephone and e-mail. On several occasions, personnel in FBI field offices helped gather case materials and served as liaison officers with police departments in their local areas. In one special instance, the research team was invited and traveled to the headquarters of a large midwestern city

police department to make and obtain copies of closed prostitute homicide case files for inclusion in the study. Out of the 53 victim files collected, 34 were utilized in the project and one case was excluded due to multiple homicide perpetrators. Ultimately, cases and collateral materials were obtained from 38 federal, state, and local police agencies; prosecutor's and district attorney's offices, and medical examiner's and coroner's offices.

With the assistance of NCAVC personnel, an official batch request was made at the outset of data collection for over 300 perpetrator and victim criminal histories from the FBI's Criminal Justice Information Service (CJIS), located in Clarksburg, WV. CJIS was able to generate this large volume of records expediently, although some criminal histories were not available due to their being purged from their database. All submitted materials were organized in folders previously prepared by an FBI Honors Intern who had, prior to this writer's arrival at the NCAVC, reviewed a preliminary list of cases, identified those meeting inclusion criteria, prepared a comprehensive list of potential victims, and filled-out requisite NCAVC file request forms. She was supervised by NCAVC personnel who generated an initial set of 15 offender criminal histories to supplement the materials.

Using the operational definitions for single and serial (multiple) homicide prostitute victims described above, in conjunction with the study's inclusion (i.e., female prostitute victims and male homicide offenders) and exclusion (i.e., victims of double and triple homicides, mass murder, and spree murder; male prostitute victims; female homicide offenders) criteria, the research team members carefully screened each potential case. During this process a number of cases were further excluded that involved accomplices who assisted or accompanied the offender during the homicide. However,

several cases were included that identified child and adult witnesses who had no involvement in the victim's homicide (i.e., did not physically partake in the act of killing the victim or in the disposal of her body).

As previously mentioned, 123 cases were included in the study, encompassing 49 single homicide prostitute victims and 74 serial homicide prostitute victims.

Geographically, the single group's 49 homicide cases were submitted from jurisdictions in 18 states (California, Colorado, Connecticut, Florida, Hawaii, Illinois, Massachusetts, Michigan, Nebraska, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Texas, Washington, Wisconsin) and the District of Columbia. The serial group's 74 homicide cases originated from jurisdictions in 12 states (California, Delaware, Florida, Illinois, Massachusetts, New York, North Carolina, Oregon, Pennsylvania, Tennessee, Texas, and Virginia).

Protocol Coding Procedure:

After selecting a case for inclusion, the research assistant, or rater, recorded the victim and perpetrator's names, dates of birth, and NCAVC case numbers on separate name indices for single and serial prostitute homicide victims, respectively. Each single homicide victim was numbered sequentially, beginning with "100," while serial victims were assigned sequential numbers, beginning with "300." For each homicide, the responsible perpetrator was assigned the same identification number as the victim. It was decided that at the outset of the study that each serial homicide would be considered individually (i.e., as a unique homicide occurring at a single point in time) and, as such, each victim and perpetrator received a unique identification number. This method would also permit for future analyses, examining changes in variables across serial victims. At

the end of data collection the master lists, along with all submitted, confidential case materials and correspondence containing identifying information, were surrendered to the NCAVC, and are being securely maintained in a locked cabinet in compliance with institutional review board and ethical guidelines.

Following the assignment of a unique identification number, the rater obtained any internal NCAVC documentation (e.g., case file and VICAP (FBI, 1991; 1998) Form) existing for the case as well as any criminal history information obtained from CJIS. Working individually, each research assistant reviewed the contents of the respective case file (e.g., FBI and NCAVC documents as well as any collected police reports, offender and victim background information, criminal histories, court documents, medical and psychiatric records, psychological evaluations, offender and witness interviews, autopsy and toxicology reports, crime scene photographs, and diagrams) in depth and, concurrently, completed the PHQ (Dudek & Nezu, 2000).

Four PHQ (Dudek & Nezu, 2000) variables required the calculation of geographic distances (e.g., the distance between the initial encounter site to the body disposal site), which was achieved utilizing publicly available map and trip-planning computer programs on the Internet (MapQuest.com, Inc., 2001; Vicinity, 2001). On several occasions, follow-up collateral contacts were made with the original, referring federal, state, or local law enforcement agency to obtain missing file materials (e.g., autopsy and toxicology reports) and to obtain responses on items that were unclear or missing pursuant to the file review (e.g., identifying the age and gender of sex offense victims or explaining local offense abbreviations listed on a criminal history printout). Further, a comprehensive database of state criminal statutes was frequently consulted on the

Internet to aid in the interpretation of offenses listed on the criminal history (Cornell Law School, 2001).

Occasionally, when examining the files of serial victims, ambiguous data pertaining to the perpetrator were obtained that were not victim or date specific. In other words, the file cited behaviors of the perpetrator (e.g., the murderer slept next to some of his victims' corpses, was described as a "sadistic" customer by living prostitute victims, and collected pornography), but was unclear as to when or with whom they were exhibited. Pursuant to consultation, it was agreed that when a timeframe could not be established for such data, that they would be coded the same across the various PHQ (Dudek & Nezu, 2000) protocols, rather than be omitted altogether.

After thoroughly reviewing the perpetrator's case file information, the rater next completed and scored the PCL-R (Hare, 1991c) retrospectively (see Serin, 1993; Wong, 1988), recording the resulting factor and total scores on the corresponding PHQ (Dudek & Nezu, 2000) protocol. However, for each serial offender, only one PCL-R protocol was completed, based upon the rater's accumulated data and impressions obtained across several victims' cases. Consistent with recent research (e.g., Harris et al., 1991; Rice & Harris, 1997; Rice et al., 1992), a cutoff total score of 25 (Wong, 1984, as cited in Rice et al., 1992) was utilized to counter the tendency of file-based PCL-R scores to underestimate psychopathy levels.

Throughout the data collection period, the raters were monitored due to the graphic nature of the file materials, although the FBI Special Agents assisting the author had significant field experience investigating violent crimes. The collected data were coded by the experimenter according to their scale and subsequently entered into the

PHQ Database (Dudek, Nezu, & Nezu, 2000), utilizing SPSS Data Entry Builder, Release 2.0 (SPSS, 2000). The database product subsequently coded the data automatically, entering it into SPSS for Windows, Release 10.0.7 (SPSS, 2000) for analysis. The PHQ Database and the data coding process will be discussed more thoroughly in the next section, examining the study's "Data Integrity Measures."

Data Integrity Measures:

Operationalization of Items and Pilot Study:

Pilot Study Procedure:

In light of the project's exploratory nature, numerous measures were instituted to minimize, or control, error variance. As previously mentioned, wherever possible, the PHQ (Dudek & Nezu, 2000) items were operationally defined, or illustrative examples provided. Additionally, a pilot study was conducted to identify rater coding difficulties and poorly operationalized variables in an early PHQ (Dudek & Nezu, 2000) draft, and to provide initial interrater reliability data for both the PHQ and the PCL-R (Hare, 1991c), examining percentage of agreement with a random sample of variables. Specifically, 9 trained graduate research assistants, this writer, and their research laboratory and clinical training supervisor – a licensed clinical psychologist and faculty member – were briefed on the contents of the PHQ by the author, and were subsequently trained on the administration and scoring of the PCL-R by a licensed forensic psychologist and faculty member.

Following the training period, each rater confidentially reviewed a redacted, dummy case file, furnished by the NCAVC, and then completed both instruments. This

case file contained actual redacted police and FBI reports, a completed VICAP (FBI, 1991; 1998) Form, a map, an autopsy report, as well as fabricated criminal history information. Special precautions were taken to ensure the integrity and security of this information, with all participants signing a nondisclosure form prepared by the author; they also agreed not to photocopy the materials and to return all documents to the author upon completion. All of the raters were monitored and debriefed by the author, if necessary, in light of the graphic nature of the file materials.

With the exception of the PHQ's (Dudek & Nezu, 2000) "Classification Form," in which both items were analyzed, a random sample of 20 items were selected from the remaining, lengthier PHQ sections, which contained between 63 and 120 items each. These were the "Victim Characteristics Form," the "Perpetrator Characteristics Form," the "Situational-Interactional Factors Form," the "Sadistic Fantasy Life Form," the "Crime Scene Variables Form," and the "Body Disposal Form." The random numbers were generated using a random number generator for the social sciences that is publicly available on the Internet (Urbaniak & Plous, 2000).

Each of the randomly selected dichotomous and categorical PHQ (Dudek & Nezu, 2000) items and missing data were dummy coded accordingly (e.g., "1" = Yes; "0" = No; and "99" = Unable to determine), along with missing data. Checked-off items were entered either as "1" (endorsed) or "0" (not endorsed). Similarly, for variables requesting a text response (e.g., If "Yes," describe the abuse inflicted upon the prostitute victim.), a "1" was entered if a description was provided and a "0" was entered if a description was omitted. The data were entered into a spreadsheet created with the aid of a computer consultant, utilizing Microsoft Excel (Microsoft, 1999). Utilizing this writer's ratings as

the principal means of comparison, or “gold standard,” percentage of agreement calculations were made on each of the randomly selected items.

Although the 11 raters also tried to complete a file-based PCL-R (Hare, 1991c), due to a paucity of file materials, no valid profiles (i.e., > 5 items omitted out of the measure’s 20 total items) were obtained. In light of this occurrence, no percentage of agreement calculations were performed for this measure.

Pilot Study Results:

With a few exceptions, there was a high degree of interrater reliability demonstrated in each of the PHQ’s (Dudek & Nezu, 2000) sections. Items were examined if their percentage of agreement fell below 75% (i.e., ≤ 8 out of 11 raters in agreement). Overall agreement for the PHQ ranged from 27% (3 out of 11 raters agreeing) to 100%. In the “Classification Form” percentage of agreement for the two variables examined was 55% (6 out of 11 raters agreeing) and 100%, respectively, with the former figure attributable to mixed responses on the variable assessing the perpetrator’s motive (i.e., either sexual, nonsexual, or unable to determine). For the remaining, lengthier PHQ sections, percentage of agreement ranges will be cited only, followed by a summary of the common problems encountered, possible explanations for the variance amongst rater responses, and measures taken to increase reliability.

In the “Victim Characteristics Form,” 16 of 20 items had agreement ranging between 82% (9 out of 11 raters agreeing) and 100%, while the remaining four items ranged from 27% (3 out of 11 raters agreeing) to 64% (7 out of 11 raters agreeing). Similarly, for 17 of 20 items in the “Perpetrator Characteristics Form,” percentage of agreement calculations ranged between 82% (9 out of 11 raters agreeing) to 100%. The

remaining three items ranged between 36% (4 out of 11 raters agreeing) and 73% (8 out of 11 raters agreeing). In both the "Situational-Interactional Factors Form" and the "Body Disposal Form," all 20 items in each section had percentage of agreement ranging between 82% (9 of 11 raters agreeing) to 100%, demonstrating a high degree of interrater reliability. The "Sadistic Fantasy Life Form" had agreement ranging between 82% and 100% for 17 of 20 items, with agreement on the remaining three items ranging between 64% (7 of 11 raters agreeing) and 73% (8 of 11 raters agreeing). The "Crime Scene Variables Form" demonstrated 91% (10 of 11 raters agreeing) to 100% percentage of agreement on 16 of 20 items. Agreement on the remaining four items ranged between 27% (3 out of 11 raters agreeing) and 73% (8 out of 11 raters agreeing).

A review of the raters' responses revealed a variety of common themes in their discrepancies. In some cases, error was introduced by simply missing information in the case file. For instance, the victim's absence of clothing should have been coded as evidence of a "sexual" motivation, although five raters coded this variable as either a "nonsexual" motivation or "unable to determine." Next, the operational definitions between some PHQ (Dudek & Nezu, 2000) items differed only slightly, resulting in error. This was evidenced when most raters classified the victim's principal work area as an "established vice area," while the author classified it as a "neighborhood/nonstroll area," a residential location where vice activities occur proximate to illicit drug use and distribution. The dummy case file contained evidence that was subtle to persons inexperienced in forensic pathology and crime scene processing. Specifically, although the victim's autopsy report noted the presence of a ligature around the victim's neck, indicating that the weapon (i.e., ligature), was recovered at the crime scene (i.e., the items

recovered on the victim's body were also present when it was processed and transported from the crime scene), most raters responded "unable to determine" when asked if the weapon was recovered.

In some cases, the evidence in the case file was ambiguous, producing rater disagreement. For example, the file noted that an earring was missing from the victim, with four raters coding that this was evidence of the perpetrator taking a "trophy" or a "souvenir" from the crime scene; however, seven raters agreed that there was not enough information present to make such a judgment. Lastly, many rater discrepancies occurred when items were coded "0" (indicating either "zero" or "No") or coded "99" or left blank (signifying "unable to determine" or missing data). For instance, when asked to count the number of victim vice arrests – of which none were listed in the case materials – almost half indicated that there were "zero" vice arrests while the other half indicated that this finding could "not be determined" with the provided materials.

Following the completion of the pilot study, the PHQ (Dudek & Nezu, 2000) was revised extensively. Items were further revised and operationalized; new questions were added; and detailed coding instructions were provided, where appropriate. For instance, raters were instructed to enter a response for each item; to derive their responses from the materials reviewed; and to be conservative in their ratings, namely, to avoid "creating" responses because they felt it was "likely" or "probable" that the victim or perpetrator engaged in a certain behavior. Moreover, in addition to clarifying how to code particularly complex items (e.g., counting adult sex offenses committed prior to the victim's death, excluding those involving prostitutes), helpful hints were also prepared, such as subtle case evidence in support of an item that might be easily overlooked (e.g.,

carefully examining lists of items seized pursuant to a search warrant for evidence of potential paraphilic interests and an active sexual fantasy life, such as female underwear or pornography collections, respectively).

Professional Consultation:

Over the course of the study, the chief toxicologist in the medical examiner's office of a large East-coast city, FBI crime scene experts, clinical psychology faculty, and database engineers at SPSS, Inc. were repeatedly consulted with regard to the integrity of toxicology, autopsy report, and other variables recorded in the measure. The toxicology expert suggested meaningful drugs of abuse for measurement; explained both the reasonable conclusions and the limitations involved in interpreting certain postmortem drug levels; assisted with the conversion of toxicological units into a standardized format at the conclusion of the study; and helped identify incompatible or spurious toxicological findings (e.g., omitting cases where the victim's drug tissue levels were reported or establishing a cutoff to omit cases where the victim's reported alcohol level was likely attributable to advanced body decomposition rather than ingestion of the substance) (G. V. Purnell, personal communications, August 26, 1998; September 18, 1998; June 9, 1999; January 13, 2000; April 20, 2000; April 2, 2001).

Special Agents assigned to the NCAVC assisted with the operationalization of pathology-related items, such as determining the level of decomposition of the victim's body (W. D. Lord, personal communication, July 14, 2000), and helped troubleshoot coding discrepancies among raters. In one instance, pursuant to continued poor interrater reliability on variables pertaining to "sexual sadism" and "sexually sadistic activity," these concepts were redefined to encompass extreme behaviors and forms of torture (e.g.,

whipping or burning the victim, cutting or mutilating her genitals, and using extensive ligatures), while ruling-out aggressive attempts to control the victim (e.g., spraying with mace, using duct tape over the victim's eyes/mouth, restraining the victim, or threatening the victim verbally or with a weapon) (W. D. Lord, personal communication, November 16, 2000). Moreover, clinical psychologists with expertise in forensic and research design issues were consulted, as necessary, following item revisions, coding procedure changes, or PCL-R (Hare, 1991c) scoring questions to minimize the introduction of error.

Lastly, this writer conferred with SPSS, Inc. software engineers to both ascertain the integrity of the Data Entry Builder, Release 2.0 (SPSS, 2000) product for the large data set as well as to obtain programming assistance for complex PHQ (Dudek & Nezu, 2000) coding questions and calculations, such as the autocoding of responses based on a prior response (M. Holubow, personal communication, November 7, 2000), the collapsing of items (M. Holubow, personal communication, February 27, 2001) and the calculation of time-related fields (i.e., estimated length of time victim was involved in prostitution and estimated time perpetrator was involved in solicitation) (D. Bartley, personal communication, November 7, 2000).

Data Entry and Accuracy:

With the aid of a consultant, the PHQ (Dudek & Nezu, 2000) protocol was transformed into a nearly identical, computerized format, the Prostitute Homicide Questionnaire Database (PHQ Database; Dudek, Nezu, & Nezu, 2000), utilizing SPSS Data Entry Builder, Release 2.0 (SPSS, 2000). This permitted for data entry in a logical, "user friendly" manner into the project's designated laptop computer by "clicking" on appropriate responses and directly entering numerical and text data. It was believed that

with nearly 300 variables to be entered, the use of the database product would minimize data entry error and fatigue in light of the "one-to-one" translation of the PHQ protocol as compared to the use of a monotonous spreadsheet program.

The PHQ's (Dudek & Nezu, 2000) many dichotomous and categorical variables were dummy-coded in SPSS Data Entry Builder, Release 2.0 (SPSS, 2000) using "0" (indicating "No" or the absence of a criterion), "1" and consecutive integers (indicating "Yes" or the presence of a criterion or category, respectively), and "99" (indicating "Unable to Determine" or missing data). Continuous variable data and text responses were entered into the PHQ Database (Dudek, Nezu, & Nezu, 2000) as reported in the original PHQ protocol. As mentioned, the database program converted all of the entered data automatically for analysis by SPSS for Windows, Release 10.0.7 (SPSS, 2000).

Following data entry, the project's toxicology consultant assisted with the conversion of reported drug blood levels into standardized units, which were subsequently reentered for analysis (G. V. Purnell, personal communication, April 2, 2001). Specifically, cocaine, cocaine metabolite (benzoylecgonine), morphine, and codeine levels were converted to milligrams per liter (mg/L) while ethanol (alcohol) levels were converted to milligrams per deciliter (mg/dL) standardized units (Garriott, 1996; Stoklosa & Ansel, 1991). The blood alcohol levels taken from five victims whose bodies were moderately to severely decomposed were omitted from the analysis because they fell at or below an established cutoff of 60 mg/dL – a level possibly attributable to the body's production of endogenous alcohol secondary to decomposition, rather than the victim's actual ingestion of alcohol (Gilliland & Bost, 1993; G. V. Purnell, personal communication, April 2, 2001; Zumwalt, Bost, & Sunshine, 1982). Additionally, any

drug levels obtained from tissue, bile, and vitreous fluid samples were omitted from the analysis due to their being incomparable with blood levels (G. V. Purnell, personal communication, April 2, 2001). During the data entry and analysis phases of the project, this writer frequently contacted the research team members and other crime scene experts in the NCAVC for assistance with coding discrepancies and with the necessary collapsing of variables into more meaningful categories. All of the collected data were entered, double-checked for accuracy, and archived on storage media by the experimenter.

Rater Training and Interrater Reliability Study:

Over a three-week period, the experimenter thoroughly briefed the two FBI Special Agent research assistants on the background of the project; explained the derivation of the various PHQ (Dudek & Nezu, 2000) items from the research literature; and trained them on the completion of the instrument. The raters each listened to standardized training audiotapes (Hare & Hart, 1997b) for the scoring of the Psychopathy Checklist-Revised (PCL-R; Hare, 1991c), and reviewed the accompanying documentation (Hare & Hart, 1997a). They also read the PCL-R Rating Booklet (Hare, 1991a) in its entirety as well as relevant portions of the PCL-R Manual (Hare, 1991b) recommended by this writer, who later reviewed the PCL-R items with each rater individually. Lastly, each research assistant was provided with a written set of instructions, including revised operational definitions, coding rules, and helpful hints and strategies generated by the experimenter through his previous examination and coding of cases.

Following the training period, the two research assistants individually reviewed 9 victim case files (4 single and 5 serial victims, respectively) randomly selected by the

experimenter under the conditions that they could be completed in a reasonable amount of time (i.e., one case per day) in light of the project's time constraints and that they represented varying degrees of file quality (i.e., ranging from scant to comprehensive submitted documentation). They then completed the PHQ (Dudek & Nezu, 2000) and the PCL-R (Hare, 1991c). Each of the raters' PHQ and PCL-R protocols were entered into the PHQ Database (Dudek, Nezu, & Nezu, 2000), along with those of the experimenter, utilizing the SPSS Data Entry Builder, Release 2.0 (SPSS, 2000) database program. Using the aforementioned random number generator for the social sciences available on the Internet (Urbaniak & Plous, 2000), the program was instructed to produce sets of random numbers, representing 50% of the items in each of the PHQ's lengthier sections, totaling approximately 150 items for the entire measure. These integers corresponded to the respective item numbers in each section and were selected for analysis. The homicide type and motive variables from the brief "Classification Form" were also included.

The above data were organized in SPSS for Windows, Release 10.0.7 (SPSS, 2000); spreadsheets were printed; and percentage of agreement calculations were performed manually. As in the pilot study, this writer's ratings served as the principal means of comparison, or "gold standard," although agreement was also examined between the two research assistants ("Rater 1" and "Rater 2," respectively). Briefly, dichotomous and categorical PHQ (Dudek & Nezu, 2000) variables and missing data were dummy coded as described in the previous section. As in the pilot study, text variables (e.g., "Please describe the other precipitating emotional stressor:") were either coded "1" or "0" if a description was provided or omitted, respectively.

Interrater Reliability Study Results:

The results of the interrater reliability study are presented in Appendix B, including, for each PHQ (Dudek & Nezu, 2000) section, individual agreement between the experimenter and Raters 1 and 2, respectively, as well as agreement between Raters 1 and 2 across all selected variables. Reliability for the sample of nine homicide cases varied widely for the entire PHQ, ranging from no agreement with the experimenter's ratings to 100% agreement. As shall be illustrated, agreement varied between items within the PHQ's Forms as well. In this section, only the "overall agreement range" (i.e., the lowest and highest percentage of agreement values between the experimenter and either of Raters 1 or 2) will be reported, and the reader is referred to Appendix B for additional information.

Within the "Classification Form," there was 100% agreement (agreement on 9 of 9 cases) amongst raters for the variable addressing homicide category, while overall agreement ranged between 78% (agreement on 7 of 9 cases) to 100% for the variable examining homicide motive. In the "Victim Characteristics Form," agreement between this writer and the two research assistants ranged between 33% (agreement on 3 of 9 cases) and 100% across the 21 randomly selected items. In the "Perpetrator Characteristics Form," overall percentage of agreement calculations ranged from 11% (agreement on 1 of 9 cases) to 100% on the 40 randomly selected PHQ (Dudek & Nezu, 2000) items, while they ranged from 20% (agreement on 1 of 5 total cases) to 100% (agreement on 5 of 5 total cases) on the nine randomly selected PCL-R (Hare, 1991c) items that were also recorded in this section. Amongst the 22 randomly chosen items in the "Situational-Interactional Factors Form," overall agreement ranged widely from 0%

to 100% across the 9 prostitute homicide cases. Of the 32 selected variables from the "Crime Scene Variables Form" and the 19 variables selected from the "Body Disposal Form," overall percentage of agreement calculations were the same, ranging between 22% (agreement on 2 of 9 cases) and 100%.

Following the interrater reliability study, the research team convened to examine the findings; to identify problem variables and coding difficulties; and to resolve these discrepancies. Specifically, PHQ (Dudek & Nezu, 2000) items having less than or equal to 78% agreement (i.e., agreement on 7 of 9 cases) and PCL-R (Hare, 1991c) items having less than or equal to 80% agreement (i.e., agreement on 4 of 5 cases) were scrutinized, although the coding rules for almost all PHQ items, as well as the randomly selected PCL-R items, were reviewed over the course of the day-long session.

As encountered in the initial pilot study, it was observed that in many cases, interrater reliability was deflated due to the coding of "0" (i.e., "No" or the absence of a criterion) versus "99" (i.e., "Unable to Determine" or missing data) on many items. The team members reviewed the coding rules for all items in question and mutually agreed that "No" would signify the absence of evidence supporting a given item or contrary evidence, while "Unable to Determine" would be coded in cases of conflicting evidence, being unsure, or having a dearth of information so as to proscribe an informed decision.

Similarly, other problems that were identified included violations of coding rules; mistakenly circling the wrong response; missing relevant information in the case file; failing to consult the VICAP (FBI, 1991; 1998) Form as required on certain questions; counting discrepancies; training-related errors made when calculating geographic distances using designated Internet resources; and items containing inadequate

operational definitions, instructions, and misleading questions, requiring further clarification. In the latter instance, it was discovered that questions intended to assess merely for the occurrence of vaginal and/or anal sex between the victim and perpetrator contained the phrases "vaginally raped" and "anally raped," respectively. The FBI Agent raters, appropriately, coded only for the presence of these coercive sexual acts, while the author, who drafted the questions, coded them for the presence of these sexual activities only.

This writer caused agreement to decrease on numerous serial victim variables when he erroneously forgot to inform the other raters about some supplemental case information that had been verbally conveyed to him by an NCAVC member while coding the cases himself. In these instances, the two research assistants correctly coded the cases based upon the limited information they had available at the time. Further, several variables, assessing for the presence or nonpresence of situational stressors (e.g., parental conflict, employment-related stress, etc.), initially required the raters to ascertain their approximate dates of onset (e.g., within last 24 hours, greater than 6 months prior, etc.). Agreement on these variables was poor, resulting in their being recoded and dichotomized (i.e., timeframes omitted) for the final data analysis. When the percentage of agreement was rechecked, it increased to acceptable levels between the raters on one of the items.

Differences in training (i.e., clinical psychology versus law enforcement instruction) further contributed to rater discrepancies. For instance, the FBI Special Agent research assistants were more conservative than this writer, a clinical psychologist-in-training, when coding for the presence of "overkill" on a victim's body, having the

expertise and understanding that multiple wounds might be attributable to an inexperienced assailant or to a prolonged assault and struggle, requiring multiple assaults (e.g., stab wounds) to incapacitate the victim. This writer initially attributed multiple victim wounds as a positive indication of "overkill," believing that they were indicative of an enraged offender. Ultimately, an expert in crime scene analysis was consulted to resolve this discrepancy, and it was agreed that "overkill" would encompass "uncontrollable, frenzied rage," involving excessive violence and trauma inflicted upon the victim" (W. D. Lord, personal communication, November 16, 2000).

Additionally, this writer's familiarity with the PCL-R's (Hare, 1991c) psychometric properties and clinical constructs (e.g., "shallow affect" or "superficial charm") as well as his assessment and treatment experience with forensic populations, including psychopathic individuals, may have accounted for some of the rating discrepancies across the randomly selected PCL-R items. The FBI Special Agent raters had no previous exposure to the instrument. It was observed that all raters generally concurred for the presence of the various PCL-R criteria, but that agreement was deflated due to coding differences in the "degree" of the various personality traits and behaviors (i.e., coding a "1 = Maybe" versus a "2 = Yes" for the respective item).

Following the review session, the rater instructions and coding guidelines were revised to encompass the reoperationalized variables and concepts discussed above, including "overkill," "sexual sadism," and "sexually sadistic activity." Most importantly, each member of the research team thoroughly reviewed all of his previously coded cases and made changes reflecting these novel operational definitions as well as others agreed upon by consensus. Two variables, addressing the perpetrator's reasons for selecting the

victim (SELECT) and soliciting her for prostitution (SOLICIT), were dropped from the final data analyses due to poor interrater reliability. Specifically, it was ascertained that each rater's responses were legitimate, and that the perpetrator's decisions in the above regard were multifactorial, while the respective questions requested that only a single response be selected.

As discussed above, it was apparent that the research team members did successfully record data from the victim case files when it was present, with many discrepancies attributable to their level of confidence, or confusion, when data was absent or nebulous (e.g., coding something as "absent," versus "unable to determine") or error introduced by responses that differed by degree (e.g., counting errors, timeframe differences, or coding a PCL-R (Hare, 1991c) as "maybe" versus "yes"). As such, the obtained, attenuated percentage of agreement calculations in these cases may be misleading, and should be considered within these contexts. Additionally, because the aforementioned review session did help to resolve most of the preexisting disagreements between raters, it is this writer's opinion that the data obtained from the subsequent coding of actual cases may be considered reliable. When coding cases for inclusion, the raters frequently consulted each other with problem areas, and these were resolved by consensus, serving as an additional safeguard for data integrity.

RESULTS

Approach to Analyses:

Conceptual Blocks:

Initially, the approximately 300 variables included in the study were organized into 35 conceptual blocks, consisting of approximately 10 variables each. Two of these blocks, containing the individual PCL-R (Hare, 1991c) items, were later omitted from the analyses, as all of these criteria were accounted for by the Factor 1, Factor 2, and Total Scores, respectively, which were already included in another block. The grouping of the variables was first accomplished by utilizing existing theory (e.g., including risk behaviors cited in Ratner (1993a), such as “servicing any customer” or “working under the influence of drugs or alcohol,” in the “Victim Risk Variables Block”). Variables were also grouped, or appended to existing groups, if such categorical groupings made good conceptual and logical sense (e.g., including all paraphilic interests together in the “Perpetrator Paraphilic Interests Block” or including a variable, encompassing prior acts of violence against prostitutes, with other variables describing the perpetrator’s vice-related activities in the “Perpetrator Vice Involvement/Interest Block”). The original conceptual block groupings may be seen in Table 1. Prior to conducting initial bivariate data analyses, frequency counts were conducted on variables with large numbers of categories, and those containing few entries were combined and collapsed to make them more meaningful.

Inclusion and Exclusion Criteria for Bivariate Analyses:

Bivariate data analyses were initially conducted on the dichotomous, categorical,

Table 1

Nonparametric and Parametric Bivariate Relationships Between Prostitute Homicide Groups and Conceptual Blocks of Variables By Form

Victim Characteristics Form																		
Victim Demographics Block																		
Variable Name	Variable Description	Single Victims (<u>n</u> = 49)	Serial Victims (<u>n</u> = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts ^a		Serial Victim Risk Estimate Cohorts ^b		Odds Ratios (Yes/No) ^c		
					<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>				Yes	No	Yes	No	Single	Serial	
140 VICTRAC2	Victim Race	49	74	Invalid – dropped														
VICTAGE	Victim Age	49	72		28.33	7.19	30.19	7.92	119	1.32	.19							
VHOMLESS	Victim Homeless	47	64	0.33							.12							
SOCSUPPT	Social Support	34	54	Invalid – dropped														
HXOFVICT	Victimization History	13	14	Invalid – dropped														
VICETIME	Time Prostituting	22	36		55.95	45.07	91.58	77.44	55.92	2.21	.03							
Victim Risk Variables Block																		
SERVEANY	Serve Any Customers	15	26	Invalid – dropped														
VWKALONE	Worked Alone	18	25	4.29							.03	0.63	2.50	1.60	0.40	0.25	4.00	

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi^2(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
DRUGWORK	Worked On Drugs	30	46	Invalid – retained													
ROBJOHN	Robbed Customers	17	17	Invalid – dropped													
NOCONDOM	No Condom During Sex	6	14	Invalid – dropped													
FORGOUSE	Forgoes Condom Use	0	3	Invalid – dropped													
141 NOCHECK	Fails to Check Hygiene	0	3	Invalid – dropped													
RISKYSEX	Engages in Risky Sex	1	3	Invalid – dropped													
ANYSEX	Performs Any Sex Acts	5	1	Invalid – dropped													
FREAKING	Perverse Sex & Abuse	15	22	Invalid – dropped													
RISKLEVL	Total # Risk Behaviors	32	51		2.19	1.49	2.47	1.53	81	0.83	.41						
Victim Drug Use (Presence/Nonpresence) Block																	
COCAPRES	Cocaine	28	41	4.26							.04	0.73	2.30	1.37	0.43	0.32	3.14
BZEPRES	Benzoyllecgonine (BE)	26	36	3.71							.054	Retained					
COCBZPR2	Combined Cocaine/BE	28	42	3.09							.08	Retained					

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi^2(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
ETOHPRES	Ethanol (Alcohol)	25	36	0.97							.32	Retained					
MORPPRES	Morphine	20	34	Invalid – dropped													
CODEPRES	Codeine	20	33	Invalid – dropped													
SCH1PRES	Schedule I Drugs	17	15	Invalid – dropped													
142 OSCHPRES	Schedule II-IV Drugs	17	17	Invalid – dropped													
Victim Toxicology (Blood Drug Levels) Block																	
COCALEVL	Cocaine Blood Level	24	33		0.18	0.24	0.31	0.32	55	1.72	.09						
BZELEVL	Benzoylcegonine Level	22	33		1.05	4.26	2.00	1.56	53	0.16	.87						
ETOHLEVL	Ethanol Level	24	29		38.96	68.45	38.17	71.29	51	-0.04	.97						
MORPLEVL	Morphine Level	20	32		4.07e ⁻²	0.12	6.98e ⁻²	0.39	50	0.33	.75						
CODELEVL	Codeine Level	20	32		2.80e ⁻³	1.25e ⁻²	0.00	0.00	Invalid – dropped								
Prostitution Work and Comorbid Drug Use Influence Block																	

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
SEXSRVC2	Sexual Services	31	54	4.99							.03	0.56	1.59	1.78	0.62	0.35	2.83
VICMOTV2	Prostitution Motivation	28	42	Invalid – dropped													
WKSETTN2	Victim's Work Setting	29	71	Invalid – dropped													
CRIMAREA	High Crime Work Area	14	51	Invalid – dropped													
143 PERSECUR	Security Measures Use	16	29	3.80							.051	Retained					
SEXPLAC2	Sexual Encounter Place	24	54	7.98							.02						
SXPL_CAR	Parameter - In Cars											0.75	1.10	1.33	0.91	0.68	1.46
SXPL_ISO	Parameter - In Isolated Areas											0.45	1.47	2.22	0.68	0.31	3.28
SXPL_OTH	Parameter – In Other Areas											2.25	0.56	0.44	1.78	4.00	0.25
VHYGIENE	Poor Victim Hygiene	19	22	Invalid – dropped													
VVICECHG	# Victim Vice Arrests	30	45		4.60	11.28	7.07	10.20	73	0.98	.33						
VPOSSCHG	# Drug Poss. Arrests	29	42		1.03	2.97	1.43	2.12	69	0.65	.52						
VDISTCHG	# Drug Dist. Arrests	28	39		0.32	.82	0.18	0.56	65	-0.85	.40						

Table 1 (Continued)

Perpetrator Characteristics Form

Perpetrator Demographics Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
PERPRAC2	Perpetrator Race	49	74	Invalid – dropped													
PERPAGE	Perpetrator Age	49	74		32.57	8.86	34.69	9.21	121	1.27	.21						
144 SAMERACE	Intraracial Homicide	49	74	3.89							.05	0.81	1.83	1.24	0.55	0.44	2.28
MASTATU2	Marital Status	32	64	Invalid – dropped													
PHOMLESS	Perpetrator Homeless	40	68	2.35							.13						
PERPJOB3	Perpetrator Occupation	35	67	Invalid – dropped													
TRAVELER	Traveler/Visitor to Area 47		73	Invalid – dropped													
Perpetrator Vice Involvement/Interest Block																	
PVICECHG	# of Prior Vice Arrests	45	70		0.33	1.00	0.24	0.94	113	-0.49	.62						
SLCTTIME	Time Soliciting	7	11		138.86	78.21	47.73	30.64	7.19	-2.94	.02	Dropped					

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
FREQVICE	Frequents Vice Areas	18	70	Invalid – dropped													
RELATION	Victim's Relationship	39	51	Invalid – dropped													
REGCUSTM	Regular Customer	32	37	1.05							.31						
OTRPROST	Sees Other Prostitutes	18	71	Invalid - dropped													
145 ACTNGOUT	Hurt Other Prostitutes	19	71	Invalid – dropped													
Perpetrator Sex Offender Risk Variables Block																	
PADLTSEX	# Adult Sex Offenses	44	65	0.66	1.16	1.25	1.56	106.01	2.25	.03	Dropped						
PCHLDSEX	# Child Sex Offenses	39	56	0.23	1.56	0.73	1.42	90.91	3.73	.0001	Dropped						
TOTALSEX	Total # Sex Offenses	44	62	1.00	1.41	1.97	1.66	104	3.14	.002							
MALEVICT	Male Victim	34	52	Invalid – dropped													
HXJUVSEX	Juvenile Sex Offending	4	6	Invalid – dropped													
NUMVICTS	# Sex Offense Victims	44	55	1.02	1.42	1.91	1.65	97	2.82	.01							
VICTTYPE	Adult & Child Victims	37	53	5.55							.02	0.29	1.28	3.49	0.78	0.22	4.47

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi^2(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
STRANGER	Assaults Strangers	29	38	12.67							.0001	0.29	2.10	3.51	0.48	0.14	7.36
SOTYPES	Different Sex Offenses	44	67		0.57	0.66	1.09	0.60	85.34	4.22	.0001						
NONSXCHG	Nonsex Offense Arrests	47	69		9.47	12.56	11.03	17.56	114	0.52	.60						
VIOLNCHG	Violent Offense Arrests	46	70		3.11	4.02	3.16	6.02	114	0.05	.97						
146 Perpetrator Paraphilic Interests Block																	
PEDOPHIL	Pedophilia	35	48	11.56	Dropped						.001	0.38	1.95	2.64	0.51	0.19	5.15
EXHIBIT	Exhibitionism	36	40	Invalid – dropped													
FETISH	Fetishism	18	24	Invalid – dropped													
FROTTEUR	Frotteurism	32	38	Invalid - dropped													
SADISM	Sadism	38	58	0.72							.40						
MASOCHSM	Masochism	18	29	Invalid – dropped													
TRFETISH	Transvestic Fetishism	18	30	Invalid – dropped													
VOYEUR	Voyeurism	30	41	Invalid – dropped													

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ^2 (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
TELESCAT	Telephone Scatalogia	19	31	Invalid – dropped													
NECROPHL	Necrophilia	32	44	19.41	Dropped						.0001	0.16	2.22	6.30	0.45	0.07	13.96
ZOOPHIL	Zoophilia	20	31	Invalid – dropped													
PARATOTL	Total # of Paraphilias	25	51		1.08	1.00	1.63	0.49	29.78	2.60	.01						
147 Perpetrator Drug Involvement/Use and Related Crime Block																	
PERPDRUG	Known Drug User	25	52	Invalid – dropped													
PPOSSCHG	# Drug Poss. Arrests	45	69		0.60	1.40	0.51	0.95	112	-0.42	.68						
DRUGDIST	# Drug Dist. Arrests	45	69		0.22	0.60	2.90e ⁻²	0.17	48.61	-2.11	.04						
ETOHCHRG	# Alcohol Arrests	40	62		0.83	2.49	0.00	0.00	Invalid – dropped								
PHXETOH	Alcohol Abuse History	17	33	16.71							.0001	3.24	0.16	0.31	6.18	20.00	0.05
PHXDRUGS	Drug Abuse History	23	43	Invalid – dropped													
DOMESTIC	# Domestic Arrests	39	62		0.41	0.99	0.63	1.35	99	0.88	.38						

Table 1 (Continued)

Perpetrator Under-Influence (Stimulants, Hallucinogens, Opioids) Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
PCOCAINE	Cocaine/Crack Cocaine	15	13														
PAMPHETA	Amphetamine	11	3														
PMETHAMP	Methamphetamine	11	3														
PAMPVARS	Amphetamine Variants	11	3														
PLSD	Lysergic Acid	11	3														
PMARIJUA	Marijuana	13	3														
PPCP	Phencyclidine	11	3														
PCODEINE	Codeine	11	3														
PHEROIN	Heroin	10	3														
PMORPHIN	Morphine	11	3														

Perpetrator Under-Influence (Depressants and Schedule I – IV Drugs) Block

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
PETOH	Ethanol (Alcohol)	24	10														
PBARBITU	Barbituates/Sedatives	10	2														
PBENZODI	Benzodiazepines	11	2														
PSCHEDL1	Other Schedule I Drugs	11	2														
149 POTHRSCH	Schedule II – IV Drugs	9	2														
ONDRUGS	On Any Drugs	30	17														
Perpetrator Characteristics/Psychopathy Block																	
PCLFACT1	PCL-R Factor 1 Score	28	17		10.20	3.21	13.27	2.83	43	3.15	.003	Dropped					
PCLFACT2	PCL-R Factor 2 Score	18	11		11.77	4.09	13.96	2.91	27	1.55	.13						
PCLTOTAL	PCL-R Total Score	24	15		25.16	6.82	30.63	5.41	37	2.63	.01						
EVADEPD	Tries to Avoid Police	34	58	0.42							.84						
ADDRNUM	# of Prior Addresses	42	71		2.40	1.67	3.82	2.45	108.73	3.64	.0001						
POORWORK	Poor Work History	19	48									Invalid – dropped					

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
NUMJOBS	# of Previous Jobs	24	59		1.50	1.14	2.71	2.13	81	2.63	.01						
JUVNSOFF	Juvenile Delinquency	10	11	Invalid – dropped													
PROPERTY	# Prior Property Crimes	45	69		3.02	4.00	6.17	11.01	112	1.84	.07						
Perpetrator Precrime Arousal, Actions, and Offense Planning Block																	
AROUSAL	Aroused Before Crime	20	19	5.13							.02	0.59	3.17	1.68	0.32	0.19	5.33
ASKFORSX	Solicited Victim for Sex	40	63	12.14							.0001	0.72	5.12	1.39	0.20	0.14	7.10
MOTIVE	Homicide Motive	49	73	8.18							.004						
MOTV_SX	Parameter – Sexual Motive											0.83	4.97	1.21	0.20	0.17	5.98
MOTV_NSX	Parameter – Nonsexual Motive											4.97	0.83	0.20	1.21	5.98	0.17
AUTOUSE	Used Vehicle in Crime	49	66	0.23							.87						
AUTODES2	Description of Vehicle	22	26	Invalid – dropped													
VEHICON2	Condition of Vehicle	19	20	Invalid – retained													
STALKING	Cruised for Victim	48	63	1.66							.20						

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Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
KNOWAREA	Used Preselected Area	36	48	6.42							.02	0.58	1.83	1.71	0.55	0.32	3.14
OTHRPLAN	Other Planning Actions	35	55	0.01							.91						
PRIORACT	Violence in Prior Week	39	61	Invalid – dropped													

Situational-Interactional Factors Form

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Precipitating Stressors Block

CNFLTOT2	Other Female Conflict	23	44	Invalid – retained													
CNFLTML2	Prior Male Conflict	24	44	Invalid – dropped													
CNFLTPA2	Parental Conflict	25	54	5.16							.02	0.25	1.34	3.94	0.75	0.19	5.28
PTNRPRO2	Marital/Partner Conflict	28	46	1.22							.27	Retained					
WORKPRO2	Employment Problems	21	47	2.50							.11						
CLDBIRT2	Childbirth	28	54	Invalid – dropped													
PHINJUR2	Physical Injury	26	54	Invalid – dropped													
SIGDEATH	Death of Loved One	28	54	Invalid – dropped													

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)		
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial	
LEGALPR2	Legal Problems	28	52	Invalid – dropped														
MONEYPR2	Financial Problems	22	51	Invalid – dropped														
OTRSTRE2	Other Life Stressors	27	41	1.14												.29		
STRESSOR	Total # of Stressors	37	41		1.73	1.22	2.39	1.36	76	2.25	.03							
152 Perpetrator-Victim Argument Block																		
CNFLTVI2	Conflict With Victim	37	45	3.41												.07	Retained	
ARGUCNDM	Condom Use Argument	27	44	Invalid – dropped														
ARGUDEAL	Sexual Service Dispute	28	42	0.00												1.00		
PRIORARG	Prior Victim Argument	41	52	Invalid – dropped														
ARGUMENT	Any Conflict/Argument	36	41	1.35												.25		
Drug Involvement/Effects on Interaction Block																		
BOTHDRUG	Both Ingesting Drugs	23	30	1.28												.26		

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
BOTHETOH	Both Ingesting Alcohol	17	26	Invalid – dropped													
BOTHDRU2	Ingesting Any Drugs	21	29	2.34							.13						
PHYSIOSE	Physical Side Effects	23	33	Invalid – dropped													
VDRUGSE	Side Effects on Victim	12	11	Invalid – dropped													
153 PDRUGSE	Side Effects on Killer	15	17	7.94							.01	Dropped					
DRUGSE2	Any Drug Side Effects	19	11	Invalid – dropped													
SEXABUSE	Killed in Crack House	48	69	Invalid – dropped													
Factors Influencing Perpetrator Escalation Block																	
RESIST	Victim Resistance	24	31	2.42							.12						
COMPLNCE	Victim Compliance	20	28	Invalid – dropped													
NFANTASY	Fantasy \square Victim Acts	20	22	Invalid – dropped													
YFANTASY	Fantasy = Victim Acts	20	22	Invalid – dropped													
SEXROLE	Violated Sex Stereotype	23	33	Invalid – dropped													

Table 1 (Continued)

Perpetrator Sadistic Fantasy Life Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
SADFNTSY	Has Sadistic Fantasies	18	39	12.29							.0001	0.31	2.76	3.23	0.36	0.11	8.91
TROPHIES	Trophies/Souvenirs	36	54	0.83							.36						
PORNOGRA	Has/Uses Pornography	20	44	0.01							.92						
154 MASTRBTN	Masturbates to Fantasy	9	10	Invalid – dropped													
BONDAGE	Has Bondage Materials	30	47	Invalid – dropped													
HASWEAPN	Has/Uses Weapon	49	72	3.29							.07	Retained					
PARAPHER	Uses Police Equipment	35	57	1.93							.16						
TORTKITS	Has/Uses Torture Kit	37	52	Invalid – dropped													
SADIACTS	Sadistic Acts to Others	32	67	0.08							.78						
FNTSYACT	Fantasy-Based Crimes	37	74	Invalid – retained													
KINKYSEX	Asks for Kinky Sex	19	44	1.66							.20	Retained					

Table 1 (Continued)

Crime Scene Variables Form

Cause of Death and Major Trauma Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ^2 (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
CAUSEDT2	Cause of Death	49	74	22.35							.0001						
CAU_STAB	Parameter – Stab/Cutting Wounds											3.69	0.63	0.27	1.59	5.89	0.17
CAU_STR1	Parameter – Manual Strangulation											0.35	1.35	2.87	0.74	0.26	3.88
CAU_OTH	Parameter – Other Cause/Undetermined Death											0.25	1.15	3.97	0.87	0.22	4.55
MTRHEAD	Major Trauma to Head	47	66	Invalid – dropped													
MTRARMS	Major Trauma to Arms	47	64	5.13							.02	2.53	0.81	0.40	1.23	3.11	0.32
MTRTORSO	Major Trauma to Torso	47	64	0.23							.63						
MTRBREAS	Major Trauma to Breast	47	63	0.53							.47						
MTRBUTTK	Trauma to Buttocks	47	64	Invalid – dropped													
MTRGENIT	Trauma to Genitalia	47	64	Invalid – dropped													
MTRANUS	Major Trauma to Anus	47	64	Invalid – dropped													

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Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
MTROTHER	Trauma to Other Areas	48	63	Invalid – dropped													
Secondary Injuries and Overkill Block																	
OVERKILL	Overkill on Body	43	66	3.17							.08	Retained					
156 GUNSHOT	# of Gunshot Wounds	49	71		0.41	1.34	0.27	0.98	118	-.066	.51						
STABWNDS	# of Stab Wounds	49	70		6.00	11.10	1.11	4.01	56.83	-2.95	.01						
CUTWNDS	# of Cutting Wounds	47	68		2.60	5.27	0.79	2.68	62.54	-2.16	.04						
BLUNTFCE	# Blunt Force Wounds	46	60		2.43	6.11	0.80	3.58	68.23	-1.61	.11	Retained					
BURNS	# of Burns	47	69		0.00	0.00	7.25e ⁻²	0.60	Invalid – dropped								
BITES	# of Bites	49	72		2.04e ⁻²	0.14	0.00	0.00	Invalid – dropped								
OTRWOUND	# of Other Wounds	47	71		0.15	0.72	0.25	0.86	116	0.69	.49						
NUMWOUND	Secondary Injury Total	46	63		12.09	15.37	3.52	6.91	58.32	-3.53	.001						

Table 1 (Continued)

Sexual Activities and Evidence Block

Variable Name	Variable Description	Single Victims (<u>n</u> = 49)	Serial Victims (<u>n</u> = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>				Yes	No	Yes	No	Single	Serial
ORALPONV	Oral Sex on Victim	34	47	Invalid – dropped													
VAGNRAPE	Has Vaginal Sex	39	60	4.83							.03	0.68	1.70	1.48	0.59	0.40	2.52
ANALRAPE	Has Anal Sex	37	53	8.52							.004	0.39	1.59	2.59	0.63	0.24	4.13
ORALVONP	Oral Sex on Offender	32	53	2.32							.13						
VOTRACTS	Other Sex Acts	34	46	Invalid – dropped													
SEMENVAG	Semen Found – Vagina	31	54	2.52							.11						
SEMENANU	Semen Found – Anus	32	51	3.19							.07						
SEMENMOU	Semen Found – Mouth	32	50	Invalid – dropped													
SEMENPR2	Semen Found in Body	31	54	3.65							.06	Retained					
OTHREJAC	Ejaculation at Scene	37	42	Invalid – dropped													

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Table 1 (Continued)

Perpetrator Assaults On/Activities With Victim's Body Block:

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
RESTRAIN	Restrained Victim	48	71	1.33							.25						
TOOKTIE2	Took/Found Restraints	47	70	Invalid – dropped													
EXCESTI2	Excessive Restraints	46	67	Invalid – dropped													
SODOMIZE	Foreign Object Sodomy	41	64	Invalid – dropped													
OBJFOUND	Foreign Object Found	38	62	Invalid – dropped													
VTORTURE	Victim Tortured	45	67	Invalid – dropped													
MUTILATE	Body Mutilated	47	73	0.61							.44						
PASSLTVI	Any Assault/Restraint	45	71	0.84							.36	Retained					
SEXWBODY	Engaged in Necrophilia	37	40	10.52							.001	0.20	1.53	4.93	0.65	0.13	7.56
CANNIBAL	Cannibalism of Body	49	70	Invalid – dropped													
OTRASSLT	Other Unusual Assaults	49	72	0.13							.72						
DEPERSON	Depersonalized Victim	46	62	1.36							.24						

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Table 1 (Continued)

Perpetrator Attempts to Delay Identification/Destroy Evidence Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi^2(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
DELAYID	Disfigured Body	46	74	Invalid – dropped													
HEAD	Head Removed	49	73	Invalid – dropped													
BREAST	Breast(s) Removed	49	73	Invalid – dropped													
GENITAL	Genitalia Removed	49	73	Invalid – dropped													
EXTREMIT	Extremities Removed	49	73	Invalid – dropped													
INTORGAN	Victim Disemboweled	49	73	Invalid – dropped													
OTRPARTS	Other Parts Removed	49	73	Invalid – dropped													
BODYPRT2	Any Dismemberment	49	73	1.76							.18	Retained					
TAMPARED	Tampers With Evidence	49	73	0.81							.37						
Perpetrator Activities at Crime Scene Block																	
RITUALS	Performed Rituals	49	67	2.26							.13						

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	χ (1)	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
CARVING	Wrote/Carved on Body	49	74	Invalid – dropped													
DRAWING	Wrote/Carved at Scene	49	74	Invalid – dropped													
Perpetrator's Use of Weapons Block																	
160	FIREARM	Firearm	48	73	0.07						.80						
	CUTWEAPN	Stab/Cutting Weapon	49	72	6.17						.01	1.74	0.68	0.58	1.48	2.57	0.39
	BLUDGEON	Bludgeon	49	70	0.26						.61						
	LIGATURE	Ligature	47	73	0.29						.59						
	HANDFEET	Hands and/or Feet	49	68	5.83						.02	0.68	1.72	1.47	0.58	0.40	2.53
	OTRWEAPN	Other Weapon	48	71	Invalid – dropped												
	WEAPNTY2	Brings/Finds Weapon	35	40	Invalid – dropped												
	WEAPNLO2	Murder Weapon Found	37	41	0.28						.87						

Table 1 (Continued)

Body Disposal Form

Body Recovery Site Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi^2(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>				Yes	No	Yes	No	Single	Serial
DESCRBRS	General Body Location	49	72	0.37							.83						
NEIGHBRS	Disposal Neighborhood	49	73	Invalid – dropped													
BRSPLAC2	Body Disposal Location	49	74	4.92							.30						
BRSAREA2	Found in a Vice Area	49	74	2.79							.10						
Murder Site Block																	
BRSSAME	Murder = Disposal Site	49	73	5.22							.02	1.41	0.58	0.71	1.73	2.43	0.41
DESCRMS	Murder Site Area	49	62	Invalid – dropped													
NEIGHMS	Murder Neighborhood	48	61	Invalid – dropped													
MSPLACE2	Murder Site Location	48	61	0.53							.91						
MSAREA2	Killed in a Vice Area	48	61	5.54							.02	0.42	1.30	2.36	0.77	0.33	3.08

Table 1 (Continued)

Initial Encounter Site Block

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
ICSSAME	Encounter = Death Site	44	63	1.86							.17						
DESCRICS	Encounter Site Area	42	66	Invalid – dropped													
NEIGHICS	Neighborhood of Meet	42	62	Invalid – dropped													
162 ICSPLAC2	Encounter Site Location	43	65	16.79							.002						
ICS_RES	Parameter – Residence, Hotel, Motel											4.54	0.71	0.09	1.42	6.43	0.16
ICS_ST	Parameter – Public Street											1.13	0.96	0.88	1.05	1.19	0.84
ICS_VICE	Parameter – Established Vice Area											0.53	1.26	1.90	0.79	0.42	2.40
ICS_NBHD	Parameter – Neighborhood/Nonstroll Area											0.25	1.17	3.97	0.86	0.22	4.64
ICSAREA2	Met Killer in Vice Area	43	65	13.12							.0001	0.52	2.27	1.94	0.44	0.23	4.41
Initial Encounter Site Block																	
LKLSAME	Last Location = Meet	41	47	0.22							.64						

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
DESCRLKL	Last Location Area	46	68	Invalid – dropped													
NEIGHLK2	Type of Area Last Seen	43	66	2.83							.09						
LKLPLAC2	Last Known Location	46	67	19.35							.001						
LKL_RES	Parameter - Residence, Hotel, Motel											3.95	0.66	0.25	1.53	6.03	0.17
163 LKL_ST	Parameter – Public Street											0.81	1.07	1.24	0.93	0.76	1.32
LKL_VICE	Parameter – Established Vice Area											0.44	1.29	2.26	0.78	0.34	2.91
LKL_NBHD	Parameter – Neighborhood/Nonstroll Area											0.27	1.14	3.78	0.87	0.23	4.32
LKL_OTH	Parameter – Other Areas											1.46	0.94	0.69	1.07	1.55	0.64
LKLAREA2	Last Seen in Vice Area	46	68	14.58							.0001	0.44	2.03	2.29	0.49	0.22	4.65
Body Disposal/Crime Scene Behavior Description Block																	
MOVEBODY	Offender Moved Body	49	73	5.49							.02	0.59	1.45	1.70	0.69	0.41	2.46
LEFTBODY	How Body Was Left	47	74	2.65							.27	Retained					
HOWFOUN2	How Body Was Found	49	74	4.50							.11	Retained					

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
HOWDRES2	How Body Dressed	49	72	4.48							.03	0.78	1.89	1.27	0.53	0.42	2.41
DISPCLTH	How Clothing Found	45	68	Invalid – dropped													
BODYRITU	Body Used in Ritual	48	68	Invalid – dropped													
TIMEBFO2	With Body Predisposal	12	26	Invalid – retained													
164 TIMEDRNG	With Body at Disposal	43	57	21.53							.0001	0.45	3.58	2.22	0.28	0.13	7.93
Perpetrator's Postcrime Behavior Description Block																	
TOOKCLTH	Took & Kept Clothing	43	61	1.91							.17						
KEEPITEM	Took & Kept Items	42	52	2.16							.14						
PERPTAKE	Took Clothing/Items	45	51	4.19							.04	0.51	1.32	1.96	0.76	0.39	2.58
RETURNED	Revisited Disposal Site	41	41	27.26							.0001	0.08	2.29	12.00	0.44	0.04	27.53
SAWDISCV	Saw Body's Discovery	42	33	0.47							.49						
INDIRECT	Indirectly Joined Case	41	54	2.56							.11						
DIRECTLY	Directly Joined Case	44	55	1.33							.25						

Table 1 (Continued)

Variable Name	Variable Description	Single Victims (n = 49)	Serial Victims (n = 74)	$\chi^2(1)$	Single Victims		Serial Victims		df	t	p	Single Victim Risk Estimate Cohorts		Serial Victim Risk Estimate Cohorts		Odds Ratios (Yes/No)	
					M	SD	M	SD				Yes	No	Yes	No	Single	Serial
JOINCASE	Any Case Participation	42	55	7.45							.01	0.51	1.64	1.97	0.61	0.31	3.23
Geographic Profiling Variables Block																	
	KNOWSICS	Knows Encounter Site	41	71	Invalid – dropped												
165	KNOWSMS	Knows Murder Site	38	58	Invalid – dropped												
	KNOWSBDS	Knows Disposal Site	37	65	Invalid – dropped												
	PRESICS	Perp Home - Meet Site	32	56	2.52	4.45	4.62	6.33	86	1.66	.10						
	PRESBDS	Perp Home - Dump Site	38	60	3.25	5.37	4.59	6.33	96	1.08	.28						
	VRESBDS	Vict Home - Dump Site	38	56	3.99	6.32	5.00	6.84	92	0.72	.47						
	ICSBDSDX	Meet Site – Dump Site	33	57	2.26	5.86	4.21	5.69	88	1.55	.13						

Note. All nonsignificant variables were removed from subsequent statistical analyses unless otherwise noted. Some nonsignificant variables were retained due to their approaching significance or to further examine interesting patterns in the data. Some significant variables were removed due to low cell counts or due to their incorporation into summary variables.

Table 1 (Continued)

^aAll Single Victim Risk Estimate Cohorts are calculated, as appropriate, with respect to positive endorsements of each variable, parameter, or "cohort," in the block. For instance, using the single victim group as the reference group, the relative risk for single victims working alone as compared with serial victims would be the proportion of single victims working alone to the proportion of serial victims working alone.

^bAll Serial Victim Risk Estimate Cohorts are calculated, as appropriate, with respect to positive endorsements of each variable, parameter, or "cohort," in the block. For instance, using the serial victim group as the reference group, the relative risk for serial perpetrators participating in the investigation as compared with single perpetrators would be the proportion of serial perpetrators joining the case to the proportion of single perpetrators joining the case.

^cAn Odds Ratio is the ratio of the probability that an event occurs to the probability that the event does not occur (SPSS, 1999, p. 79). Quite simply, it is a ratio of relative risks. Using either the single or the serial victim group as a reference group, the odds ratios have been calculated in this fashion (i.e., "Yes" Victim Risk Estimate / "No" Victim Risk Estimate).

and continuous variables comprising the conceptual blocks, utilizing parametric (t-tests) and nonparametric statistics (Chi-square crosstabulations) as appropriate. In preparation for subsequent multivariate data analyses, these comparisons were performed to narrow the large variable pool into a more parsimonious and meaningful one by eliminating those variables that did not differ significantly between the single and serial prostitute homicide victim groups (i.e., in relation to variable CATEGORY). The experimenter carefully reviewed each set of conceptual block output. In addition to obtaining statistical nonsignificance, variables were dropped from future analyses if they had a low overall number of "valid" cases (i.e., had few cases endorsed or otherwise containing data) or if the cells in the Chi-square crosstabulations were empty or had expected counts of less than 5 cases (T. E. Costigan, personal communication, May 2, 2001).

Conversely, some nonsignificant dichotomous and categorical variables, and others that approached significance in their relationship to the homicide victim classification variable, were retained. This occurred when it was determined that these variables had sufficient numbers of cases across categories while demonstrating interesting trends or patterns in the data, namely, through a comparison of case percentages in each cell. Moreover, some nonsignificant items were retained when it was believed that their status may have been attributable to low power in light of the study's small overall sample of cases (T. E. Costigan, personal communication, May 2, 2001). Another guiding principle used to select bivariate variables that were not significant or that were otherwise "on the fence" was their conceptual (i.e., being a salient, well-documented phenomenon in the research literature) and investigative (i.e., being of most practical use to the FBI and other law enforcement agencies) importance to the study's

overall goals of classifying serial and single victim group membership and to formulate empirically-based "profiles" of both the perpetrators and their victims.

Additionally, following the initial bivariate calculations, variables with crosstabulations containing empty cells or cells with less than expected frequencies were recoded, and their categories combined, to make them more meaningful and valid. Those variables evidencing interesting trends, but containing a low number of valid cases, were collapsed into novel summary variables. For instance, the individual items SEMENVAG, SEMENANU, and SEMENMOU, reflecting the presence of semen evidence in the victim's vagina, anus, and mouth, respectively, were combined into the new variable SEMENPR2, which was endorsed if semen was recovered in any of the aforementioned areas. The experimenter then reexamined the recoded and collapsed variable crosstabulations, making a determination whether to include or exclude them from the multivariate analyses using the principles outlined above. The remaining variables were then grouped into a novel, condensed set of 12 conceptual blocks, utilizing, again, existing theory and logical sense as explained above. These groupings were ultimately incorporated into the multivariate (logistic regression) data analyses by the statistical consultant.

Likelihood for Experiment-wise Error:

In light of the study's exploratory nature, as well as the low overall sample size ($N = 123$ victims), no statistical correction procedures (e.g., Bonferroni correction) were applied to control for experiment-wise error. Given the low sample size, it was believed that utilizing such an adjustment would increase the Type II error rate, precluding significant relationships. In short, without this correction the bivariate comparisons were

more powerful (T. E. Costigan, personal communication, July 16, 2001). Further, it was hoped that grouping the variables into conceptual blocks would reduce the likelihood of Type II error. However, the multiple comparisons made on each conceptual block without statistical correction increased the likelihood for spurious significant findings, or Type I error (Kazdin, 1992). It follows that the study's results must be interpreted with caution. The data analyses should be conducted on a larger sample to replicate the exploratory findings (T. E. Costigan, personal communication, July 16, 2001).

Results of the Bivariate Analyses:

As previously mentioned, the results of the bivariate analyses, including variables retained and removed, are presented in Table 1. In light of the many variables examined, and to facilitate comprehension, the findings are organized by PHQ (Dudek & Nezu, 2000) Form and related conceptual blocks with references made to expected trends listed in the "Study Aims" section. Chi-square crosstabulations with greater than 10% of their cells containing frequencies less than five cases or with empty cells will be considered invalid (T. E. Costigan, personal communication, May 14, 2001) and the results of their significance tests are not reported below. However, interesting patterns in the data across cells will be noted where appropriate.

To further ease understanding, "subsample" will refer to the respective subjects comprising the single or serial prostitute homicide groups, respectively, for the variable being examined. In light of the large number of variables pertaining to the single and serial homicide offenders, references will also be made to homicide perpetrator or offender "subsamples" or "groups," although the frequencies of these smaller groupings

will, of course, be synonymous with their corresponding homicide victim subsamples.

Victim Characteristics Form:

Victim Demographics Block:

There were no significant differences in age between the single ($M = 28.33$ years, $SD = 7.19$) and serial ($M = 30.19$ years, $SD = 7.92$) prostitute homicide victims, $t(119) = 1.32$, $p = .19$. This variable (VICTAGE) was dropped from the analysis. Despite recoding to increase cell sizes, the Chi-square for the variable examining the victim's racial background (VICRAC2) was not interpreted due to 1 cell having an expected count of less than 5 cases. African-American/Black victims comprised the highest number of overall victims (69 of 123 victims or 56.0%), followed by Caucasian victims (44 of 123 victims or 36.0%) and "Other" victims (e.g., Hispanic, Native-American, and other racial groups) (10 of 123 victims or 8.0%). The serial group had higher percentages of African-American/Black (44 of 69 victims or 63.8%) and Caucasian (27 of 44 victims or 61.4%) victims than the single group (25 of 69 African-American/Black victims or 36.2% and 17 of 44 Caucasian victims or 38.6%, respectively), although these might be attributable to sample size differences ($n = 49$ single victims and $n = 74$ serial victims, respectively). Interestingly, because the single victim group contained a higher percentage (7 of 10 victims or 70.0%) of victims of "Other" races (e.g., Hispanic, Native-American, and other racial groups) than the serial victim group (3 of 10 victims or 30.0%), the victim race variable was retained for analysis.

The single and serial victim groups did not differ significantly with respect to homelessness, although 41.4% of cases with data (46 of 111 victims) were classified as being homeless, $\chi^2(1, n = 111) = 0.93$, $p = .12$. Homeless victims comprised nearly half

of the serial group's subsample (29 of 64 serial cases or 45.3%) while nonhomeless victims comprised the majority of the single group's subsample (30 of 47 single victims or 63.8%). The serial group contained the highest percentage of homeless victims (29 of 46 victims or 63.0%) while the single group had a lesser percentage (17 of 46 victims or 37.0%). This variable (VHOMLESS) was removed from the analysis. With regard to social support, the Chi-square could not be interpreted due to 2 cells having expected counts of less than 5 cases (including 1 empty cell). Overwhelmingly, however, virtually all victims in the sample (34 of 34 single victims or 100% and 53 of 54 serial victims or 98.1%) were found to have existing forms of social support. This variable (SOCSUPPT) was also removed from the analysis.

Again, because 2 cells had expected cell counts less than 5 cases (including 1 empty cell), the Chi-square assessing for prior history of victimization across victim groups was invalid. This variable (HXOFVICT) was omitted due to its low sample size ($n = 27$ of 123 cases or 22.0%), but, of these subjects, 26 of 27 (96.3%) had been previously victimized. Serial victims were found to have been prostituting for a significantly longer time ($M = 91.58$ months, $SD = 77.44$) than the single victims ($M = 55.95$ months, $SD = 45.07$), $t(55.92) = 2.21$, $p = .03$. However, this variable (VICETIME) was dropped from the multivariate analyses due to its small subsample sizes, representing only 44.9% (22 of 49 victims) of the single group cases and 48.6% (36 of 74 victims) of the serial group cases.

Victim Risk Variables Block:

The Chi-square for the prostitution risk variable assessing victims' willingness to service any customers (SERVEANY) could not be interpreted because 2 cells had

expected counts of less than 5 cases (including one empty cell). Overall, a majority of the victims serviced any customer (37 of 41 victims or 90.2%) as compared with those who were more cautious (4 of 41 victims or 9.8%). A greater percentage of serial prostitute homicide victims were found to service any customers and to neglect screening them (26 of 37 cases or 70.3%) than the single prostitute homicide victims (11 of 37 cases or 29.7%). All victims in the serial subsample ($n = 26$) were found to demonstrate this risk behavior. Conversely, those prostitutes who were found to be more selective in screening customers were entirely single victims, although this subsample was quite small ($n = 4$ victims). Despite its low overall sample size (41 of 123 cases or 33.3%) this variable (SERVEANY) was retained in light of the aforementioned trends as well as its conceptual importance as a victim risk factor.

Serial victims were also significantly more likely to work alone while prostituting (20 of 29 cases or 69.0%) than single victims (9 of 29 cases or 31.0%), $\chi^2(1, n = 43) = 4.29, p = .04$. Despite a small subsample size ($n = 14$ victims), single victims were significantly more likely not to be working alone (9 of 14 cases or 64.3%) than were the serial victims (5 of 14 cases or 35.7%). Within the serial victim subsample, most of the victims engaged in this risk behavior (20 of 25 victims or 80.0%), while in the single group subsample equal numbers of victims (9 of 18 victims or 50.0%) either worked alone or did not, respectively. Among the single prostitute victims working alone, the odds ratio (OR) reveals that they were only 0.25 times as likely as serial victims to be working alone. Conversely, the serial prostitute victims were 4 times as likely to be working alone as the single victims (OR = 4.00). This risk variable (VWKALONE) was retained for analysis.

The Chi-square assessing for victim group differences in relation to working while under the influence of substances either at the time of death or by history was not interpreted due to 2 cells having expected counts of less than 5 cases. In each group, however, a majority of victims were found to work while intoxicated (26 of 30 single victims or 86.7% and 43 of 46 serial victims or 93.5%, respectively). Among all victims who worked while under the influence of drugs, the serial victims comprised the highest percentage of these cases (43 of 69 victims or 62.3%) as compared to the single victims (26 of 69 victims or 37.7%). In light of these interesting trends, and due to its conceptual importance vis-à-vis contributing to overall victim risk, this variable (DRUGWORK) was retained for the multivariate analyses.

With regard to robbing customers, the Chi-square could not be interpreted due to 2 cells having expected frequencies less than 5 cases (including 1 empty cell). Of the reported cases, almost all victims (32 of 34 cases or 94.1%) engaged in this risk behavior. This variable (ROBJOHN) was dropped from the analysis. Similarly, the Chi-square examining the risk behavior of not using a condom during sexual encounters (NOCONDOM) was not interpreted due to 3 cells having expected counts of less than 5 cases. Again, however, a majority of the reported cases (14 of 20 victims or 70.0%) engaged in this risk behavior. This variable was omitted from the analysis.

Those risk variables addressing forgoing condom use (FORGOUSE), not checking a customer's hygiene (NOCHECK), and engaging in risky sexual encounters either due to the presence of a sexually transmitted disease or due to neglecting medical checkups (RISKYSEX) were all omitted due to small sample sizes and because Chi-square crosstabulations could not be calculated due to constants (i.e., empty cells across

categories).

Because the 4 cells of the Chi-square contained expected counts of less than 5 cases, the risk variable pertaining to the performance of any sexual acts for drugs or for any price to obtain money to buy drugs (ANYSEX) was omitted from the analysis. Similarly, the Chi-square assessing for group differences in relation to the risk behavior known as "freaking" (i.e., engaging in perverse sexual acts in a crack house or drug den and being concurrently abused and humiliated by customers) contained 2 cells with expected counts of less than 5 cases and was not interpreted. However, only 1 positive occurrence of this behavior was recorded (in the serial group) within the overall sample of 37 cases. This variable (FREAKING) was omitted from the analysis.

When the occurrences of the aforementioned risk variables were summed to produce a corresponding risk level (i.e., the number of risk behavior variables endorsed), no significant difference was found between the single victim group ($M = 2.19$ risk behaviors, $SD = 1.49$) and the serial victim group ($M = 2.47$ risk behaviors, $SD = 1.53$), $t(81) = 0.83$, $p = .41$. This variable (RISKLEVL) was dropped from the analysis.

Victim Drug Use (Presence/Nonpresence) Block:

The serial prostitute homicide victims had a significantly higher percentage of cases involving the presence of cocaine in the blood (34 of 51 cases or 66.7%) than the single prostitute homicide victims (17 of 51 cases or 33.3%), $\chi^2(1, n = 69) = 4.26$, $p = .04$. Conversely, despite small cell totals, the single victims had a significantly proportion of cases where cocaine was not present (11 of 18 cases or 61.1%) than the serial victims (7 of 18 cases or 38.9%). Overall, almost $\frac{3}{4}$ of the entire sample evidenced postmortem cocaine levels in the blood (51 of 69 victims or 73.9%). Within the serial victim

subsample, the majority of victims had cocaine detected in their blood (34 of 41 cases or 82.9%), although this pattern was also evident, to a lesser extent, in the single victim subsample (17 of 28 cases or 60.7%). The odds ratios reveal that single prostitute victims were only 0.32 times as likely to have cocaine in their blood as the serial prostitute victims. Conversely, the serial prostitute victims were over 3 times as likely to have cocaine detected in their blood than the single victims (OR = 3.14). This variable (COCAPRES) was retained in the analysis.

Similarly, the serial victim group evidenced a higher percentage of cases with the cocaine metabolite benzoylecgonine (BE) present in the blood (31 of 48 cases or 64.6%) than did the single victim group (17 of 48 cases or 35.4%), although this difference was not significantly different, $\chi^2(1, n = 62) = 3.71, p = .054$. Overall, the majority of victims had postmortem BE in their blood (48 of 62 victims or 77.4%). Within the serial prostitute victim group subsample, the majority of the victims had postmortem BE present in their blood (31 of 36 cases or 86.1%). This pattern, although attenuated, was also demonstrated in the single victim group (17 of 26 cases or 65.4%). Conversely, single prostitute homicide victims had a greater proportion of cases without BZ detected in the blood (9 of 14 cases or 64.3%) than the serial prostitute homicide victims (5 of 14 cases or 35.7%). This latter finding must be interpreted cautiously in light of the low cell frequencies. Because it approached significance, the cocaine metabolite variable (BZEPRES) was retained for the multivariate analyses.

In an attempt to obtain a more meaningful measure of cocaine intoxication, the variables (COCAPRES) and (BZEPRES) were combined into the summary variable (COCABZPR2), coded positively if either of the aforementioned component variables

were, themselves, endorsed. No significant difference was found between the single and serial prostitute victim groups in relation to (COCAPRES2), $\chi^2(1, n = 70) = 3.09, p = .08$. The serial group evidenced a higher proportion of victims who had cocaine and/or BE in their blood (37 of 57 cases or 64.9%) than the single group (20 of 57 victims or 35.1%). Despite small cell sizes, the single victim group had a higher percentage of victims who did not have cocaine and/or cocaine metabolite in their blood (8 of 13 cases or 61.5%) than the serial victims (5 of 13 cases or 38.5%). Because it approached statistical significance, this variable (COCABZPR2) was retained for the multivariate analyses.

There was no significant difference found between the single and serial victim groups in relation to the presence of ethanol (alcohol) in postmortem blood, $\chi^2(1, n = 61) = 0.97, p = .33$. Amongst those victims who had ethanol detected in the blood, the serial group evidenced a higher percentage of cases (19 of 29 victims or 65.5%) than did the single group (10 of 29 cases or 34.5%). Within the single group subsample, there was a trend toward a greater percentage of victims not having postmortem ethanol present in the blood (15 of 25 cases or 60.0%) than having this drug present in the blood (10 of 25 cases or 40.0%). Despite this variable's (ETOHPRES) nonsignificance and low overall sample size ($n = 61$ of 123 cases or 49.6%), it was retained in the analysis due to the aforementioned patterns in the data and its conceptual importance with regard to increasing victim risk through impairment.

Because two cells in each of their respective Chi-square crosstabulations contained less than 5 expected cases, the results for variables indicating the presence of morphine (MORPPRES), codeine (CODEPRES), other illicit Schedule I drugs (SCH1PRES), and other illicit Schedule II, III, and IV drugs (OSCHPRES) were not

reported. In light of low cell frequencies, these variables were collapsed into a new dichotomous variable (OTHRPRE2), endorsed for the presence of any of these drugs, and no significant differences were found, $\chi^2(1, n = 33) = 0.17, p = .90$. Both groups had equal percentages of victims who had morphine, codeine, and/or Schedule I, II, III, or IV drugs present in their blood (6 of 12 victims or 50%, respectively). A similar pattern was demonstrated across the higher number of victims ($n = 21$) who did not have these drugs present in the blood (10 of 21 single victims or 47.6% and 11 of 21 serial victims or 52.4%, respectively). This collapsed variable (OTHRPRE2) and its component variables (MORPPRES, CODEPRES, SCH1PRES, and OSCHPRES) were omitted from the multivariate analyses.

Victim Toxicology (Blood Drug Levels) Block:

No significant differences were found between the single and serial prostitute homicide victim groups with respect to any of the quantitative, postmortem drug blood levels examined. Specifically, the single ($M = 0.39$ milligrams per liter (mg/L), $SD = 1.06$) and serial ($M = 0.31$ milligrams per liter (mg/L), $SD = 0.32$) prostitute homicide victim groups did not have significantly different postmortem cocaine levels detected in the blood, $t(56) = -0.37, p = .71$. However, upon inspecting the data, an extreme value (cocaine blood level = 5.37 mg/L) - exceeding all others in the entire sample - was discovered that was skewing the mean of the single victim group. This high level, which equaled that found in cocaine overdose fatalities (Baselt, 2000), was deleted, and the mean comparisons were recalculated. The results, although believed to be more accurate, were nonsignificant, $t(55) = 1.72, p = .09$. However, the removal of this extreme value resulted in a marked switch in data trends, with serial victims having a higher mean

cocaine blood level (\underline{M} = 0.31 milligrams per liter (mg/L), \underline{SD} = 0.32) than the single victims (\underline{M} = 0.18 milligrams per liter (mg/L), \underline{SD} = 0.24).

Next, the measured postmortem blood levels of cocaine metabolite (benzoylecgonine; BE) did not significantly differ between the single (\underline{M} = 1.05 mg/L, \underline{SD} = 4.26) and serial (\underline{M} = 2.00 mg/L, \underline{SD} = 1.56) prostitute homicide victims, $t(53) = 0.16$, $p = .87$. There were also no significant differences in postmortem ethanol (alcohol) levels amongst the single (\underline{M} = 38.96 milligrams per deciliter (mg/dL), \underline{SD} = 68.45) and serial (\underline{M} = 38.17 milligrams per deciliter (mg/dL), \underline{SD} = 71.29) prostitute homicide victims, $t(51) = -0.04$, $p = .97$. Further, the victim groups did not differ significantly with respect to postmortem morphine levels (single group \underline{M} = $4.07e^{-2}$ milligrams per liter (mg/L), \underline{SD} = 0.12 and serial group \underline{M} = $6.98e^{-2}$ milligrams per liter (mg/L), \underline{SD} = 0.39), $t(50) = 0.33$, $p = .75$. However, this finding is negligible since only 5 cases in the total victim sample had blood morphine levels greater than zero. Because the serial victim group had no cases with reported postmortem codeine levels, a bivariate comparison with the single victim group, which only contained a single case with a codeine level greater than zero, was not possible. All of the toxicology variables (COCALEVL, BZELEVL, ETOHLEVL, MORPLEVL, and CODELEVL) were omitted from the multivariate analyses.

Prostitution Work and Comorbid Drug Use Influence Block:

Single and serial prostitute victims significantly differed with respect to sexual services provided, $\chi^2(1, n = 85) = 4.99$, $p = .03$. Serial victims offered sex-for-drugs more frequently (31 of 41 victims or 75.6%) than single victims (10 of 41 victims or 24.4%). Both groups had equal percentages of victims who offered solely sex-for-money (21 of

44 victims or 47.7% in the single group and 23 of 44 cases or 52.3% in the serial group, respectively). Within their subsample, the single victims more often offered sex-for-money (21 of 31 cases or 67.7%) than sex-for-drugs (10 of 31 cases or 32.3%).

Conversely, the serial subsample had a higher percentage of victims who offered sex-for-drugs (31 of 54 cases or 57.4%) than sex-for money (23 of 54 cases or 42.6%). The odds ratios for offering sex-for-drugs reveal that serial victims were almost 3 times as likely to engage in this behavior (OR = 2.83) as single victims. Conversely, single prostitute victims were only 0.35 times as likely to offer sex-for-drugs as the serial victims. This recoded variable (SEXSRVC2) was retained in the analysis.

The Chi-square examining the victims' principal motivations for engaging in prostitution could not be interpreted because 1 cell contained an expected count of less than 5 cases. The serial group evidenced a higher percentage of victims who were engaged in prostitution principally to support their cocaine/crack cocaine addiction (38 of 59 victims or 64.4%) than the single group (21 of 59 victims or 35.6%). The single victim group had a higher percentage of victims (7 of 11 victims or 63.6%) who had "other" principal motivations (e.g., support of a drug addiction other than cocaine, economic reasons, or other factors) than the serial group (4 of 11 victims or 36.4%). This pattern must be interpreted with caution due to the low cell frequencies, however. Both groups overwhelmingly were involved in prostitution to support a cocaine addiction (21 of 28 single victims or 75.0% and 38 of 42 serial victims or 90.5%, respectively). It is noteworthy that of the 70 victims in the sample, 59 of them, or 84.3%, were involved in prostitution principally to support a cocaine addiction. This recoded variable (VICTMOT2) was dropped from the analysis.

Because 1 cell contained an expected frequency of less than 5 cases, the Chi-square assessing for group differences in relation to their principal work setting could not be interpreted. The serial victims did have a higher percentage of victims who worked in street/stroll areas (39 of 49 cases or 79.6%) and in neighborhood/nonstroll areas (27 of 41 cases or 65.9%) than did the single victims (10 of 49 victims or 20.4% in street/stroll areas and 14 of 41 cases or 34.1% in neighborhood/nonstroll areas, respectively). Each group had an equal number of victims ($n = 5$) prostituting in "other" work settings (e.g., crack house/drug den, hotel/motel, escort arrangement, or other locations). Within the subsamples, the serial group evidenced a slightly higher percentage of victims working in street/stroll areas (39 of 71 victims or 54.9%) than neighborhood/nonstroll areas (27 of 71 victims or 38.0%). The single victim subsample demonstrated the opposite pattern, with more victims working in neighborhood/nonstroll areas (14 of 29 cases or 48.3%) and fewer working in street/stroll areas (10 of 29 victims or 34.5%). This collapsed variable (WKSETTN2) was dropped from the analysis.

With regard to working in a high crime area, the Chi-square crosstabulation was not interpreted since 2 cells had expected counts of less than 5 cases. In both groups the majority of victims worked in high crime areas (12 of 14 single victims or 85.7% and 50 of 51 serial victims or 98.0%, respectively). Although a higher percentage of serial victims worked in high crime areas (50 of 62 cases or 80.6%) than single victims (12 of 62 cases or 19.4%), there were many cases with missing data for this criterion in the single group. This variable (CRIMAREA) was dropped from the analysis.

The serial prostitute homicide group had a higher percentage of victims (16 of 20 victims or 80.0%) who worked without personal security measures (e.g., having a pimp

or other prostitutes to observe sexual encounters) than the single prostitute homicide group (4 of 20 cases or 20.0%), closely approaching significance, $\chi^2(1, n = 45) = 3.80, p = .051$. Within the single group, the majority of victims (12 of 16 cases or 75.0%) worked with security measures rather than without them (4 of 16 cases or 25.0%). This variable (PERSECUR) was retained in the analysis.

The single and serial prostitute victims differed significantly in relation to their principal sexual encounter location, $\chi^2(2, n = 78) = 7.98, p = .02$. Serial victims more frequently had sexual encounters in cars (15 of 20 cases or 75.0%) and in isolated areas (25 of 30 cases or 83.3%) than the single victims (5 of 20 single victims or 25.0% met customers in cars and 5 of 30 single victims or 16.7% met customers in isolated areas, respectively). Both groups had equal numbers of victims ($n = 14$ victims) who met customers in "Other" areas (e.g., crack house/drug den, apartment/residence, hotel/motel, prearranged location, or other area), although the majority of single cases were in this category (14 of 24 cases or 58.3%). Within the serial group, the highest percentage of victims met their customers in isolated areas (25 of 54 victims or 46.3%). This recoded variable (SEXPLAC2) was retained in the analysis.

The variable (SEXPLAC2) was dummy-coded into a series of parameters that were each examined in relation to the single and serial prostitute homicide victim groups. The Chi-square crosstabulation and odds ratio pertaining to the category "in cars" (parameter SXPL_CAR) were not significant, $\chi^2(1, n = 78) = 0.42, p = .52$. However, because the overall Chi-square for variable (SEXPLAC2) was significant - and because the parameter's nonsignificance was likely attributable to changes in variability pursuant to dummy coding - the odds ratio in this case (and in other such instances) will be

reported (T. E. Costigan, personal communication, May 31, 2001). Specifically, the odds ratio suggests that serial victims were almost 1 ½ times as likely (OR = 1.46) to engage in sexual encounters in vehicles as single victims, who, themselves, were only 0.68 times as likely as the serial victims to use vehicles for sex acts.

Next, the Chi-square and odds ratio corresponding to the category “having sex in isolated areas” (parameter SXPL_ISO) were statistically significant, $\chi^2(1, n = 78) = 4.55$, $p = .03$. Among the victims in each subsample who engaged in sexual activities in isolated areas, the serial victims had a higher proportion of cases (25 of 54 serial cases or 46.3%) than the single victims (5 of 24 single cases or 20.8%). However, the single victim subsample had a higher percentage of victims that did not engage in sexual encounters in isolated areas (19 of 24 single cases or 79.2%) than the serial victim subsample (29 of 54 serial cases or 53.7%). The corresponding odds ratio reveals that serial prostitute victims were over 3 times more likely (OR = 3.28) than single prostitute victims to engage in sexual encounters in isolated areas. Conversely, the single victims were less than 1/3 as likely (OR = 0.31) as the serial victims to engage in sex acts with customers in isolated locations.

Further, the Chi-square and odds ratio corresponding to the category “having sex in other areas” (e.g., crack house/drug den, apartment/residence, hotel/motel, prearranged location, or other areas), represented by the parameter (SXPL_OTH), were statistically significant, $\chi^2(1, n = 78) = 7.58$, $p = .01$. Within the subsamples, the single victims evidenced a greater percentage of cases involving sexual encounters in other areas (14 of 24 single cases or 58.3%) than the serial victims (14 of 54 serial cases or 25.9%). However, the serial subsample had a higher percentage of cases not involving sexual

encounters in other areas (40 of 54 serial cases or 74.1%) than the single subsample (10 of 24 single cases or 41.7%). The corresponding odds ratio suggests that single victims were 4 times more likely (OR = 4.00) than the serial victims to have sexual encounters in other areas. Conversely, the serial prostitute victims were only $\frac{1}{4}$ as likely (OR = 0.25) as the single victims to service customers in other areas.

The Chi-square assessing for differences across victim groups with regard to poor hygiene at the time of death could not be analyzed due to 2 cells having expected counts of less than 5 cases. Among those few victims who did demonstrate poor personal hygiene, the serial victims had a higher percentage of cases (7 of 8 cases or 87.5%) than the single victims (1 case or 12.5%). However, the majority of victims did not demonstrate poor hygiene (18 of 33 single victims or 54.5% and 15 of 33 serial victims or 45.5%, respectively). This variable (VHYGIENE) was removed from the analysis.

The serial victims did incur a higher average number of prior vice-related criminal arrests or charges ($\underline{M} = 7.07$ arrests/charges, $\underline{SD} = 10.20$) than the single victims ($\underline{M} = 4.60$ arrests/charges, $\underline{SD} = 11.28$) although this result was not significantly different, $t(73) = 0.98$, $p = .33$. The victim groups also did not differ significantly with respect to the number of prior drug and/or drug paraphernalia possession arrests or charges (Single Victim Group $\underline{M} = 1.03$ arrests/charges, $\underline{SD} = 2.97$ and Serial Victim Group $\underline{M} = 1.43$ arrests/charges, $\underline{SD} = 2.12$), $t(69) = 0.65$, $p = .52$. Further, the victim groups did not evidence a significant difference in relation to the number of prior drug distribution arrests or charges (Single Victim Group $\underline{M} = 0.32$ arrests/charges, $\underline{SD} = 0.82$ and Serial Victim Group $\underline{M} = 0.18$ arrests/charges, $\underline{SD} = 0.56$), $t(65) = -0.85$, $p = .40$. However, in the latter instance there were only 5 reported cases in each group having one or more

prior distribution arrests or charges. The variables representing numbers of prior vice arrests/charges (PVICECHG), drug and/or paraphernalia possession arrests/charges (PPOSSCHG), and drug distribution arrests/charges (PDISTCHG) were all omitted from the multivariate analyses.

Perpetrator Characteristics Form:

The reader is reminded that – with the exception of the variables included in the “Perpetrator Characteristics/Psychopathy Block” – the remaining variables to be described in this and other PHQ (Dudek & Nezu, 2000) Forms that involve serial offenders have been calculated using the entire serial victim sample. As such, although 26 offenders were responsible for the deaths of 74 serial prostitute victims, 74 serial “offenders” will be utilized in calculations. This makes conceptual sense when considering each crime as a mutually exclusive event in time that may be examined individually as well as contrasted with other victims in the series.

Perpetrator Demographics Block:

There was no significant difference in age between the single ($M = 32.57$ years, $SD = 8.86$) and serial ($M = 34.69$ years, $SD = 9.21$) homicide offenders, $t(121) = 1.27$, $p = .21$. This variable (PERPAGE) was dropped from the analysis. The Chi-square crosstabulation with regard to the perpetrators’ racial backgrounds, despite recoding, was not interpreted due to 1 cell having an expected count of less than 5 cases. Within each subsample, African-American/Black (22 of 49 single cases or 44.9% and 36 of 74 serial cases or 48.6%, respectively) and Caucasian (23 of 49 single cases or 46.9% and 30 of 74 serial cases or 40.5%, respectively) perpetrators comprised the majority of cases in nearly equal proportions. There was a higher percentage of serial perpetrators (8 of 12 cases or

66.7%) in the "Other" racial category (i.e., Hispanic and other races) than single perpetrators (4 of 12 cases or 33.3%), although the cell totals were small. This variable (PERPRAC2) was omitted from the analysis.

The serial victim group had a significantly greater percentage of homicides that were intraracial in nature (60 of 92 cases or 65.2%) than the single victim group (32 of 92 cases or 34.8%), $\chi^2(1, n = 123) = 3.89, p = .05$. Conversely, the single homicides were significantly more likely to involve perpetrators and victims of different racial backgrounds (17 of 31 cases or 54.8%) than the serial homicides (14 of 31 cases or 45.2%). Within the serial victim subsample, the majority of cases were intraracial in nature (60 of 74 cases or 81.1%) as compared with those that were not intraracial (14 of 74 cases or 18.9%). On the other hand, the single victim subsample had a greater proportion of cases involving different perpetrator and victim races (17 of 49 cases or 34.7%), although the majority of cases were intraracial (32 of 49 cases or 65.3%). The odds ratios suggest that serial homicides were over twice as likely (OR = 2.28) to involve victims and perpetrators of the same race as single homicides which, themselves, were only 0.44 times as likely as the serial homicides to be intraracial in nature.

The Chi-square assessing for perpetrator differences in marital status between groups, after recoding, had 1 cell with an expected count of less than 5 cases and, as such, was not analyzed. Within the single victim subsample, the perpetrators were most frequently "Single, living with others" (17 of 32 cases or 53.1%). The serial offenders had nearly equal frequencies in the categories "Married/common law wife" (16 of 64 cases or 25%), "Single, living with others" (20 of 64 cases or 31.2%), and "Single, living alone" (23 of 64 cases or 35.9%). Between groups, there was a greater percentage of

serial offenders in the "Married/common law wife" (16 of 22 cases or 72.7%) and "Single, living alone" (23 of 28 cases or 82.1%) categories than single offenders (6 of 22 cases or 27.3% in the "Married/common law wife" and 5 of 28 cases or 17.9% in the "Single, living alone" categories, respectively). Essentially equal percentages of single and serial perpetrators were found in the "Single, living with others" (17 of 37 single cases or 45.9% and 20 of 37 serial cases or 54.1%, respectively) and "Separated" (4 of 9 single cases or 44.4% and 5 of 9 serial cases or 55.6%, respectively) categories. This variable (MASTATU2) was omitted from the analysis.

There were no significant differences between the single and serial offenders with regard to homelessness, $\chi^2(1, n = 108) = 2.35, p = .13$. Serial offenders had a higher percentage of those classified as homeless (21 of 28 cases or 75.0%) than did the single offenders (7 of 28 cases or 25.0%). Within the single group, the majority of perpetrators were not homeless (33 of 40 cases or 82.5%) as compared with those who were homeless (7 of 40 cases or 17.5%). However, within the serial group this pattern was also demonstrated to a lesser degree (47 of 68 cases or 69.1% of serial perpetrators were not homeless), although a higher percentage of these offenders were homeless (21 of 68 cases or 30.9%). This variable (PHOMLESS) was dropped from the analysis.

The Chi-square assessing for differences amongst perpetrator occupations across victim groups - despite being recoded several times to make it more meaningful - contained 2 cells with expected frequencies less than 5 cases and was not interpreted. There were interesting patterns in the data, however. Within the single group, the majority of offenders (17 of 35 cases or 48.6%) had "Unskilled" occupations (e.g., laborer, janitor, piecework, etc.) In the serial group, the "Skilled" (e.g., security guard,

military, electrician, plumber, etc.) and "Unskilled" occupational categories contained nearly equal numbers of cases (25 of 67 cases or 37.3% were "Skilled" and 32 of 67 cases or 47.8% were "Unskilled," respectively). Of those offenders classified as "Unemployed" at the time of the homicide, the highest percentage was in the single group (9 of 14 cases or 64.3%) versus the serial group (5 of 14 cases or 35.7%), although cell totals were small.

The serial offenders had a greater percentage of cases in both "Skilled" (25 of 31 cases or 80.6%) and "Unskilled" (32 of 49 cases or 65.3%) categories than the single offenders (6 of 31 cases or 19.4% were "Skilled" and 17 of 49 cases or 34.7% were "Unskilled," respectively). It is notable that only 8 of 102 perpetrators, or 7.8% of the total sample, were involved in "Drug trafficking/other criminal activity/pimping." In this category, serial offenders had a higher percentage of cases (5 of 8 cases or 62.5%) than the single offenders (3 of 8 cases or 37.5%), although this result is likely attributable to the serial group's larger sample size. This variable (PERPJOB3) was removed from the analysis.

The Chi-square examining differences between single and serial offenders with regard to being travelers or tourists at the time of committing their homicides contained 2 cells with expected counts of less than 5 cases. As such, statistical significance could not be ascertained and the variable (TRAVELER) was dropped from the analysis. However, of those perpetrators who were travelers or tourists in the victim's area, most were in the single offender group (4 of 5 cases or 80.0%) as compared to the serial offender group (1 of 5 cases or 20.0%). In each subsample, the overwhelming majority of offenders were not travelers or tourists (43 of 47 or 91.5% of the single offenders and 72 of 73 or 98.6%

of the serial offenders, respectively).

Perpetrator Vice Involvement/Interest Block:

The single and serial homicide perpetrators did not differ significantly with respect to number of prior arrests or charges (Single perpetrator $\underline{M} = 0.33$ arrests/charges, $\underline{SD} = 1.00$ and Serial perpetrator $\underline{M} = 0.24$ arrests/charges, $\underline{SD} = 0.94$, respectively, $t(113) = -0.49$, $p = .62$), although the total number of cases having positive vice arrest histories was small ($\underline{n} = 11$). Interestingly, very few offenders in either sample had a vice arrest history (6 of 45 cases or 13.3% of the single offenders and 5 of 70 cases or 7.1% of the serial offenders, respectively). In the total sample, 104 of 115 cases, or 90.4% of the homicide offenders, had no vice arrest history. This variable (PVICECHG) was removed from the analysis.

With regard to the length of time spent soliciting prostitutes over time – calculated by approximating the number of months between the offender's first vice arrest date (month and year) and the victim's date of death (month and year) - single offenders engaged in this activity over a longer period ($\underline{M} = 138.86$ months, $\underline{SD} = 78.21$) than the serial offenders ($\underline{M} = 47.73$ months, $\underline{SD} = 30.64$), $t(7.19) = -2.94$, $p = .02$. However, this finding, based on a total sample size of 18 offenders (the 11 offenders included under PVICECHG above, along with supplemental vice activity data added for 7 offenders), must be interpreted with caution. This variable (SLCTTIME) was omitted from the analysis in light of its low overall sample size ($\underline{n} = 18$ offenders).

The respective Chi-square crosstabulations for variables assessing whether the perpetrator frequented known prostitution stroll areas (FRQSTROL), nonstroll/neighborhood areas (FRQNSTR), or crack houses/drug dens (FREQCRAK)

were all invalid, having 1 cell each that had an estimated count of less than 5 cases. One interesting pattern was noted in the latter variable, with serial offenders visiting crack houses/drug dens for sex more frequently than single offenders (8 of 9 cases or 88.9% of serial offenders and 1 of 9 cases or 11.1% of single offenders, respectively), although the cell frequencies were small. In an attempt to enhance meaning, the aforementioned variables were collapsed into a new variable (FREQVICE), which was endorsed if the offender frequented any or all of the various vice areas. This Chi-square could not be interpreted as 2 cells had expected counts of less than 5 cases. The patterns in the data revealed that both offender groups overwhelmingly frequented one or more of the three aforementioned vice area types (17 of 18 single offenders or 94.4% and 69 of 70 serial offenders or 98.6%). The collapsed variable (FREQVICE) and its component variables (FRQSTROL, FRQNSTRL, and FREQCRAK) were all omitted from the subsequent multivariate analyses.

The Chi-square examining the relationship between the victim and perpetrator could not be interpreted because 2 cells had expected frequencies of less than 5 cases. In the "Stranger" and "Knew each other/acquainted" relationship categories, serial offenders had a higher percentage of cases (23 of 38 cases or 60.5% in the "Stranger" category and 28 of 51 cases or 54.9% in the "Knew each other/acquainted" category, respectively) than the single offenders (15 of 38 cases or 39.5% in the "Stranger" category and 23 of 51 cases or 45.1% in the "Knew each other/acquainted" category, respectively). However, these differences may be attributable to the higher number of cases in the serial group. Within the single offender subsample, the highest percentage of perpetrators were in the "Knew each other/acquainted" relationship category (23 of 39 cases or 59.0%) while serial

offenders had a slightly higher percentage in the "Stranger" (28 of 51 cases or 54.9%) category than the "Knew each other/acquainted" category (23 of 51 cases or 45.1%). This variable (RELATION) was removed from the analysis.

There were no significant differences between the single and serial homicide offenders in regard to being regular customers of the victim, $\chi^2(1, n = 69) = 1.05, p = .31$. The cell patterns indicate that the serial offender group had a higher percentage of regular customers (16 of 26 cases or 61.5%) than the single offender group (10 of 26 cases or 38.5%). Within the single group subsample, most offenders were not regular customers (22 of 32 cases or 68.8%), although the serial group subsample evidenced a similar pattern (21 of 37 cases or 56.8%). This variable (REGCUSTM) was dropped from the analysis.

The Chi-square examining differences between offender groups with regard to seeing other prostitutes during solicitation visits could not be interpreted because 2 cells contained expected counts of less than 5 cases (including 1 empty cell). Serial offenders exclusively solicited other prostitutes (71 of 71 cases or 100.0%), although this was not surprising as this variable (OTRPROST) was coded positive if they had killed other prostitute victims. Within the single perpetrator subsample, a majority solicited other prostitutes (16 of 18 cases or 88.9%) while a small percentage (2 of 18 cases or 11.1%) did not. This variable was dropped from the analysis.

With regard to engaging in violent, aggressive, and/or abusive acts against other prostitutes, the corresponding Chi-square was invalid due to 2 cells having expected cell counts less than 5 cases. However, serial offenders demonstrated a higher degree of acting out (70 of 84 cases or 83.3%) than single offenders (14 of 84 cases or 16.7%). It

must be stated that, as above, this variable (ACTNGOUT) was positively endorsed for all serial offenders who killed multiple prostitutes. Interestingly, despite low cell frequencies, single offenders demonstrated a higher degree of not previously acting-out (5 of 6 cases or 83.3%) than the serial offenders (1 of 6 cases or 16.7%). This variable was removed from the analysis.

Perpetrator Sex Offender Risk Variables Block:

Serial prostitute homicide offenders had a significantly higher number of prior adult sexual offense arrests or charges ($M = 1.25$ offenses, $SD = 1.56$) than single prostitute homicide offenders ($M = 0.66$, $SD = 1.16$), $t(106.01) = 2.25$, $p = .03$. Similarly, the serial offenders had a significantly higher number of prior child sex offense arrests or charges ($M = 0.73$ offenses, $SD = 1.42$) than the single offenders ($M = 0.23$ offenses, $SD = 1.56$), $t(90.91) = 3.73$, $p = .0001$. To enhance meaning in light of the “partial” numbers of victims noted above, as well as the sample size, these adult (PADLTSEX) and child (PCHLDSEX) sex offense variables were collapsed into a new summary variable (TOTALSEX), encompassing the respective offender’s total number of prior adult and child sex offenses. The serial perpetrators had a significantly higher number of prior sex offenses ($M = 1.97$ offenses, $SD = 1.66$) than the single offenders ($M = 1.00$ offenses, $SD = 1.41$), $t(104) = 3.14$, $p = .002$. The summary variable (TOTALSEX) was retained for the multivariate analyses while the component adult (PADLTSEX) and child (PCHLDSEX) sex offense variables were removed.

The Chi-square assessing for the presence of male child sex offense victims between offender groups could not be interpreted because 2 cells contained expected counts of less than 5 cases (including 1 empty cell). Interestingly, of those few offenders

who had violated male children, all were serial offenders (8 of 8 cases or 100.0%). This variable (MALEVICT) was omitted from the analysis. Similarly, the Chi-square examining for the presence of a juvenile sex offending history between perpetrator groups was invalid due to all cells having expected frequencies less than 5 cases (including 1 empty cell). However, of the few offenders with a known juvenile sex offending history, all were serial offenders (5 of 5 cases or 100%). Conversely, all of the single offender subsample ($n = 4$) did not have a juvenile sex offending history and, as compared to the serial group cell total (1 of 5 cases or 20.0%), had the highest percentage of cases in this category (4 of 5 single cases or 80.0%). Again, these patterns must be viewed tentatively as they are based upon an extremely small sample size. This variable (HXJUVSEX) was dropped from the analysis.

Not surprisingly, the serial offenders had a significantly higher number of sexual offense victims ($M = 1.91$ victims, $SD = 1.65$) than the single offenders ($M = 1.02$ victims, $SD = 1.42$), $t(97) = 2.82$, $p = .01$. This variable (NUMVICTS) was retained in the analysis. Additionally, the serial perpetrators were significantly more likely (15 of 18 cases or 83.3%) to have both adult and child sex offense victims than were the single perpetrators (3 of 18 cases or 16.7%), $\chi^2(1, n = 90) = 5.55$, $p = .02$. Within the single perpetrator subsample, almost all did not have adult and child sex offense victims (34 of 37 cases or 91.9%) while only a few did (3 of 37 cases or 8.1%). The odds ratios indicate that serial offenders were approximately 4.5 times as likely ($OR = 4.47$) to have both adult and child sex offense victims as the single offenders. Conversely, the single perpetrators were only 0.22 times as likely as the serial perpetrators to have sex offense victims across the age span. This variable (VICTTYPE) was retained in the analysis.

Serial homicide offenders had a significantly greater number of sexual offenses involving stranger victims (23 of 28 cases or 82.1%) than the single homicide offenders (5 of 28 cases or 17.9%), $\chi^2(1, n = 67) = 12.67, p = .0001$. Conversely, single offenders were significantly more likely not to have sexual offenses involving strangers (24 of 39 cases or 61.5%) than serial offenders (15 of 39 cases or 38.5%). Within the single offender subsample, a markedly higher number of perpetrators did not have stranger sex offense victims (24 of 29 cases or 82.8%) as compared to those who did (5 of 29 cases or 17.2%). Within the serial perpetrator subsample, more offenders had stranger sex offense victims (23 of 38 cases or 60.5%) than those who did not (15 of 38 cases or 39.5%). The odds ratios indicate that single offenders were only 0.14 times as likely to have stranger sex offense victims as serial offenders. On the other hand, serial murderers were more than 7 times as likely ($OR = 7.36$) to have stranger sex offense victims than single murderers. This variable (STRANGER) was retained in the analysis.

The serial prostitute murderers had committed a significantly higher number of different types of sexual offenses (i.e., adult, child, and/or paraphilia-related sex offenses) than the single prostitute murderers (Serial Offender Group: $M = 1.09$ sex offense types, $SD = 0.60$ and Single Offender Group: $M = 0.57$ sex offense types, $SD = 0.66$), $t(85.34) = 4.22, p = .0001$. This variable (SOTYPES) was retained in the analysis.

No significant differences were found between the single and serial offenders with respect to number of prior nonsexual offense arrests or charges, although both groups demonstrated high numbers of crimes (Serial Offender Group: $M = 11.03$ nonsex offenses, $SD = 17.56$ and Single Offender Group: $M = 9.47$ nonsex offenses, $SD = 12.56$), $t(114) = 0.52, p = .60$. This variable (NONSXCHG) was dropped from the

analysis. The two offender groups also did not significantly differ with respect to the number of prior violent offense arrests or charges (Serial Offender Group: $M = 3.16$ violent offenses, $SD = 6.02$ and Single Offender Group: $M = 3.11$ violent offenses, $SD = 4.02$), $t(114) = 0.05$, $p = .97$. It is noteworthy, however, that both offender groups demonstrated a significant history of prior violent acts. This variable (VIOLNCHG) was omitted from the analysis.

Perpetrator Paraphilic Interests Block:

The serial offenders had a significantly higher number of individuals (29 of 37 cases or 78.4%) who had pedophilic interests as compared to the single offenders (8 of 37 cases or 21.6%), $\chi^2(1, n = 83) = 11.56$, $p = .001$. Conversely, the single offenders were significantly more likely (27 of 46 cases or 58.7%) not to exhibit pedophilic interests than the serial offenders (19 of 46 cases or 41.3%). Within the single offender subsample, most offenders did not demonstrate interests suggestive of pedophilia (27 of 35 cases or 77.1%) while the opposite pattern was seen in the serial offender subsample, with more offenders exhibiting this paraphilic interest (29 of 48 cases or 60.4%). The odds ratios indicate that serial offenders were over 5 times more likely ($OR = 5.15$) than single offenders to have pedophilic interests. Conversely, the single perpetrators were only 0.19 times as likely to have these interests as compared to the serial perpetrators. This variable (PEDOPHIL), despite its significance, was not included individually in the multivariate analyses. Rather, as shall be explained, a paraphilia summary variable was incorporated in the analyses.

The Chi-square assessing for the presence of exhibitionism between the perpetrator groups could not be interpreted due to 2 cells having counts less than 5 cases

(including 1 empty cell). Of the 3 cases coded positive for this paraphilia, all were single offenders. This variable (EXHIBIT) was dropped from the analysis. Similarly, the presence of significant differences between offender groups for the paraphilia fetishism could not be assessed as the Chi-square contained 2 cells with expected frequencies less than 5 cases. Among the few cases coded positive for this paraphilia, 4 of 7 or 57.1% were in the single perpetrator group and 3 of 7 or 42.0% were in the serial offender group. This variable (FETISH) was omitted from the analysis. The Chi-square examining perpetrator group differences in relation to the paraphilia frotteurism was invalid due to 2 cases having expected frequencies less than 5 cases (including 1 empty cell). The one instance of frotteurism was reported in the serial offender group. This variable (FROTTEUR) was dropped from the analysis.

Serial and single offenders did not differ significantly with respect to exhibiting sadism, $\chi^2(1, n = 96) = 0.72, p = .40$. Of those perpetrators who did exhibit sadistic interests, serial offenders were more prevalent (15 of 22 cases or 68.2%) than single offenders (7 of 22 cases or 31.8%). This variable (SADISM) was removed from the analysis. The Chi-square pertaining to the paraphilia masochism could not be interpreted as 2 cells had expected counts of less than 5 cases (including 1 empty cell). Of the 3 cases coded positive for this paraphilic interest, all were in the serial offender group. This variable (MASOCHSM) was dropped from the analysis.

Similarly, the Chi-square examining the paraphilia transvestic fetishism was invalid due to 2 cells having expected frequencies less than 5 cases. The one offender exhibiting this interest was a single prostitute murderer. This variable (TRFETISH) was removed from the analysis. Similarly, no statistical comparison was made between the

single and serial offender groups with respect to voyeurism as the Chi-square contained 2 cells with expected counts of less than 5 cases. However, of those few offenders who did exhibit this paraphilic interest, the serial group had a higher percentage of cases (4 of 6 cases or 75.0%) than did the single group (2 of 6 cases or 25.0%). This variable (VOYEUR) was dropped from the analysis. No offenders exhibited the paraphilias telephone scatologia and zoophilia, making Chi-square crosstabulations impossible. These variables (TELESCAT and ZOOPHIL, respectively) were omitted from the subsequent multivariate analyses.

Serial murderers exhibited a significantly higher degree of necrophilic interests (26 of 29 cases or 89.7%) than the single murderers (3 of 29 cases or 10.3%), $\chi^2(1, n = 76) = 19.41, p = .0001$. Conversely, the single offenders were significantly less likely to have necrophilic interests (29 of 47 cases or 61.7%) than were the serial offenders (18 of 47 cases or 38.3%). Within the single offender subsample, the majority of perpetrators did not exhibit necrophilic interests (29 of 32 cases or 90.6%) as compared to those who did (3 of 32 cases or 9.4%). The opposite was true in the serial subsample, with a greater number of offenders exhibiting interests in necrophilia (26 of 44 cases or 59.1%) than those who did not (18 of 44 cases or 40.9%). The odds ratios reveal that serial offenders were nearly 14 times more likely (OR = 13.96) to have necrophilic interests than single offenders who, themselves, had a negligible likelihood of these interests (OR = 0.07) as compared to the serial offenders. Like the significant pedophilia variable (PEDOPHIL) above, this variable (NECROPHIL) was omitted individually from the multivariate analyses and was replaced by a summary variable.

In particular, it was believed that a paraphilia summary variable would - by

representing the calculated sum of all positively coded paraphilic interest variables – serve as a better index of perpetrator psychopathology because it encompassed all of the aforementioned paraphilias. As such, serial offenders were found to have a significantly higher number of paraphilic interests ($M = 1.63$ paraphilias, $SD = 0.49$) than the single offenders ($M = 1.08$ paraphilias, $SD = 1.00$), $t(29.78) = 2.60$, $p = .01$. This summary variable (PARATOTL) was retained for the multivariate analyses.

Perpetrator Drug Involvement/Use and Related Crime Block:

The Chi-square examining perpetrator group differences with respect to being a known or suspected drug user was not interpreted as 1 cell contained an expected count of less than 5 cases. Overall, the majority of perpetrators were known or suspected drug users (64 of 77 cases or 83.1%) rather than nonusers (13 of 77 cases or 16.9%). Serial offenders evidenced a higher percentage of known or suspected drug users (42 of 64 cases or 65.6%) than the single offenders (22 of 64 cases or 34.4%), although within both samples known or suspected drug users comprised the majority of cases (22 of 25 single offenders or 88.0% and 42 of 52 serial offenders or 80.8%, respectively). This variable (PERPDRUG) was dropped from the analysis.

The single and serial homicide offenders did not differ significantly in relation to the number of prior drug and/or paraphernalia possession arrests or charges (Single Offender Group: $M = 0.60$ drug/paraphernalia possession arrests/charges, $SD = 1.40$ and Serial Offender Group: $M = 0.51$ drug/paraphernalia possession arrests/charges, $SD = 0.95$), $t(112) = -0.42$, $p = .68$. This variable (PPOSSCHG) was removed from the analysis. Single murderers had a significantly greater number of prior drug distribution arrests or charges than the serial murderers (Single Offender Group: $M = 0.22$ drug

distribution arrests/charges, $SD = 0.60$ and Serial Offender Group: $M = 2.90e^{-2}$ drug distribution arrests/charges, $SD = 0.17$), $t(48.61) = -2.11$, $p = .04$. However, because only 8 offenders in the total sample ($N = 123$ offenders) had one or more offenses ($n = 6$ cases in the single group and $n = 2$ cases in the serial group), this difference must be interpreted with caution and is, at best, a tentative data pattern. This variable (DRUGDIST) was retained in the analysis.

No statistical comparison could be made between the offender groups with regard to prior alcohol-related arrests or charges, and this variable (ETOHCHRG) was dropped from the analysis. Specifically, the single group had documented alcohol-related offenses ($M = 0.83$ alcohol-related arrests/charges, $SD = 2.49$) while none of the serial offenders had any documented alcohol-related offenses. Single offenders were significantly more likely to have a history of alcohol abuse (15 of 24 cases or 62.5%) than serial offenders (9 of 24 cases or 37.5%), $\chi^2(1, n = 50) = 16.71$, $p = .0001$. Conversely, the serial offenders were significantly less likely to have a history of alcohol abuse (24 of 26 cases or 92.3%) than the single offenders (2 of 26 cases or 7.7%). The odds ratios indicate that single perpetrators were 20 times more likely to have a history of alcohol abuse than the serial perpetrators. Conversely, the serial murderers had a negligible likelihood ($OR = 0.05$) of having an alcohol abuse history as compared to the single murderers. This variable (PHXETOH) was retained for the multivariate analyses.

The Chi-square assessing for differences between perpetrator groups regarding a history of substance abuse other than alcohol could not be interpreted as 1 cell had an expected count of less than 5 cases. The serial offenders had a higher percentage of individuals with a substance abuse history (35 of 55 cases or 63.6%) than the single

offenders (20 of 55 cases or 36.4%), although within each subsample the majority of offenders were chronic substance abusers (35 of 43 serial offenders or 81.4% and 20 of 23 single offenders or 87.0%). This variable (PHXDRUGS) was omitted from the analysis. The single and serial offenders did not differ significantly in relation to the number of prior domestic violence arrests or charges (Single Offender Group: \underline{M} = 0.41 domestic violence arrests/charges, \underline{SD} = 0.99 and Serial Offender Group: \underline{M} = 0.63 domestic violence arrests/charges, \underline{SD} = 1.35), $t(99) = 0.88$, $p = .38$. This variable (DOMESTIC) was dropped from the analysis.

Perpetrator-Under-Influence (Stimulants, Hallucinogens, Opioids) Block:

The Chi-square examining perpetrator group differences with respect being under the influence of cocaine at the time of the homicide was invalid due to 2 cells having expected counts of less than 5 cases. The cell patterns reveal that essentially equal numbers of perpetrators in each group were ingesting cocaine at the time of the homicide (10 of 22 single offenders or 45.5% and 12 of 22 serial offenders or 54.5%, respectively), although the single perpetrators had a higher percentage of individuals who were not ingesting cocaine (5 of 6 cases or 83.3%) as compared to the serial perpetrators (1 of 6 cases or 16.7%). This variable (PCOCAINE) was removed from the analysis.

No Chi-square analyses could be performed on the following drugs in this block due to empty cells (i.e., no positive endorsements across groups): amphetamine, methamphetamine, amphetamine variants, lysergic acid diethylamide (LSD), phencyclidine (PCP), codeine, and morphine. Their corresponding variables: (PAMPHETA), (PMETHAMP), (PAMPVARS), (PLSD), (PPCP), (PCODEINE), and (PMORPHIN) were removed from the multivariate analyses. The Chi-squares assessing

for single and serial perpetrator differences in relation to being under the influence of marijuana and, separately, heroin, respectively, were invalid due to each containing 3 cells with expected counts of less than 5 cases. Of the few offenders who were under the influence of marijuana ($n = 4$) and, separately, heroin ($n = 1$) at the time of the crime, all were single offenders. These variables (PMARIJUA) and (PHEROIN) were removed from the analysis. As shall be explained, to increase meaning, all of the drug variables in this block were combined with those of the next block and then collapsed into a new variable.

Perpetrator-Under-Influence (Depressants and Schedules I – IV Drugs)

Block:

No differences could be assessed between the homicide offender groups with respect to being under the influence of alcohol at the time of the homicide. The corresponding Chi-square was invalid, containing 2 cells with expected counts of less than 5 cases (including 1 empty cell). Among those offenders who were under the influence of alcohol, the single murderer group had a higher percentage of cases (21 of 31 cases or 67.7%) than the serial murderer group (10 of 31 cases or 32.3%). However, the patterns within the subsamples reveal that most offenders were under the influence of alcohol at the time of the crime (21 of 24 single offenders or 87.5% and 10 of 10 serial offenders or 100.0%, respectively). This variable (PETOH) was omitted from the analysis.

Chi-squares for the following substances could not be computed due to multiple empty cells across groups: barbiturates, other Schedule I drugs, and other Schedule II, III, and IV drugs. Their corresponding variables (PBARBITU), (PSCHEDL1), and

(POTHRSCH) were removed from the analysis. Similarly, the Chi-square assessing perpetrator differences with respect to being under the influence of benzodiazepines was invalid due to 3 cells having expected counts of less than 5 cases (including 2 empty cells). The 2 offenders who were under the influence of these drugs at the time of the homicide were both single offenders. This variable (PBENZODI) was also deleted from the analysis.

All of the variables in this block were combined with those in the previous block and then collapsed into a new variable (ONDRUGS). It was hoped that a more meaningful assessment of perpetrator substance use at the time of the crime could be obtained by merging the many cells with low positive counts for the presence of the aforementioned drugs. This Chi-square could not be interpreted as 2 cells had expected counts of less than 5 cases (including 1 empty cell), attributable to most instances of this behavior being coded as missing data. Interestingly, the single group had a higher percentage of perpetrators under the influence of drugs (28 of 45 cases or 62.2%) than the serial group (17 of 45 cases or 37.8%), although within the perpetrator subsamples the majority of all offenders were under the influence of drugs (28 of 30 single offenders or 93.3% and 17 of 17 serial offenders or 100.0%, respectively). The variable (ONDRUGS) was removed from the analysis.

Perpetrator Characteristics/Psychopathy Block:

Serial murderers had a significantly higher Psychopathy Checklist-Revised (PCL-R; Hare, 1991c) Factor 1 Score than the single murderers (Serial Murderer Group: $M = 13.27$, $SD = 2.83$ and Single Murderer Group: $M = 10.29$, $SD = 3.21$), $t(43) = 3.15$, $p = .003$. This suggests that the serial murderers have more salient, psychopathic

interpersonal and affective characteristics, described by Hare (1991b) as the “selfish, callous, and remorseless use of others” (p. 38). Despite its significance, this variable (PCLFACT1) was removed from the multivariate analyses in light of its collinearity with the PCL-R Total Score, which, as an overall measure of psychopathy, encompassed the items comprising both Factors 1 and 2 and was included alone (K. Heilbrun, personal communication, May 7, 2001). Interestingly, no significant difference was found between the offender groups with respect to their PCL-R Factor 2 Score (Serial Perpetrator Group: $M = 13.96$, $SD = 2.91$ and Single Murderer Group: $M = 11.77$, $SD = 4.09$), $t(27) = 1.55$, $p = .13$. This finding indicates that both single and serial offenders had a similar “chronically unstable and antisocial lifestyle” also characterized by “social deviance” (p. 38). This variable (PCLFACT2) was omitted from the analysis.

However, the serial homicide offenders did have a significantly higher PCL-R Total Score than the single homicide offenders (Serial Offender Group: $M = 30.63$, $SD = 5.41$ and Single Offender Group: $M = 25.16$, $SD = 6.82$), $t(37) = 2.63$, $p = .01$. The single offenders just meet the diagnostic cutoff Total Score of 25 used in this study, as proposed by Wong (1984, as cited in Rice et al., 1992) for file-based PCL-R scoring, classifying them as psychopathic individuals. The serial offenders’ mean psychopathy rating of 30 exceeds this Total Score and, instead, equals the diagnostic cutoff score established by Hare (1991b) for use with the actual clinical administration of the instrument. This variable (PCLTOTAL) was retained in the analysis.

No significant differences were found between the single and serial homicide offenders with respect to changing addresses or moving to evade law enforcement detection, arrest, and/or pressure, $\chi^2(1, n = 92) = 0.04$, $p = .84$. Of those few offenders

who did relocate to avoid police detection, more were serial perpetrators (13 of 20 cases or 65.0%) than single perpetrators (7 of 20 cases or 35.0%). However, there were also more serial offenders who did not change addresses (45 of 72 cases or 62.5%) than single offenders (27 of 72 cases or 37.5%). These patterns may be attributable to the unbalanced single and serial perpetrator group subsample sizes ($n = 34$ single offenders and $n = 58$ serial offenders, respectively). This variable (EVADEPD) was dropped from the analysis. Serial offenders did evidence, however, a greater number of prior addresses in the five years prior to their arrests for prostitute murders than the single offenders (Serial Offender Group: $M = 3.82$ prior addresses, $SD = 2.45$ and Single Offender Group: $M = 2.40$ prior addresses, $SD = 1.67$), $t(108.73) = 3.64$, $p = .0001$. This variable (ADDRNUM) was retained in the analysis.

The Chi-square assessing for the presence of a poor work history across the offender groups could not be interpreted due to 1 cell having an expected count of less than 5 cases. The serial group had a higher percentage of perpetrators who demonstrated a poor work history (39 of 56 cases or 69.6%) than the single group (17 of 56 cases or 30.4%). However, there was also a greater proportion of serial murderers who did not demonstrate a poor work history (9 of 11 cases or 81.8%) than the single murderers (2 of 11 cases or 18.2%). Again, these data patterns may be an artifact of unbalanced perpetrator subsample sizes ($n = 19$ single offenders and $n = 48$ serial offenders, respectively). This variable (POORWORK) was omitted from the analysis. Seemingly bolstering the aforementioned poor work history pattern, the serial offenders had a significantly greater number of jobs in the four years prior to their arrest for prostitute homicide than the single offenders (Serial Offender Group: $M = 2.71$ jobs, $SD = 2.13$

and Single Offender Group: $M = 1.50$ jobs, $SD = 1.14$, $t(81) = 2.63$, $p = .01$. This variable (NUMJOBS) was retained in the analysis.

No Chi-square could be computed in relation to the presence or nonpresence of a juvenile nonsexual offense history across the homicide offender groups. Specifically, 2 cells had expected counts of less than 5 cases (including 1 empty cell). The serial offenders evidenced a higher percentage of individuals with a juvenile nonsex offense history (11 of 19 cases or 57.9%) than the single offenders (8 of 19 cases or 42.1%). Of the 2 offenders who did not have a documented juvenile nonsex offense history, both were single offenders. Within the serial offender subsample, all of the perpetrators ($n = 11$) had juvenile nonsexual offense histories. Conversely, within the single offender subsample most had a juvenile nonsex offense history (8 of 10 cases or 80.0%), although a lesser number (2 of 10 cases or 20.0%) did not have this history. This variable (JUVNSOFF) was deleted from the analysis.

The single and serial homicide perpetrators did not differ significantly in relation to the number of prior property offense arrests or charges they had incurred (e.g., auto theft, breaking-and-entering, burglary, larceny, etc.), $t(112) = 1.84$, $p = .07$. Interestingly, however, the serial offenders had committed, on the average, twice as many property offenses as the single offenders (Serial Perpetrator Group: $M = 6.17$ property offense arrests/charges, $SD = 11.01$ and Single Perpetrator Group: $M = 3.02$ property offense arrests/charges, $SD = 4.00$). This variable (PROPERTY), despite its nonsignificance, was included in the analysis in light of this interesting pattern in the data.

Perpetrator Precrime Arousal, Actions, and Offense Planning Block:

Serial offenders were more often in a positive state of arousal prior to committing

the homicide (16 of 26 offenders or 61.5%) than were the single offenders (10 of 26 cases or 38.5%), $\chi^2(1, n = 39) = 5.13, p = .02$. Conversely, single murderers were significantly less likely to be aroused prior to the crime (10 of 13 cases or 76.9%) than the serial murderers (3 of 13 cases or 23.1%). Within the perpetrator subsamples, the single offenders had an equal number of individuals who were and were not aroused ($n = 10$ offenders in each category or 50%), while most serial offenders were aroused (16 of 19 offenders or 84.2%) rather than not aroused (3 of 19 offenders or 15.8%). The odds ratios indicate that serial offenders were over 5 times as likely ($OR = 5.33$) than single offenders to be aroused prior to the homicide. Conversely, single murderers were less than two tenths as likely ($OR = 0.19$) to be aroused as compared to the serial murderers. This variable (AROUSAL) was retained in the analysis.

Serial offenders more frequently solicited the victim for sexual services prior to committing the homicide (59 of 86 cases or 68.6%) than the single offenders (27 of 86 cases or 31.4%), $\chi^2(1, n = 103) = 12.14, p = .0001$. However, within the offender subsamples, the majority of single (27 of 40 cases or 67.5%) and serial (59 of 63 cases or 93.7%) cases did solicit the victim for sex. Single perpetrators, in a significantly greater number of instances, did not approach the victim for sexual services prior to the homicide (13 of 17 cases or 76.5%) as compared to the serial perpetrators (4 of 17 cases or 23.5%), although these cell counts were low. The odds ratios indicate that serial offenders were 7 times more likely ($OR = 7.10$) than single offenders to solicit their victims for sexual services prior to the homicide than the single offenders. Conversely, the single perpetrators were only 0.14 times as likely as the serial offenders to solicit their victims for sex. This variable (ASKFORSX) was retained in the multivariate analyses.

Serial prostitute murderers more significantly demonstrated a sexual motive (70 of 109 cases or 64.2%) than the single prostitute murderers (39 of 109 cases or 35.8%), $\chi^2(1, n = 122) = 8.18, p = .004$. However, it must be noted that both offender group subsamples evidenced a majority of homicides that were sexual in nature (39 of 49 single homicides or 79.6% and 70 of 73 serial homicides or 95.9%, respectively). The odds ratios indicate that serial homicide offenders were nearly 6 times more likely (OR = 5.98) to have a sexual motive than the single homicide offenders who, themselves, were only 0.17 times as likely as the serial offenders to have a sexual motive. Interestingly, the single perpetrators had a significantly greater percentage of homicides with nonsexual motives (10 of 13 cases or 76.9%) than the serial perpetrators (3 of 13 cases or 23.1%), although these cell counts were also small. The odds ratios with regard to having a nonsexual motive show that single offenders were approximately 6 times more likely (OR = 5.98) than the serial offenders to have such a motive. Conversely, the serial murderers had less than 1/5 the likelihood (OR = 0.17) of having a nonsexual motive as compared to the single murderers. This variable (MOTIVE) was retained in the analysis.

No significant differences were found between the perpetrator groups with respect to using an automobile during the commission of the crime, $\chi^2(1, n = 115) = 0.27, p = .87$. Within the overall sample ($n = 115$), nearly equal percentages of offenders used (55 of 115 cases or 47.8%) and did not use (60 of 115 cases or 52.2%) vehicles. This similar pattern was repeated in each of the subsamples and will not be reported here. This variable (AUTOUSE) was omitted from the analysis. The Chi-square examining differences between offender groups with regard to the description of any vehicles used during the crime was invalid, with 2 cells having expected counts of less than 5 cases.

Serial offenders had a slightly larger percentage of cases in the "Older model" category (22 of 39 cases or 56.4%) than the single offenders (17 of 39 cases or 43.6%), although, within the perpetrator subsamples, the majority of offenders used "Older model" vehicles (17 of 22 single cases or 77.3% and 22 of 26 serial cases or 84.6%). Interestingly, few offenders in either group utilized "Newer/late model" vehicles (5 of 9 single offenders or 55.6% and 4 of 9 serial offenders or 44.4%, respectively). This variable (AUTODES2) was removed from the analysis.

No statistical comparison could be made between homicide offender groups with regard to the condition of any vehicle used in the commission of the homicide as the Chi-square had 2 cells with expected counts of less than 5 cases. Some interesting patterns were evident in the data, however. Specifically, single offenders had a higher percentage of cases in the "Poorly maintained" vehicle category (12 of 15 cases or 80.0%) than the serial offenders (3 of 15 cases or 20.0%). Within the single offender subsample, the "Poorly maintained" category was also predominant (12 of 20 cases or 60.0%). The serial offenders had a higher percentage of cases in the "Neither well-maintained nor poorly maintained" vehicle category (12 of 18 cases or 66.7%) than the single offenders (6 of 18 cases or 33.3%). Within the serial offender subsample, the majority of cases were found in this nondescript vehicle category (12 of 19 cases or 63.2%). Few offenders in either category drove "Well-maintained" vehicles (2 of 6 cases or 33.3% in the single group and 4 of 6 cases or 66.7% in the serial group, respectively). This variable (VEHICON2) was retained in light of these interesting data patterns.

No significant differences were found between the offender groups with regard to "cruising" for victims in a vehicle or otherwise stalking them by foot, $\chi^2(1, n = 111) =$

1.66, $p = .20$. A higher percentage of serial offenders (30 of 47 cases or 63.8%) cruised for victims than single offenders (17 of 47 cases or 36.2%). Nearly equal percentages of offenders did not cruise for victims (31 of 64 cases or 48.4% of single offenders and 33 of 64 cases or 51.6% of serial offenders). Within the single offender subsample, more perpetrators did not cruise for victims (31 of 48 cases or 64.6%) than cruised for victims (17 of 48 cases or 35.4%). An examination of the serial offender subsample revealed similar percentages of offenders cruising (30 of 63 cases or 47.6%) and not cruising (33 of 63 cases or 52.4%). This variable (STALKING) was removed from the analysis.

Serial murderers were significantly more likely to bring the prostitute victim to a preselected area (32 of 46 cases or 69.6%) than the single murderers (14 of 46 cases or 30.4%) $\chi^2(1, n = 84) = 6.41, p = .01$. Conversely, the single offenders were significantly less likely to bring the victim to a preselected area (22 of 38 cases or 57.9%) than the serial offenders (16 of 38 cases or 42.1%). These patterns were also replicated within the respective offender subsamples. Specifically, there were more serial perpetrators who brought their victim to a preselected area (32 of 48 cases or 66.7%) than who did not (16 of 48 cases or 33.3%). Similarly, more single perpetrators did not bring their victim to a preselected location (22 of 36 cases or 61.1%) than those who did (14 of 36 cases or 38.9%). The odds ratios reveal that serial offenders were over 3 times more likely (OR = 3.14) to bring their victims to a preselected area than the single offenders. Conversely, a given single offender was approximately 1/3 as likely (OR = 0.32) to bring his victim to a preselected area as a serial offender. This variable (KNOWAREA) was retained in the analysis.

There were no significant differences found between the single and serial offender

groups with respect to engaging in other planning behaviors (e.g., studied police procedures, created a torture kit, altered his vehicle to facilitate abduction, etc.), $\chi^2(1, n=90) = 0.01, p = .91$. Interestingly, the majority of offenders did not engage in planning (70 of 90 cases or 77.8%) as compared with those who engaged in this behavior (20 of 90 cases or 22.2%). The serial offender group evidenced a higher percentage of individuals engaging in planning behavior (12 of 20 cases or 60.0%) than did the single offender group (8 of 20 cases or 40.0%). Within the single offender subsample, a greater proportion of perpetrators did not engage in planning activities (27 of 35 cases or 77.1%) as compared to those that did engage in this behavior (8 of 35 cases or 22.9%). However, this same pattern was demonstrated in the serial offender subsample (43 of 55 cases or 78.2% did not engage in planning activities and 12 of 55 cases or 21.8% did engage in planning activities). This variable (OTHRPLAN) was dropped from the analysis.

The Chi-square examining differences between the single and serial murderers with regard to committing a criminal or violent offense in the week prior to the homicide was invalid due to 1 cell having an expected count of less than 5 cases. Both offender groups evidenced few, albeit equal, numbers of individuals ($n = 5$) who acted out in this fashion, and this variable (PRIORACT) was removed from the analysis.

Situational-Interactional Factors Form:

Precipitating Stressors Form:

The Chi-square assessing for differences between offender groups with respect to having a prior conflict with a female other than the victim was not interpreted due to 1 cell having an expected count of less than 5 cases. A majority of the offenders did not evidence this conflict (56 of 67 cases or 83.6%) as compared with those who did (11 of

67 cases or 16.4%). Despite small cell counts, the single perpetrators had a larger percentage of cases involving conflict with another woman (7 of 11 cases or 63.6%) as compared to the serial offenders (4 of 11 cases or 36.4%). Conversely, the serial offenders more often did not have conflict with another woman (40 of 56 cases or 71.4%) than did the single offenders (16 of 56 cases or 28.6%). However, these findings must be interpreted cautiously in light of the unbalanced sample sizes ($n = 23$ single cases and $n = 44$ serial cases). Also, most offenders in both subsamples did not have conflict with another woman (16 of 23 single offenders or 69.6% and 40 of 44 serial offenders or 90.9%, respectively). This variable (CNFLTOT2) was retained in the analysis in light of the aforementioned, interesting patterns in the data.

No statistical comparison between offender groups could be made with respect to having prior conflict with a male because the Chi-square contained multiple empty cells (no positive endorsements for this criterion). This variable (CNFLTML2) was removed from the analysis. Serial murderers were more significantly likely to evidence parental conflict (17 of 19 cases or 89.5%) than the single murderers (2 of 19 cases or 10.5%), $\chi^2(1, n = 79) = 5.16, p = .02$. Interestingly, the majority of the offenders did not evidence parental stress (60 of 79 cases or 75.9%) as compared to those who experienced this stress (19 of 79 cases or 24.1%). The odds ratios reveal that serial offenders were over 5 times more likely (OR = 5.28) than single offenders to have parental conflict. Conversely, the single perpetrators were only 0.19 times more likely than the serial offenders to have parental discord. This variable (CNFLTPA2) was retained in the multivariate analyses.

No significant differences between offender groups were found with respect to

having marital or partner problems, $\chi^2(1, n = 74) = 1.22, p = .27$. A greater proportion of the total sample did not experience marital or partner problems (47 of 74 cases or 63.5%) as compared to those experiencing these difficulties (27 of 74 cases or 36.5%). However, serial offenders more frequently experienced marital or partner-related stress (19 of 27 cases or 70.4%) than single offenders (8 of 27 cases or 29.6%). This variable (PTNRPRO2), despite its nonsignificance, was retained in the analysis due to this potential trend in the data.

The Chi-square examining work-related stress across offender groups was invalid due to 1 cell having an expected count of less than 5 cases. The serial offenders had a higher percentage of individuals who were not being affected by this form of stress (41 of 56 cases or 73.2%) as compared to the single offenders (15 of 56 cases or 26.8%). Proportionally, the single offender subsample had a greater percentage of cases involving work stress (6 of 21 cases or 28.6%) than the serial offender subsample (6 of 47 cases or 12.8%). This variable (WORKPRO2) was removed from the analysis. Similarly, the Chi-square pertaining to childbirth-related stress could not be interpreted due to 2 cells having expected counts of less than 5 cases (including 1 empty cell). Only 2 cases were coded positive for this stressor, with both falling in the serial offender group. This variable (CHLDBIRT2) was omitted from the analysis.

No statistical comparison could be performed between victim groups vis-à-vis physical injury-related stress with the Chi-square having 2 cells with expected counts of less than 5 cases. Only 3 positive endorsements of this criterion were found ($n = 1$ single offender case and $n = 2$ serial offender cases, respectively). This variable (PHINJUR2) was removed from the analysis. No Chi-square could be performed with regard to stress

stemming from the death of a significant person as there were no positive endorsements for this item, leaving multiple empty cells. This variable (SIGDEAT2) was deleted from the analysis.

The Chi-square assessing for differences between offender groups in relation to legal problems could not be interpreted due to 1 cell having an expected count of less than 5 cases. A majority of the offenders did not experience legal stress (72 of 80 cases or 90.0%) as compared to those who did (8 of 80 cases or 10.0%). Of the few cases citing legal-related stress, most were in the single offender group (5 of 8 cases or 62.5%) as compared to the serial offender group (3 of 8 cases or 37.5%). Conversely, the serial offenders had a higher percentage of cases without legal problems (49 of 72 cases or 68.1%) than the single offenders (23 of 72 cases or 31.9%). This variable (LEGALPR2) was removed from the analysis. Similarly, the Chi-square pertaining to stress stemming from financial problems was invalid due to 1 cell having an expected count of less than 5 cases. Most of the perpetrators did not have money problems (65 of 73 cases or 89.0%) as compared with those experiencing financial difficulties (8 of 73 cases or 11.0%). Among those perpetrators with money problems, the serial offenders had the highest percentage of cases (6 of 8 cases or 75.0%) as compared to the single offenders (2 of 8 cases or 25.0%). However, the serial murderers also had a greater proportion of individuals without financial stress (45 of 65 cases or 69.2%) in contrast to the single murderers (20 of 65 cases or 30.8%). This variable (MONEYPR2) was omitted from the analysis.

No significant differences between the prostitute homicide offender groups were found with regard to other life stressors, $\chi^2(1, n = 68) = 1.14, p = .29$. The largest

proportion of offenders did not experience other stressors (40 of 68 cases or 58.8%) as compared with those who did suffer from other stressors (28 of 68 cases or 41.2%). The serial offenders had a higher percentage of cases citing other stressors (19 of 28 cases or 67.9%) than the single offenders (9 of 28 cases or 32.1%). Within the single perpetrator subsample, most individuals were not suffering from other stressors (18 of 27 cases or 66.7%) as compared to those suffering from other stressors (9 of 27 cases or 33.3%). Within the serial offender subsample, there were nearly equal numbers of individuals afflicted by other stress (19 of 41 cases or 46.3%) as there were not afflicted by other stress (22 of 41 cases or 53.7%). This variable (OTRSTRE2) was retained in the analysis in light of these data patterns between offender groups.

The single and serial homicide offenders differed significantly in relation to the total number of life stressors endorsed above, (Single Offender Group: $M = 1.73$ life stressors, $SD = 1.22$ and Serial Offender Group: $M = 2.39$ life stressors, $SD = 1.36$), $t(76) = 2.25$, $p = .03$. This variable (STRESSOR) was retained in the multivariate analyses.

Perpetrator-Victim Argument Block:

There were no significant differences found between the single and serial offenders with respect to having a conflict with the victim prior to the homicide, $\chi^2(1, n = 82) = 3.41$, $p = .07$. A slightly larger proportion of single offenders had a prior conflict with the victim (24 of 44 cases or 54.5%) than serial offenders (20 of 44 cases or 45.5%). Within the subsamples, an interesting pattern was noted. Specifically, a majority of single offenders had a previous conflict with the victim (24 of 37 cases or 64.9%) as compared to those that did not (13 of 37 cases or 35.1%). Within the serial perpetrator

subsample, a slightly higher percentage of individuals did not have a prior conflict with the victim (25 of 45 cases or 55.6%) than those who did have a prior conflict (20 of 45 cases or 44.4%). This variable (CNFLTVI2) was retained in the analysis, despite its nonsignificance, due to the patterns discussed above.

No comparison could be made between the single and serial murderers with regard to having an argument with the victim over condom usage. The Chi-square in this case could not be computed because there were no positive endorsements for this item, resulting in multiple empty cells. This variable (ARGUCNDM) was removed from the analysis. No significant difference was found between the perpetrator groups in relation to having an argument with the victim over their sexual service arrangement (e.g., perpetrator attempts to modify the contract, perpetrator requests a form of "kinky" sex, which the victim refuses to perform, etc.), $\chi^2(1, n = 70) = .0001, p = 1.00$. Serial murderers had a slightly higher percentage of instances involving sexual contract arguments (12 of 20 cases or 60.0%) than single murderers (8 of 20 cases or 40.0%). This variable (ARGUDEAL) was dropped from the analysis.

Due to the presence of multiple empty cells (no positive endorsements), a Chi-square could not be computed for the variable pertaining to a homicide precipitated by a victim-perpetrator argument, with the victim later killed by him after returning to her work or "stroll" area (PRIORARG). This variable was dropped from the analysis. The variables (CNFLTVI2), (ARGUCNDM), (ARGUDEAL), and (PRIORARG) were combined into a summary variable (ARGUMENT), coded positive if any of the aforementioned components were endorsed. No significant difference between the perpetrator groups was found, $\chi^2(1, n = 77) = 1.35, p = .25$. Interestingly, a majority of

the homicides involved a precipitating argument (62 of 77 cases or 80.5%) as compared to those that did not (15 of 77 cases or 19.5%). Although both groups had equal percentages of cases in each group ($n = 31$ or 50.0%) that involved victim-perpetrator arguments, the serial offenders had a higher percentage of cases not involving such arguments (10 of 15 cases or 66.7%) than the single offenders (5 of 15 cases or 33.3%). This variable was dropped from the multivariate analyses.

Drug Involvement/Effects on Interaction Block:

No significant differences between the single and serial prostitute homicide victim groups were found with respect to both the victim and perpetrator ingesting drugs (excluding alcohol) at the time of the homicide, $\chi^2(1, n = 53) = 1.28, p = .26$. Both groups evidenced nearly equal percentages of cases where both individuals were ingesting drugs (12 of 23 single cases or 52.2% and 11 of 23 cases or 47.8%, respectively), although the serial group had a greater proportion of cases not involving mutual drug use (19 of 30 cases or 63.3%) than the single group (11 of 30 cases or 36.7%). This variable (BOTHDRUG) was dropped from the analysis.

The Chi-square examining differences between victim groups with respect to both the perpetrator and victim ingesting alcohol prior to the offense was invalid due to 1 cell having an expected count of less than 5 cases. Among the few cases involving mutual alcohol ingestion, the single victim group had a slightly larger percentage of cases involving this behavior (7 of 12 cases or 58.3%) than the serial victim group (5 of 12 cases or 41.7%). Conversely, the serial victim group had a greater proportion of cases where the victim and perpetrator were not both ingesting alcohol (21 of 31 cases or 67.7%) as compared to the single victim group (10 of 31 cases or 32.3%). This variable

(BOTHETOH) was omitted from the analysis.

In an attempt to obtain further meaning, the variables (BOTHDRUG) and (BOTHETOH) were collapsed into the summary variable (BOTHDRU2), coded positively for the endorsement of either of the component variables. However, no significant differences were found between the prostitute homicide victim groups, $\chi^2(1, n = 50) = 2.34, p = .13$. Within the single group subsample, most cases involved the mutual ingestion of substances (14 of 21 cases or 66.7%) as compared to those that did not (7 of 21 cases or 33.3%). Conversely, the serial group subsample involved more cases without the mutual ingestion of drugs (16 of 29 cases or 55.2%) versus mutual drug use (13 of 29 cases or 44.8%). This summary variable (BOTHDRU2) was removed from the multivariate analyses.

With regard to victim group differences vis-à-vis homicides precipitated by the physiological effects of drug and/or alcohol use (e.g., decreased sexual interest, inability to ejaculate, erectile dysfunction, etc.), the Chi-square was invalid due to 2 cells having expected counts of less than 5 cases (including 1 empty cell). Of the 2 reported cases where this phenomenon occurred, both were in the single victim group. The serial homicide victim group had a higher percentage of cases with homicides not precipitated by drug side effects (33 of 54 cases or 61.1%) than the single homicide group (21 of 54 cases or 38.9%). This variable (PHYSIOSE) was removed from the analysis.

The Chi-square assessing for differences between victim groups vis-à-vis the homicide being precipitated by behavioral side effects of drug or alcohol use on the victim was invalid due to 1 cell having an expected count of less than 5 cases. The single homicide victims had a slightly greater proportion of cases involving these drug side

effects (6 of 10 cases or 60.0%) than did the serial victims (4 of 10 cases or 40.0%).

Within the serial group subsample, a higher percentage of victims were not killed due to drug side effects (7 of 11 cases or 63.6%) than those who were killed due to drug side effects (4 of 11 cases or 36.4%). In the single group subsample, there were no differences in cell frequencies with regard to the homicide being precipitated by victim drug side effects (6 of 12 cases in each cell or 50.0%, respectively). This variable (VDRUGSE) was omitted from the analysis.

Single prostitute homicides were more likely precipitated by the behavioral side effects of drugs or alcohol on the perpetrator (10 of 13 cases or 76.9%) than were serial prostitute homicides (3 of 13 cases or 23.1%), $\chi^2(1, n = 32) = 7.94, p = .01$. Conversely, serial homicides were significantly less likely to be triggered by drug-induced side effects on the perpetrator (14 of 19 cases or 73.7%) than were single homicides (5 of 19 cases or 26.3%). These results must be viewed with caution in light of the small cell sizes.

Within the respective subsamples these patterns were reinforced. Specifically, more single homicides were precipitated by perpetrator drug side effects (10 of 15 cases or 66.7%) than single homicides without perpetrator side effect involvement (5 of 15 cases or 33.3%). Within the serial victim group, most homicides were not triggered by perpetrator drug side effects (14 of 17 cases or 82.4%) as compared to those triggered by side effects (3 of 17 cases or 17.6%). Despite its significance, this variable (PDRUGSE) was omitted from the analysis due to its overall low sample size ($n = 32$ cases or 26.0% of the sample).

The variables (PHYSIOSE), (VDRUGSE), and (PDRUGSE) were collapsed into a new variable (DRUGSE2) in an attempt to increase meaningfulness by combining low

cell totals. This variable was positively endorsed if any of its component variables were, themselves, endorsed. The Chi-square crosstabulation for this variable could not be interpreted because 1 cell had an expected count of less than 5 cases. However, the single prostitute homicide victim group had a higher percentage of homicides triggered by drug side effects in some fashion (15 of 21 cases or 71.4%) than the serial prostitute homicide victim group (6 of 21 cases or 28.6%). This variable (DRUGSE2) was dropped from the multivariate analyses. No Chi-square could be performed across victim groups for the variable (SEXABUSE) describing victim deaths occurring pursuant to sex-for-drug exchanges within crack houses or drug dens. No positive endorsements of this criterion were reported in either victim group, resulting in multiple empty cells. This variable was removed from the analysis.

Factors Influencing Perpetrator Escalation Block:

The single and serial prostitute homicide victim groups did not differ significantly with respect to the perpetrator's behavior escalating due to victim resistance, $\chi^2(1, n = 55) = 2.42, p = .12$. Overall, a majority of the homicides coded on this criterion involved an escalation pursuant to victim resistance (40 of 55 cases or 72.7%) as compared that did not involve victim resistance (15 of 55 cases or 27.3%). Equal percentages of single and serial victims were killed when they resisted the offender's attack ($n = 20$ of 40 cases or 50.0% in each group). The single group had a smaller proportion of cases not involving perpetrator escalation due to resistance (4 of 15 cases or 26.7%) than the serial group (11 of 15 victims or 73.3%). This variable (RESIST) was dropped from the analysis.

No Chi-square could be computed for the variable (COMPLNCE) describing perpetrator escalation pursuant to the victim's compliance or passive resistance as it

contained no positive endorsements, producing multiple empty cells. This variable was removed from the analysis. The Chi-square was also invalid for the variable describing offender escalation due to the victim's behavior not matching his fantasy, resulting in her death (NFANTASY). Only one occurrence of this behavior was noted in the single perpetrator group. This variable was omitted from the analysis. Conversely, no Chi-square crosstabulation could be performed for the variable describing perpetrator escalation due to the victim's behavior matching his fantasy, resulting in her death (YFANTASY). No positive endorsements for this criterion were recorded, resulting in multiple empty cells, and the variable was dropped from the analysis.

The Chi-square examining offender group differences with regard to escalation caused by perceived violations of his sex role stereotypes (e.g., he believes he can violate the prostitute victim any way he pleases, having "paid" for the service) was invalid due to 2 cells having expected counts of less than 5 cases. Of the few positive occurrences of this phenomenon that were documented in the files ($n = 4$), all involved single homicide offenders. This variable (SEXROLE) was removed from the analysis.

Perpetrator Sadistic Fantasy Block:

Serial prostitute murderers were significantly more likely to evidence sexually sadistic fantasies through verbal admissions, writings, police confessions, and other means (28 of 32 cases or 87.5%) than were the single prostitute murderers (4 of 32 cases or 12.5%), $\chi^2(1, n = 57) = 12.29, p = .0001$. Conversely, single offenders were significantly less likely to offer such indications of these fantasies (14 of 25 cases or 56.0%) than were the serial offenders (11 of 25 cases or 44.0%). Within the single offender subsample, most perpetrators did not admit to having sexually sadistic fantasies

(14 of 18 cases or 77.8%) as compared to those who did admit to having them (4 of 18 cases or 22.2%). Conversely, within the serial perpetrator subsample, the majority of offenders evidenced sexually sadistic fantasies (28 of 39 cases or 71.8%) as compared to those who did not give such indications (11 of 39 cases or 28.2%). The odds ratios reveal that serial murderers were nearly 9 times more likely (OR = 8.91) to evidence sexually sadistic fantasies than single murderers who, themselves, were only 0.11 times more likely to have these fantasies than serial offenders. This variable (SADFNTSY) was retained in the analysis.

There were no differences found between the offender groups in relation to possessing trophies or souvenirs from the victim, $\chi^2(1, n = 90) = 0.83, p = .36$. The serial perpetrator group had a higher percentage of individuals who took souvenirs or trophies (20 of 30 cases or 66.7%) as compared to the single perpetrator group (10 of 30 cases or 33.3%). However, the serial group also had a greater proportion of cases where this offender behavior was not exhibited (34 of 60 cases or 56.7%) as compared to the single group (26 of 60 cases or 43.3%). This variable (TROPHIES) was omitted from the analysis. Similarly, the perpetrator groups did not differ significantly with respect to possessing or using pornographic media, $\chi^2(1, n = 64) = 0.01, p = .92$. Serial offenders did have a higher percentage of individuals utilizing pornography (16 of 23 cases or 69.6%) than did the single offenders (7 of 23 cases or 30.4%), although they also did not use pornography more frequently (28 of 41 cases or 68.3%) than the single offenders (13 of 41 cases or 31.7%). This variable (PORNOGRA) was removed from the analysis.

The Chi-square assessing for offender group differences with respect to masturbating to sexually sadistic fantasies could not be interpreted due to 2 cells having

expected frequencies of less than 5 cases. Only two occurrences of this behavior were found in the files, attributed to one offender in each group. This variable (MASTRBTN) was omitted from the analysis. Additionally, the Chi-square crosstabulation examining perpetrator differences in relation to possessing bondage materials was invalid due to 2 cases having expected counts of less than 5 cases. Among the few occurrences of this behavior that were found, the serial offenders more frequently possessed bondage materials (4 of 6 cases or 66.7%) than did the single offenders (2 of 6 cases or 33.3%). However, this pattern may solely be an artifact of sample size differences between the single ($n = 30$) and serial ($n = 47$) perpetrator groups. This variable (BONDAGE) was removed from the analysis.

There were no significant differences between the single and serial murderers with regard to possessing or using weapons, $\chi^2(1, n = 121) = 3.29, p = .07$. Serial offenders were slightly more likely to use a weapon (48 of 88 cases or 54.5%) than were the single offenders (40 of 88 cases or 45.5%). However, the serial perpetrators were markedly more likely not to use a weapon (24 of 33 cases or 72.7%) than were the single perpetrators (9 of 33 cases or 27.3%). Within the single offender subsample, a majority of individuals possessed or used weapons (40 of 49 cases or 81.6%) as compared to those who did not own or employ them (9 of 40 cases or 18.4%). The difference within the serial group subsample was less pronounced, with more offenders possessing or using weapons (48 of 72 cases or 66.7%) than those who did not (24 of 72 cases or 33.3%). This variable (HASWEAPN) was retained in the analysis in light of these patterns in the data.

No significant differences were found between the single and serial murderers

with regard to possessing or using police paraphernalia, $\chi^2(1, n = 92) = 1.93, p = .16$. Despite low cell totals, the serial murderers more frequently utilized police paraphernalia (11 of 14 cases or 78.6%) than the single offenders (3 of 14 cases or 21.4%). This variable (PARAPHER) was removed from the analysis. The Chi-square pertaining to perpetrator group differences with respect to possessing or using torture kits could not be interpreted as 1 cell had an expected count of less than 5 cases. However, it is interesting to note that among the few instances where this behavior was documented, the serial offenders more often used torture kits (6 of 9 cases or 66.7%) than did the single offenders (3 of 9 cases or 33.3%). This variable (TORTKITS) was dropped from the analysis.

There were no significant differences between the single and serial perpetrators in relation to committing sexually sadistic acts against prostitutes or others, $\chi^2(1, n = 99) = .08, p = .78$. The serial offenders did have a higher percentage of cases involving sexually sadistic acts (25 of 36 cases or 69.4%) than the single offenders (11 of 36 cases or 30.6%). However, a greater proportion of serial offenders also did not engage in sexually sadistic behavior (42 of 63 cases or 66.7%) as compared to the single offenders (21 of 63 cases or 33.3%). This variable (SADIACTS) was omitted from the analysis.

No statistical comparison between offender groups could be made with respect to perpetrators engaging in criminal actions in public that reflected or suggested the acting out of fantasies. Specifically, the Chi-square could not be interpreted due to the presence of 1 empty cell. Interestingly, the majority of offenders engaged in such actions (100 of 111 cases or 90.1%) as compared to those that did not engage in this fantasy-based acting out (11 of 111 cases or 9.9%). Serial offenders more frequently engaged in the criminal

acting-out of fantasies (74 of 100 cases or 74.0%) than the single offenders (26 of 100 cases or 26.0%). Conversely, single offenders exclusively did not engage in criminal acts that were suggestive of underlying fantasies (11 of 11 cases or 100%). Within the serial perpetrator subsample, all of the offenders ($n = 74$) engaged in fantasy-based acting-out. Conversely, within the single homicide offender subsample, most offenders engaged in criminal activities that were suggestive of underlying fantasies (26 of 37 cases or 70.3%) while, as mentioned, a lesser number did not engage in these behaviors (11 of 37 cases or 29.7%). This variable (FNTSYACT) was retained in the analysis in light of these interesting patterns and large overall sample size (111 of 123 cases or 90.2%).

No significant differences between the single and serial homicide offenders were found in relation to making requests for “kinky” sex (i.e., extending beyond the victim’s normal repertoire, such as anal sex) from the victim or from other prostitutes, $\chi^2(1, n = 63) = 1.66, p = .20$. Serial offenders more frequently made requests for kinky sex (24 of 31 cases or 77.4%) than the single offenders (7 of 31 cases or 22.6%). Within the serial perpetrator subsample, slightly more offenders made requests for kinky sex (24 of 44 cases or 54.5%) than those who did not (20 of 44 cases or 45.5%). The opposite pattern was evidenced in the single murderer subsample, with more offenders not making requests for kinky sex (12 of 19 cases or 63.2%) than those who made such requests (7 of 19 cases or 36.8%). This variable (KINKYSEX) was retained in the analysis due to these interesting patterns between offender groups.

Crime Scene Variables Form:

Cause of Death and Major Trauma Block:

Initially, the predecessor variable (CAUSEDTH) had an invalid Chi-square due to

12 cells having expected counts less than 5 cases (including 2 empty cells). This variable was then recoded, with categories collapsed, into the new variable (CAUSEDT2) in an attempt to obtain a valid Chi-square crosstabulation. Significant differences were found between the single and serial prostitute homicide victims with respect to their principal cause of death, $\chi^2(1, n = 123) = 22.35, p = .0001$. Serial victims were significantly more likely to have died of blunt force trauma (9 of 15 cases or 60.0%) than the single victims (6 of 15 cases or 40.0%), although these cell counts were low. Serial victims were significantly more likely to have died of gunshot wounds (8 of 14 cases or 57.1%) than were the single victims (6 of 14 cases or 42.9%), although this difference was small and possibly attributable to differences in the overall subsample sizes ($n = 49$ single victims and $n = 74$ serial victims, respectively).

The single prostitute victims were significantly more likely to have died of stab or cutting wounds (22 of 31 cases or 71.0%) than the serial victims (9 of 31 cases or 29.0%). The serial victims, on the other hand, were significantly more likely to have been killed by manual strangulation (26 of 32 cases or 81.3%) than the single victims (6 of 32 cases or 18.8%). Similarly, the serial victims were significantly more likely to have died by ligature strangulation (10 of 17 cases or 58.8%) than the single victims (7 of 17 cases or 41.2%). Again, this latter result difference was small and may have been caused by sample size differences. Lastly, the serial victims were significantly more likely to have "Other" causes of death (i.e., suffocation, asphyxiation, undetermined death, or other forms of death) than the single victims (12 of 14 serial victims or 85.7% and 2 of 14 single victims or 14.3%, respectively). Within the respective subsamples, the majority of single victims died of stab or cutting wounds (22 of 49 cases or 44.9%) while the

majority of serial victims died of manual strangulation (26 of 74 cases or 35.1%). This recoded variable (CAUSEDT2) was retained in the multivariate analyses.

The variable (CAUSEDT2) was dummy-coded into a series of parameters that were each examined in relation to the single and serial prostitute homicide victim groups. The Chi-square and odds ratios corresponding to the “stab/cutting wounds” category (parameter CAU_STAB) were significant, $\chi^2(1, n = 123) = 16.76, p = .0001$. Within the victim group subsamples, a greater proportion of single victims died of stab or cutting wounds (22 of 49 single victims or 44.9%) than serial victims (9 of 74 serial victims or 12.2%). On the other hand, a higher percentage of serial victims did not die of stab or cutting wounds (65 of 74 serial victims or 87.8%) as compared to single victims (27 of 49 single victims or 55.1%). The odds ratio reveals that single victims were approximately 6 times more likely (OR = 5.89) to die of stab or cutting wounds than the serial victims, who, themselves, were only 0.17 times as likely to have either of these causes of death.

Next, the Chi-square and odds ratios corresponding to the “manual strangulation” category (parameter CAU_STR1) of variable (CAUSEDT2) were significant, $\chi^2(1, n = 123) = 8.03, p = .01$. Within the victim subsamples, the serial group had a higher proportion of victims who died of manual strangulation (26 of 74 serial victims or 34.3%) than the single group (6 of 49 single victims or 12.2%). Conversely, the single victim subsample had a greater percentage of victims who were not killed by manual strangulation (43 of 49 single victims or 87.8%) as compared to the serial victim subsample (48 of 74 serial victims or 64.9%). The odds ratio reveals that serial victims were almost 4 times more likely (OR = 3.88) to die of manual strangulation than single victims. On the other hand, the single victims were only about 1/4 as likely (OR = 0.26)

as serial victims to be strangled manually.

Finally, the Chi-square crosstabulation and odds ratios pertaining to the “other cause/undetermined death” category (parameter CAU_OTH) of variable (CAUSEDT2) were significant, $\chi^2(1, n = 123) = 4.30, p = .04$. Specifically, the serial victim subsample had a higher percentage of victims who died of asphyxiation, suffocation, or other causes, or who had an “undetermined” cause of death as listed by the medical examiner (12 of 74 serial victims or 16.2%) than the single victim subsample (2 of 49 single victims or 4.1%). Conversely, the single victim subsample had a larger proportion of victims who were not assigned these official causes of death (47 of 49 single victims or 95.9%) as compared with the serial victim subsample (62 of 74 serial cases or 83.8%). The related odds ratio shows that serial victims had a 4 ½ times greater likelihood (OR = 4.55) of dying of other or undetermined causes as single victims. On the other hand, the single victims were less than ¼ as likely (OR = 0.22) as the serial victims to die of other or undetermined causes.

The Chi-square examining frequency differences between victim groups in relation to major trauma to the head, face, or neck areas was invalid due to 1 cell having an expected count of less than 5 cases. The serial victim group had a higher percentage of cases with major trauma to the head (58 of 103 cases or 56.3%) than the single victim group (45 of 103 cases or 43.7%). Interestingly, the single victims had fewer cases without head trauma (2 of 10 cases or 20.0%) than the serial victims (8 of 10 cases or 80.0%). Within the subsamples, a greater proportion of single victims evidenced head trauma (45 of 47 cases or 95.7%) than serial victims (58 of 66 cases or 87.9%). This variable (MTRHEAD) was omitted from the analysis. Single victims were significantly

more likely to have major trauma to the arms (13 of 20 victims or 65.0%) than the serial victims (7 of 20 victims or 35.0%), $\chi^2(1, n = 111) = 5.13, p = .02$. Conversely, the serial victims were significantly less likely to have major trauma to the arms (57 of 91 cases or 62.6%) than the single victims (34 of 91 victims or 37.4%). The odds ratios show that single prostitute homicide victims were 3 times more likely (OR = 3.11) than serial prostitute homicide victims to have major trauma to the arms. Conversely, serial victims were approximately 1/3 as likely (OR = 0.32) as single victims to have major trauma to the arms. This variable (MTRARMS) was retained in the analysis.

No significant differences were found between the homicide victim groups with respect to major trauma to the torso, $\chi^2(1, n = 111) = 0.23, p = .63$. There was a slightly greater percentage of serial victims who had major trauma to the torso (23 of 42 cases or 54.8%) than single victims (19 of 42 cases or 45.2%), although serial victims also had a larger proportion of cases without torso trauma (41 of 69 cases or 59.4%) than the single victims (28 of 69 victims or 40.6%). These patterns, however, may be attributable to the unbalanced subsample sizes ($n = 47$ single victims and $n = 64$ serial victims, respectively). This variable (MTRTORSO) was dropped from the analysis. The Chi-square assessing for differences among the victim groups in relation to major trauma to the legs could not be interpreted due to 1 cell having an expected count of less than 5 cases. Of the few victims who suffered trauma to the legs, serial victims had a higher percentage of cases (7 of 11 cases or 63.6%) than the single victims (4 of 11 cases or 36.4%). This variable (MTRLEGS) was removed from the analysis.

There were no significant differences between the single and serial prostitute victims with regard to major trauma to the breast, $\chi^2(1, n = 110) = 0.53, p = .47$. Both

victim groups had equal percentages of victims whose bodies evidenced this trauma ($n = 10$ of 20 cases or 50.0% in each group). Although there was a greater percentage of serial victims who did not have major trauma to the breast (53 of 90 cases or 58.9%) than single victims (37 of 90 cases or 41.1%), this difference may be an artifact of victim group subsample size differences ($n = 47$ single victims and $n = 63$ serial victims, respectively). This variable (MTRBREAS) was omitted from the analysis. The Chi-square examining differences between prostitute victim groups with respect to major trauma to the buttocks was invalid due to 2 cells with expected counts of less than 5 cases. Only 3 cases involving this form of trauma were documented ($n = 1$ single victim and $n = 2$ serial victims, respectively). This variable (MTRBUTTK) was removed from the analysis.

No statistical comparison could be performed between the prostitute homicide victim groups in relation to major trauma to the genitalia, as the Chi-square had 2 cells containing expected counts of less than 5 cases. Both the single and the serial groups had equal numbers of victims ($n = 4$) who sustained this form of major trauma. The serial group had a greater percentage of cases that did not have trauma to the genitalia (60 of 103 cases or 58.3%) than did the single group (43 of 103 cases or 41.7%). However, as mentioned, this pattern may be attributable to sample size differences ($n = 47$ single victims and $n = 64$ serial victims, respectively).

The Chi-square examining victim group differences with regard to having major trauma to the anus could not be interpreted due to 2 cells having expected frequencies of less than 5 cases (including 1 empty cell). Only 3 cases noting this form of trauma were found, all falling in the single victim group. This variable (MTRANUS) was removed

from the analysis. Similarly, the Chi-square pertaining to group differences with respect to major trauma to other areas was invalid due to 2 cells having expected counts of less than 5 cases. Despite low cell counts, the single victim group had a larger proportion of cases (3 of 4 cases or 75.0%) involving trauma to other areas than did the serial group (1 of 4 cases or 25.0%). The serial victim group had a greater percentage of cases that did not have other trauma (62 of 107 cases or 57.9%) than the single group (45 of 107 cases or 42.1%), although, as with the variables in this block, this pattern may be due to unbalanced subsample sizes ($n = 48$ single victims and $n = 63$ serial victims, respectively). This variable (MTROTHER) was dropped from the analysis.

Secondary Injuries and Overkill Block:

There were no significant differences between the single and serial prostitute homicide victim groups with regard to the presence of overkill, $\chi^2(1, n = 109) = 3.17, p = .08$. The single victim group had a higher percentage of cases with overkill (10 of 17 cases or 58.8%) than the serial victim group (7 of 17 cases or 41.2%). Conversely, the serial victim group had a greater proportion of cases not evidencing overkill (59 of 92 cases or 64.1%) than the single victim group (33 of 92 cases or 35.9%). Despite its nonsignificance, this variable (OVERKILL) was retained in the analysis in light of these interesting patterns.

No significant differences were found between the prostitute homicide victim groups in relation to the number gunshot wounds sustained (Single Victim Group: $M = 0.41$ gunshot wounds, $SD = 1.34$ and Serial Victim Group: $M = 0.27$ gunshot wounds, $SD = 0.98$), $t(118) = -0.66, p = .51$. This variable (GUNSHOT) was dropped from the analysis. Single homicide victims incurred a significantly higher average number of stab

wounds ($M = 6.00$ stab wounds, $SD = 11.10$) than the serial victims ($M = 1.11$ stab wounds, $SD = 4.01$), $t(56.83) = -2.95$, $p = .01$. This variable (STABWNDS) was retained in the analysis. Further, single victims sustained a significantly greater average number of cutting wounds ($M = 2.60$ cutting wounds, $SD = 5.27$) than the serial victims ($M = 0.79$ cutting wounds, $SD = 2.68$), $t(62.54) = -2.16$, $p = .04$. This variable (CUTWNDS) was retained for the multivariate analyses.

With regard to the mean number of secondary blunt force trauma injuries sustained, there was not a significant difference found between the single and serial prostitute homicide victim groups (Single Victim Group: $M = 2.43$ blunt force trauma wounds, $SD = 6.11$ and Serial Victim Group: $M = 0.80$ blunt force trauma wounds, $SD = 3.58$), $t(68.23) = -1.61$, $p = .11$. Because of this seemingly interesting difference between the mean number of blunt force injuries sustained, this variable (BLUNTFCE) was retained in the analysis despite its nonsignificance. No statistical comparison could be performed between victim groups with regard to the number of reported secondary burns, since no single victims and only 1 serial victim incurred any quantifiable burn injuries (i.e., countable burns, such as those resulting from torture). This variable (BURNS) was removed from the analysis. Similarly, no comparison could be made between victim groups vis-à-vis the number of bite injuries sustained, as only 1 reported case was documented amongst the single victims. This variable (BITES) was omitted from the analysis.

No significant difference was found between the single and serial prostitute homicide victims in relation to any "other" secondary injuries incurred that were not otherwise accounted for in the aforementioned secondary injury categories (Single

Victim Group: $\underline{M} = 0.15$ other wounds, $\underline{SD} = 0.72$ and Serial Victim Group: $\underline{M} = 0.25$ other wounds, $\underline{SD} = 0.86$), $t(116) = 0.69$, $p = .49$. Of the 10 total victims sustaining “other” wounds, 8 were serial victims and 2 were single victims. This variable (OTRWOUND) was dropped from the analysis. When the total number of secondary injuries in each category were summed, the single prostitute victims incurred a significantly higher number of overall secondary injuries ($\underline{M} = 12.09$ total injuries, $\underline{SD} = 15.37$) than the serial prostitute victims ($\underline{M} = 3.52$ total injuries, $\underline{SD} = 6.91$), $t(58.32) = -3.53$, $p = .001$. This summary variable (NUMWOUND) was retained in the multivariate analyses.

Sexual Activities and Evidence Block:

No statistical comparison was made between victim groups with respect to the perpetrator performing oral sex on the victim during their encounter. No positive endorsements of this sexual activity were recorded, leaving multiple empty cells in the Chi-square. This variable (ORALPONV) was omitted from the analysis. A significantly greater percentage of serial perpetrators engaged in vaginal sex with their victims (41 of 59 cases or 69.5%) than single perpetrators (18 of 59 cases or 30.5%), $\chi^2(1, n = 99) = 4.83$, $p = .03$. Conversely, single perpetrators were significantly, albeit slightly, more likely not to have engaged in vaginal sex (21 of 40 cases or 52.5%) than serial perpetrators (19 of 40 cases or 47.5%). Within the single offender subsample, a slightly larger number of perpetrators did not engage in vaginal intercourse (21 of 39 cases or 53.8%) than those that did engage in vaginal intercourse (18 of 39 cases or 46.2%). Conversely, within the serial perpetrator subsample, most offenders (41 of 60 cases or 68.3%) did have vaginal intercourse with the victim as compared to those that did not (19

of 60 cases or 31.7%). The odds ratios indicate that serial murderers were 2 ½ times as likely (OR = 2.52) to engage in vaginal intercourse with the victim than single murderers. On the other hand, single offenders were only 0.40 times as likely to engage in vaginal sex with the victim as compared to serial offenders. This variable (VAGNRAPE) was retained in the analysis.

Serial murderers engaged in anal sex with their victims significantly more frequently (26 of 33 cases or 78.8%) than the single murderers (7 of 33 victims or 21.2%), $\chi^2(1, n = 90) = 8.52, p = .004$. Conversely, single homicide offenders were significantly less likely to engage in anal intercourse (30 of 57 cases or 52.6%) than were the serial offenders (27 of 57 cases or 47.4%). Within the single offender subsample, the majority of perpetrators did not have anal intercourse with the victim (30 of 37 cases or 81.1%) as compared to the few who engaged in this sexual activity (7 of 37 cases or 18.9%). Within the serial murderer subsample, virtually the same percentage of perpetrators engaged in anal sex with the victim (26 of 53 cases or 49.1%) as those that did not engage in anal sex (27 of 53 cases or 50.9%). The odds ratios show that single murderers were approximately ¼ as likely (OR = 0.24) as serial murderers to engage in anal intercourse with the victim. Conversely, serial offenders were more than 4 times as likely (OR = 4.13) as single offenders to have engaged in anal sex with the victim. This variable (ANALRAPE) was retained in the multivariate analyses.

No significant differences were found between the single and serial perpetrators in relation to having the victim perform oral sex on them during the sexual encounter, $\chi^2(1, n = 85) = 2.32, p = .13$. Interestingly, this behavior more often did not occur (67 of 85 cases or 78.8%) than otherwise (18 of 85 cases or 21.2%) in the total sample. Serial

murderers had a higher percentage of cases involving this sexual activity (14 of 18 cases or 77.8%) than the single murderers (4 of 18 cases or 22.2%). Within the subsamples, a larger proportion of single offenders did not receive oral sex from the victim (28 of 32 single cases or 87.5%) as compared with the serial offender subsample (39 of 53 serial cases or 73.6%). However, the serial offenders also had a higher frequency of cases not involving this activity (39 of 67 cases or 58.2%) than the single offenders (28 of 67 cases or 41.8%). These results must be interpreted with caution in light of the unbalanced perpetrator group subsample sizes ($n = 32$ single cases and $n = 53$ serial cases, respectively). This variable (ORALVONP) was omitted from the analysis. Because no positive endorsements were recorded with regard to the victim being forced to perform other sexual acts during the offender encounter, a Chi-square could not be computed, and this variable (VOTRACTS) was deleted from the analysis.

No significant difference between the single and serial homicide victim groups was found in relation to semen evidence being recovered from the victim's vagina, $\chi^2(1, n = 85) = 2.52, p = .11$. The serial victims, however, had a higher percentage of cases with semen found in the victim's vagina (27 of 37 cases or 73.0%) than the single victims (10 of 37 cases or 27.0%). Within the victim subsamples, more single victims did not have semen recovered from the vagina (21 of 31 cases or 67.7%) than those who did have this evidence recovered (10 of 31 cases or 32.3%). In the serial subsample, equal percentages of victims (27 of 54 cases or 50.0%) had semen evidence recovered or not recovered from the vagina, respectively. This variable (SEMENVAG) was removed from the analysis. However, as shall be explained, it was included in the calculation of a summary variable.

There was no significant difference found between the prostitute victim groups with respect to semen evidence being recovered in the anus, $\chi^2(1, n = 83) = 3.19, p = .07$. Again, the serial victims evidenced a higher percentage of cases where semen was detected in the anus (15 of 19 cases or 78.9%) as compared to the single victims (4 of 19 cases or 21.1%). Within the single victim subsample, fewer victims had semen recovered from the anus (4 of 32 cases or 12.5%) than those who did not have this evidence recovered (28 of 32 cases or 87.5%). Conversely, within the serial group, as compared to the single group, a higher percentage of victims had semen detected in their anus (15 of 51 cases or 29.4%), although more serial victims did not have this evidence detected (36 of 51 cases or 70.6%). This variable (SEMENANU) was deleted from the analysis, although it did comprise part of a summary variable.

The Chi-square assessing victim group differences in relation to semen evidence recovered in the mouth was invalid due to 1 cell having an expected count of less than 5 cases. Interestingly, of the 9 cases documented with semen evidence recovered from the mouth, all were in the serial group. This variable (SEMENMOU) was removed from the analysis individually, but comprised a portion of a new summary variable (SEMENPR2). This variable was coded positively if any of the semen evidence variables – (SEMENVAG), (SEMENANU), or (SEMENMOU) – were endorsed.

No significant difference between groups was found in relation to the summary variable (SEMENPR2), $\chi^2(1, n = 85) = 3.65, p = .06$. Serial victims had the highest percentage of cases with semen recovered from the vagina, anus, and/or mouth (29 of 39 cases or 74.4%) as compared to the single victims (10 of 39 cases or 25.6%). Within the single victim subsample, more single victims did not have semen evidence recovered (21

of 31 cases or 67.7%) than those who did have semen evidence recovered (10 of 31 cases or 32.3%). Conversely, within the serial victim subsample, most victims had semen recovered from their bodily orifices (29 of 54 cases or 53.7%) as compared to those that had no semen evidence recovered (25 of 54 cases or 46.3%). In light of these interesting patterns between the homicide victim groups, this variable (SEMENPR2) was retained in the multivariate analyses.

The Chi-Square examining for differences between victim groups with respect to other ejaculation being present at the crime scene was invalid due to 4 cells having expected counts of less than 5 cases. Overall, the majority of cases in the total sample did not evidence ejaculation at the crime scene (69 of 79 cases or 87.3%), with equal proportions evidencing ejaculation on the victim's body and elsewhere at the crime scene (5 of 79 cases or 6.3% in each category, respectively). This variable (OTHREJAC) was dropped from the analysis.

Perpetrator Assaults On/Activities With Victim's Body Block:

The single and serial prostitute homicide victims did not differ significantly in relation to the percentages of cases involving the use of restraints by the perpetrator, $\chi^2(1, n = 119) = 1.33, p = .25$. Among those cases involving the use of restraints, the serial victims evidenced the highest percentage (11 of 15 cases or 73.3%) as compared to the single victims (4 of 15 cases or 26.7%). However, serial cases also more frequently did not involve the use of restraints (60 of 104 cases or 57.7%) as compared to single cases (44 of 104 cases or 42.3%). These patterns might be attributable to differences in the victim group subsample sizes ($n = 48$ single victims and $n = 71$ serial victims, respectively). This variable (RESTRAIN) was omitted from the analysis but, as shall be

explained later, was included in a new summary variable.

The Chi-square assessing for victim group differences with regard to whether the offender found restraints at the crime scene and/or brought them was invalid due to 5 cells having expected counts of less than 5 cases (including 1 empty cell). Despite very low cell counts, the serial offenders had a greater proportion of individuals who brought restraints to the crime scene (7 of 8 cases or 87.5%) than the single offenders (1 of 8 cases or 12.5%). The serial offenders also had a higher percentage of cases involving the use of opportunity items at the crime scene to restrain the victim (3 of 4 cases or 75.0%) than the single offenders (1 of 4 cases or 25.0%). Only 1 case (involving one of the single murderers) was coded in the category addressing restraints "both brought and found" to use on the victim. The above patterns must be interpreted with caution in light of the very small sample size for this variable ($n = 13$ cases). This variable (TOOKTIE2) was removed from the analysis. Similarly, no Chi-square could be computed for the variable pertaining to whether or not any restraints utilized by the perpetrator were "excessive" as 3 cells had expected counts of less than 5 cases. Although this recoded variable (EXCESTI2) was omitted from the analysis, it is interesting to note that the 2 documented occurrences of this sexually sadistic phenomenon were committed by serial murderers.

No statistical comparison was made between the homicide victim groups in relation to being sodomized with foreign objects due to the Chi-square having 4 cells with expected counts of less than 5 cases. Among those victims sodomized with foreign objects in the vagina, most were single victims (3 of 4 cases or 75.0%) versus serial victims (1 of 4 cases or 25.0%). Only 1 case of anal sodomy with foreign objects was

recorded, and this involved a serial prostitute homicide victim. As mentioned previously, the extremely low sample size ($n = 5$) for this phenomenon precludes formal interpretation, as the majority of victims both subsamples (38 of 41 single victims or 92.7% and 62 of 64 serial victims or 96.9%, respectively) were not sodomized with foreign objects. This variable (SODOMIZE) was removed from the analysis.

The related Chi-square pertaining to whether or not a foreign object was discovered in the victim's body or was removed from the crime scene was invalid due to 4 cells having expected counts of less than 5 cases. Of the 5 aforementioned cases involving sodomy with foreign objects, 3 cases involved discovery of the object in the victim's body ($n = 2$ single cases and $n = 1$ serial case) and 2 involved the object being removed by the offender from the crime scene ($n = 1$ case each in the single and serial groups, respectively). This variable (OBJFOUND) was also omitted from the analysis.

The Chi-square examining for differences between prostitute homicide victim groups with regard to victim torture was not interpreted due to 1 cell having an expected count of less than 5 cases. Interestingly, the serial group had a higher proportion of cases involving victim torture (8 of 11 cases or 72.7%) than the single group (3 of 11 cases or 27.3%). However, serial victims also comprised the majority of victims who were not tortured (59 of 101 cases or 58.4%) as compared to single victims (42 of 101 cases or 41.6%). As such, the above pattern may be attributable to subsample size differences ($n = 45$ single victims and $n = 67$ serial victims, respectively). This variable (VTORTURE) was removed from the analysis. As shall be explained, it was included in a new summary variable.

No significant differences between victim groups were found in relation to the

perpetrator's mutilation of the victim, $\chi^2(1, n = 120) = 0.61, p = .44$. Among those victims whose bodies were mutilated, the greatest percentage (15 of 22 cases or 68.2%) were serial victims as compared to single victims (7 of 22 cases or 31.8%). This variable (MUTILATE) was dropped from the analysis but was included as a component of a new summary variable.

The variables (RESTRAIN), (VTORTURE), and (MUTILATE) were collapsed into the new summary variable (PASSLTVI), which was positively coded for the endorsement of any of these components. No significant differences were found between the prostitute homicide victim groups with respect to these forms of assault, $\chi^2(1, n = 116) = 0.84, p = .36$. Again, the serial victims evidenced a higher percentage of cases involving restraints, torture, and/or mutilation (23 of 34 cases or 67.6%) than the single victims (11 of 34 cases or 32.4%). Within the single victim subsample the majority of prostitute victims were not assaulted in these ways (34 of 45 cases or 75.6%) as compared to those who were (11 of 45 victims or 24.4%). As compared to the latter figure, the serial victim subsample evidenced a larger percentage of victims who were restrained, tortured, and/or mutilated (23 of 71 cases or 32.4%), although most were not victimized in these ways (48 of 71 cases or 67.6%). This summary variable (PASSLTVI) was retained, despite its nonsignificance, in the multivariate analyses.

Serial murderers engaged in postmortem sex (necrophilia) with the victim's body significantly more frequently (16 of 19 cases or 84.2%) than the single victims (3 of 19 cases or 15.8%), $\chi^2(1, n = 77) = 10.52, p = .001$. Conversely, the single perpetrators were significantly more likely not to engage in necrophilia (34 of 58 cases or 58.6%) than were the serial offenders (24 of 58 cases or 41.4%). The odds ratios reveal that serial

murderers were over 7 ½ times more likely (OR = 7.56) to have engaged in necrophilia with the victim's body than were the single murderers. On the other hand, the single perpetrators were only 0.13 times as likely as the serial perpetrators to engage in postmortem sexual intercourse with the victim's body as compared to the serial perpetrators. Overall, however, few offenders engaged in necrophilia (19 of 77 cases or 24.7%) as compared to the large proportion that did not (58 of 77 cases or 75.3%). This variable (SEXWBODY) was retained in the multivariate analyses.

Because no occurrences of perpetrator cannibalism with the victim's body were documented, a Chi-square could not be computed due to multiple empty cells. This variable (CANNIBAL) was deleted from the analysis. No significant differences between victim groups were found in relation to the perpetrator committing other unusual forms of assault on the victim's body (e.g., running over the body with a vehicle; exploring, probing, and/or mutilating wounds and/or body cavities; and other strange attacks on the corpse), $\chi^2(1, n = 121) = 0.13, p = .72$. Again, this behavior was infrequently encountered in the overall sample (30 of 121 cases or 24.8%), with most cases coded negatively for its presence (91 of 121 cases or 75.2%). Among the victims who were assaulted in this fashion, a slightly greater percentage were serial cases (17 of 30 victims or 56.7%) as compared to single cases (13 of 30 cases or 43.3%). This variable (OTRASSLT) was removed from the analysis.

No significant differences between the single and serial prostitute homicide victims were found with respect to depersonalization, $\chi^2(1, n = 108) = 1.36, p = .24$. Overall, equal percentages of prostitute victims were depersonalized or not depersonalized in the sample (54 of 108 victims in each category or 50.0%). The serial

victim group had the highest percentage of cases involving depersonalization (34 of 54 cases or 63.0%) as compared to the serial group (20 of 54 cases or 37.0%). Within the single victim subsample, more victims were not depersonalized (26 of 46 cases or 56.5%) than those who were depersonalized (20 of 46 cases or 43.5%). Conversely, within the serial victim subsample, the perpetrators depersonalized the victims more frequently (34 of 62 cases or 54.8%) than not depersonalizing them (28 of 62 cases or 45.2%). This variable (DEPERSON) was dropped from the analysis.

Perpetrator Attempts to Delay Identification/Destroy Evidence Block:

No statistical comparison could be performed between the single and serial perpetrators with respect to disfiguring the victim's body in an attempt to prevent or delay her identification. Specifically, the Chi-square was invalid because 1 cell had an expected count of less than 5 cases. Overall, the majority of cases in the sample (109 of 120 cases or 90.8%) did not involve efforts to delay identification. Only 11 occurrences of this behavior were recorded (or 9.2% of the sample), with similar percentages of cases found in the victim groups (5 of 11 cases or 45.5% in the single group and 6 of 11 cases or 54.5% in the serial group, respectively). This variable (DELAYID) was dropped from the analysis. The Chi-square pertaining to the removal of the victim's head as a means of delaying identification was invalid due to 2 cells having expected frequencies of less than 5 cases. Of the very few ($n = 5$) decapitations that were documented, almost all (4 of 5 cases or 80%) were in the serial group as compared to the single group (1 of 5 cases or 20.0%). This variable (HEAD) was removed from the analysis, but, as shall be explained, was incorporated into a summary variable.

Similarly, the Chi-square assessing differences between victim groups in relation

to the removal of a breast or breasts was invalid due to 2 cells having expected counts of less than 5 cases. Again, serial offenders more frequently disfigured their victims in this manner (4 of 6 cases or 66.7%) than the single offenders (2 of 6 cases or 33.3%). This variable (BREAST) was omitted from the analysis but was collapsed into a summary variable. Of the 2 cases involving the removal of the victim's genitalia, each victim group contained 1 occurrence. The corresponding Chi-square was invalid due to 2 cells having expected counts of less than 5 cases, and this variable (GENITAL) was removed from the analysis. However, it was in the aforementioned summary variable. Furthermore, the Chi-square pertaining to the removal of the victim's extremities (i.e., hand(s), foot/feet, arm(s), toe(s), and/or finger(s)) could not be interpreted due to 2 cells having expected counts of less than 5 cases. This form of disfigurement occurred in both victim groups more or less equally (2 of 5 single cases or 40.0% and 3 of 5 serial cases or 60.0%, respectively). This variable (EXTREMIT) was deleted from the analysis but was collapsed into a summary variable.

Because no positive occurrences of disembowelment were noted in either prostitute victim group, the Chi-square pertaining to this variable (INTORGAN) could not be computed, containing multiple empty cells. This variable was omitted from the subsequent multivariate analyses, but was included in a summary variable of all forms of victim disfigurement. Similarly, only 1 case involving the removal of other body parts (including the anus) was documented in the single victim group, making the calculation of a corresponding Chi-square impossible due to 2 cells having expected counts of less than 5 cases (including 1 empty cell). This variable (OTRPARTS) was removed from the analysis.

However, (OTRPARTS) was included, along with the variables (HEAD), (BREAST), (GENITAL), (EXTREMIT), and (INTORGAN), in the calculation of a new summary variable (BODYPRT2) which was coded positive for the endorsement of any of these component items. No significant differences were found between victim groups with respect to any form of dismemberment or disembowelment, $\chi^2(1, n = 122) = 1.76, p = .18$. Overall, the majority of victims were not disfigured in this manner (106 of 122 cases or 86.9%) as compared to those that were disfigured in this manner (16 of 122 cases or 13.1%). Among those victims who were disfigured by the perpetrator, the serial victim group contained a greater percentage of cases (12 of 16 cases or 75.0%) than the single victim group (4 of 16 cases or 25.0%). Despite its nonsignificance, this summary variable (BODYPRT2) was retained in the multivariate analyses in light of this interesting pattern in the data.

No significant differences were found between the homicide victim groups with regard to the offender destroying or removing crime scene evidence, $\chi^2(1, n = 122) = 0.81, p = .37$. The majority of offenders in the sample tampered with crime scene evidence (90 of 122 cases or 73.8%) as compared with those that did not tamper with evidence (32 of 122 cases or 26.2%). The serial offenders more frequently tampered with the crime scene in this fashion (56 of 90 cases or 62.2%) as compared to the single offenders (34 of 90 cases or 37.8%). However, similar proportions of offenders in each subsample tampered with crime scene evidence (34 of 49 single cases or 69.4% in the single subsample and 56 of 73 serial cases or 76.7% in the serial subsample). It is interesting to note that a majority of the offenders in the total sample (90 of 122 cases or 73.8%) destroyed or removed crime scene evidence as compared to those offenders who

did not engage in this behavior (32 of 90 cases or 35.6%). This variable (TAMPERED) was omitted from the analysis.

Perpetrator Activities at Crime Scene Block:

No significant differences were found between the single and serial perpetrators with respect to engaging in ritualistic activity at the crime scene (e.g., urination and/or defecation, creating rock formations, burning candles, or other bizarre activities), $\chi^2(1, n = 116) = 2.26, p = .13$. The majority of cases in the sample did not involve such rituals (100 of 116 cases or 86.2%) as compared to those that did involve rituals (16 of 116 cases or 13.8%). However, the serial perpetrators had a higher percentage of cases evidencing this behavior (12 of 16 cases or 75.0%) than the single perpetrators (4 of 16 cases or 25.0%). This variable was retained in the analysis, despite its nonsignificance, due to this interesting pattern in the data. The Chi-square assessing differences between the single and serial murderer groups with regard to drawing or carving on the victim's body was invalid due to 2 cells having expected counts of less than 5 cases. Of the few instances where this perpetrator behavior was observed ($n = 6$), each perpetrator group contained the same percentage of cases ($n = 3$ or 50.0%). This variable (CARVING) was omitted from the analysis. No Chi-square crosstabulation could be performed for the variable describing perpetrator drawing elsewhere at the crime scene (DRAWING) because there were no documented instances of this behavior, leaving empty cells. This variable was also deleted from the analysis.

Perpetrator's Use of Weapons Block:

No significant differences were found between the single and serial perpetrators with respect to using a firearm in the prostitute homicide, $\chi^2(1, n = 121) = 0.07, p = .80$.

Serial perpetrators had a slightly higher percentage of homicides involving firearms (8 of 14 cases or 57.1%) than the single perpetrators (6 of 14 cases or 42.9%), although this pattern may be attributable to unbalanced subsample sizes ($n = 48$ single cases and $n = 73$ serial cases, respectively). This variable (FIREARM) was removed from the analysis.

Single offenders, however, were significantly more likely to use a stabbing or cutting weapon during the homicide (26 of 48 cases or 54.2%) than the serial offenders (22 of 48 cases or 45.8%), $\chi^2(1, n = 121) = 6.17, p = .01$. Conversely, the serial murderers were significantly less likely not to use a stabbing or cutting weapon during the homicide (50 of 73 cases or 68.5%) than the single offenders (23 of 73 cases or 31.5%). Within the perpetrator subsamples, these patterns were replicated. Specifically, within the single offender group, slightly more offenders utilized a stabbing or cutting weapon (26 of 49 cases or 53.1%) than those who did not use such a weapon (23 of 49 cases or 46.9%). Conversely, within the serial offender subsample the majority of individuals did not use a stabbing or cutting weapon (50 of 72 cases or 69.4%) as compared to those who did use this type of weapon (22 of 72 cases or 30.6%). The odds ratios reveal that single perpetrators were 2.57 times more likely than serial perpetrators to use a stabbing or cutting weapon. On the other hand, serial murderers were slightly more than 1/3 as likely (OR = 0.39) as single murderers to use a stabbing or cutting weapon during the homicide. This variable (CUTWEAPN) was retained in the analysis.

The single and serial perpetrators did not differ significantly with respect to utilizing a bludgeon (e.g., rock, club, brick, etc.) during the homicide, $\chi^2(1, n = 119) = 0.26, p = .61$. Serial offenders did have a higher percentage of cases where a bludgeon was utilized (14 of 22 cases or 63.6%) as compared to the single offenders (8 of 22 cases

or 36.4%). However, as described under the variable (FIREARM) above, this finding may be an artifact of unequal perpetrator sample sizes ($n = 49$ single cases and $n = 70$ serial cases, respectively). This variable (BLUDGEON) was omitted from the analysis.

There were no significant differences found between the single and serial murderers in relation to using a ligature during the homicide, $\chi^2(1, n = 120) = 0.29, p = .59$. Again, the serial offenders more frequently utilized a ligature (17 of 26 cases or 65.4%) than the single offenders (9 of 26 cases or 34.6%). This pattern, like the ones described above, must be interpreted with caution due to the unequal perpetrator subsample sizes ($n = 47$ single cases and $n = 73$ serial cases, respectively). This variable (LIGATURE) was removed from the analysis.

Serial perpetrators significantly more frequently used their hands or feet as weapons during the homicide (47 of 70 cases or 67.1%) than the single perpetrators (23 of 70 cases or 32.9%), $\chi^2(1, n = 117) = 5.83, p = .02$. Conversely, single offenders used their hands or feet significantly less often (26 of 47 cases or 55.3%) than the serial offenders (21 of 47 cases or 44.7%). Within the single murderer subsample, hands or feet were most often not utilized in prostitute homicides (26 of 49 cases or 53.1%) in comparison to those instances where they were utilized as weapons (23 of 49 cases or 46.9%). However, within the serial murderer subsample, more offenders utilized their hands or feet as weapons (47 of 68 cases or 69.1%) as compared to those who did not use them as weapons (21 of 68 cases or 30.9%). The odds ratios indicate that serial perpetrators were 2 ½ times more likely (OR = 2.53) than single perpetrators to use their hands or feet as weapons during the homicide. Conversely, the single offenders were only 0.40 times as likely as the serial offenders to use their hands or feet as weapons.

This variable (HANDFEET) was retained in the multivariate analyses.

The Chi-square pertaining to other weapons used by the offender during the commission of the homicide could not be interpreted due to 2 cells having expected counts of less than 5 cases. Among the few cases where other weapons were used, most were documented in the serial offender group (5 of 6 cases or 83.3%) as compared to the single offender group (1 of 6 cases or 16.7%). This variable (OTRWEAPN) was dropped from the analysis. Similarly, the Chi-square examining differences between perpetrator groups with respect to the type of weapon (excluding hands or feet) utilized in the homicide (i.e., a weapon of opportunity and/or a weapon of choice) was invalid due to 2 cells having expected counts of less than 5 cases. Serial offenders had a higher percentage of cases involving a weapon of opportunity (18 of 31 cases or 58.1%) as contrasted to the single offenders (13 of 31 cases or 41.9%). The single and serial perpetrators had equal percentages of individuals who utilized weapons of choice (19 of 38 cases each or 50.0%) as well as both weapons of opportunity and weapons of choice (3 of 6 cases each or 50.0%). Within the single offender subsample, slightly more perpetrators utilized weapons of choice (19 of 35 cases or 54.3%) than weapons of opportunity (13 of 35 cases or 37.1%). Within the serial murderer subsample, nearly equal numbers of offenders utilized weapons of opportunity (19 of 40 cases or 47.5%) and weapons of choice (18 of 40 cases or 45.0%). This variable (WEAPNTY2) was dropped from the analysis.

No significant differences were found between the single and serial murderers in relation to whether or not the murder weapon (excluding hands or feet) was recovered, $\chi^2(1, n = 110) = 0.28, p = .87$. Serial offenders had a slightly higher number of cases

involving the weapon being recovered at the crime scene (17 of 32 cases or 53.1%) as compared to the single offenders (15 of 32 cases or 46.9%). Similarly, the serial murderers had a higher percentage of cases where the weapon was not recovered (17 of 31 cases or 54.8%) as compared to the single murderers (14 of 31 cases or 45.2%). However, these differences may have been attributable to the unbalanced perpetrator subsample sizes ($n = 46$ single offenders and $n = 64$ serial offenders, respectively). Of the 15 cases where the murder weapon was recovered elsewhere, the cell totals across perpetrator groups were nearly the same (8 of 15 single cases or 53.3% and 7 of 15 serial cases or 46.7%, respectively). This variable (WEAPNLO2) was omitted from the analysis.

Body Disposal Form:

Body Recovery Site Block:

No significant differences were found between the single and serial prostitute homicide victim groups with respect to the description of the body recovery (disposal) site area, $\chi^2(1, n = 121) = 0.37, p = .83$. A larger percentage of serial victims were found in urban areas (51 of 87 cases or 58.6%) than single victims (36 of 87 cases or 41.4%). A greater proportion of serial victims were also recovered in suburban areas (10 of 15 cases or 66.7%) than single victims (5 of 15 cases or 33.3%). Similarly, a greater percentage of serial victims' bodies were left in rural locations (11 of 19 cases or 57.9%) than those of the single victims (8 of 19 cases or 42.1%). However, these patterns may be attributable to differences between the respective subsample sizes ($n = 49$ single victims and $n = 72$ serial victims). Within each subsample, the majority of prostitute victims were recovered

in urban areas (36 of 49 single victims or 73.5% and 51 of 72 serial victims or 70.8%). Overall, the majority of prostitute victims were recovered in urban areas (87 of 121 victims or 71.9%). This variable (DESCRBRS) was removed from the analysis.

The Chi-square pertaining to the description of the neighborhood of the body recovery site could not be interpreted due to 2 cells having expected counts of less than 5 cases. Serial victims were more frequently recovered in residential areas (41 of 63 cases or 65.1%) than single victims (22 of 63 cases or 34.9%). In addition, serial homicide victims were recovered slightly more frequently in uninhabited or wilderness areas (10 of 17 cases or 58.8%) than were single homicide victims (7 of 17 cases or 41.2%). Similarly, a greater percentage of serial victims were disposed of in business, industrial, or commercial areas (19 of 36 cases or 52.8%) than were single victims (17 of 36 victims or 47.2%). However, as previously mentioned, these patterns may be an artifact of the unbalanced homicide victim group subsamples ($n = 49$ single victims and $n = 73$ serial victims, respectively). Both groups had equal percentages of victims (3 of 6 cases each or 50.0%) recovered in farm or agricultural areas. Within the single victim subsample, most victims were recovered in residential (22 of 49 cases or 44.9%) and business, industrial, or commercial (17 of 49 cases or 34.7%) areas. Within the serial victim subsample, a larger percentage of victims were disposed of in residential areas (41 of 73 cases or 56.2%) followed by business, industrial, or commercial areas (19 of 73 cases or 26.0%). This variable (NEIGHBRS) was omitted from the analysis.

No significant differences were found between the victim groups with regard to descriptions of specific body recovery locations, $\chi^2(1, n = 123) = 4.92, p = .30$. The single group had a slightly higher proportion of victims recovered in a residence or

hotel/motel (16 of 31 cases or 51.6%) than the serial group (15 of 31 cases or 48.4%). Serial victims were more frequently recovered in public areas (school/playground, retail shopping district, or public street) than the single victims (12 of 20 serial victims or 60.0% versus 8 of 20 single victims or 40.0%, respectively). Equal percentages of single and serial victims ($n = 9$ in each group or 50.0%) were disposed of in vice-associated areas (vacant building, alley, crack house/drug den, established vice area, or neighborhood/nonstroll area, or in a vehicle). Serial victims were also more frequently recovered in densely wooded areas, open fields, or in water (e.g., pond, lake, river, stream, or culvert) than were the single victims (12 of 17 serial victims or 70.6% versus 5 of 17 single victims or 29.4%, respectively).

Lastly, the serial victims were more frequently disposed of in "other" areas (e.g., next to roads or highways, in construction areas, under bridges, in ravines or riverbeds, in parking lots, in parks or overgrown areas, in dumpsters or other containers, in warehouses, etc.) than were single victims (26 of 37 single cases or 70.3% versus 11 of 37 single cases or 29.7%). Within the single victim subsample, most victims were recovered in a residence or hotel/motel (16 of 49 cases or 32.7%), followed by "other" areas (11 of 49 cases or 22.4%). Conversely, within the serial victim subsample, the majority of prostitute victims were recovered in "other" areas (26 of 74 cases or 35.1%), followed by residences or hotels/motels (15 of 74 victims or 20.3%). This variable (BRSPLAC2), which had been previously recoded with categories collapsed, was removed from the analysis.

No significant differences were found between victim groups in relation to whether or not the body recovery site was located within any vice area (i.e., within either

an established vice area or within a neighborhood/nonstroll area), $\chi^2(1, n = 123) = 2.79, p = .10$. The majority of victims (96 of 123 cases or 78.0%) were disposed of in nonvice areas as compared to those disposed of in vice areas (27 of 123 cases or 22.0%). Serial victims had a higher percentage of cases with bodies recovered in vice areas (20 of 27 cases or 74.1%) than the single victims (7 of 27 cases or 25.9%). However, a greater proportion of serial victims were also disposed of in non-vice areas (54 of 96 cases or 56.3%) than single victims (42 of 96 cases or 43.8%). Within each victim subsample, the majority of victims' bodies were recovered in non-vice area locations (42 of 49 single victims or 85.7% and 54 of 74 serial victims or 73.0%, respectively). This variable (BRSAREA2), which contained collapsed vice categories (i.e., stroll area and neighborhood/nonstroll area) to increase meaning, was dropped from the analysis.

Murder Site Block:

In serial prostitute homicide cases, the body recovery site and the murder site were significantly more likely (36 of 50 cases or 72.0%) not to be the same location (i.e., were different locations) as compared with single prostitute homicide cases (14 of 50 cases or 28.0%), $\chi^2(1, n = 122) = 5.22, p = .02$. Both victim groups had similar percentages of cases where the body disposal and murder sites were the same (35 of 72 cases or 48.6% of single victims and 37 of 72 cases or 51.4% of serial victims, respectively). Within the single victim subsample, most cases involved the body disposal and murder sites being the same (35 of 49 cases or 71.4%) as compared to being different (14 of 49 cases or 28.6%). Interestingly, the serial victim subsample evidenced similar percentages of cases having different murder and body disposal sites (36 of 73 cases or 49.3%) as well as the same locations (37 of 73 cases or 50.1%). The odds ratios indicate

that single homicides were nearly 2 ½ times more likely (OR = 2.43) to have the murder and disposal sites the same than serial homicides. Conversely, serial homicides were less than ½ times more likely (OR = 0.41) than single homicides to have the murder and body disposal sites the same. This variable (BRSSAME) was retained in the analysis.

The Chi-square examining differences between homicide victim groups in relation to the general description of the murder site area could not be interpreted due to 1 cell having an expected count of less than 5 cases. Overall, most victims were killed in urban areas (87 of 111 cases or 78.4%). A higher percentage of single victims were murdered in rural areas (7 of 10 victims or 70.0%) than were serial victims (3 of 10 victims or 30.0%). A higher proportion of serial victims were killed in urban areas (50 of 87 cases or 57.5%) than were single victims (37 of 87 cases or 42.5%). Similarly, a slightly larger proportion of serial victims (9 of 14 cases or 64.3%) were killed in suburban areas than were single victims (5 of 14 cases or 35.7%). However, these patterns could be attributable to the unbalanced victim subsample sizes ($n = 49$ single victims and $n = 62$ serial victims, respectively). This variable (DESCRMS) was omitted from the analysis.

No statistical comparison between the single and serial prostitute homicide victim groups could be performed with regard to the neighborhood description of the murder site. Specifically, the corresponding Chi-square crosstabulation contained 4 cells with expected counts of less than 5 cases. Overall, a majority of victims were killed in residential neighborhoods (60 of 109 cases or 55.0%) with a lesser percentage killed in business, industrial, or commercial areas (38 of 109 cases or 34.9%). Serial victims were more frequently murdered in business, industrial, or commercial areas (21 of 38 cases or

55.3%) than were single victims (17 of 38 cases or 44.7%). Further, a higher percentage of serial victims were killed in residential areas (36 of 60 cases or 60.0%) as compared to single victims (24 of 60 cases or 40.0%). A slightly higher percentage of single victims (5 of 8 cases or 62.5%) were killed in uninhabited or wilderness areas than were serial victims (3 of 8 cases or 37.5%). Of the 3 victims murdered in farm or agricultural areas, 2 were single victims and 1 was a serial victim. As mentioned above, these data patterns must be viewed tentatively in light of the unequal subsample sizes ($n = 48$ single victims and $n = 61$ serial victims, respectively). This variable (NEIGHMS) was removed from the analysis.

No significant differences between victim groups were found in relation to specific murder site location, $\chi^2(1, n = 109) = 0.53, p = .91$. More serial victims were killed in a residence, hotel, or motel (28 of 58 cases or 56.0%) than single victims (22 of 50 cases or 44.0%). Equal numbers of victims from each group ($n = 7$ of 14 cases each or 50.0%) were killed in public areas (school/playground, retail shopping district, or public street). A higher percentage of serial victims were killed in vice-associated areas (vacant building, alley, crack house/drug den, established vice area, neighborhood/nonstroll area, or in a vehicle) than were single victims (13 of 21 cases or 61.9% serial victims versus 8 of 21 cases or 38.1% single victims, respectively). Again, a slightly higher number of serial victims (13 of 24 cases or 54.2%) were killed in "other" areas (e.g., next to roads or highways, in ditches, in construction areas, under bridges, in ravines or riverbeds, in parking lots, in parks or overgrown areas, in containers, in garages or warehouses, etc.) than were single victims (11 of 24 cases or 45.8%). This variable (MSPLACE2) - which had been previously recoded with variables collapsed -

was removed from the analysis.

The serial homicide victims were significantly more likely to have been killed (21 of 28 cases or 75.0%) in any vice area (i.e., stroll or neighborhood/nonstroll area) than the single victims (7 of 28 cases or 25.0%), $\chi^2(1, n = 109) = 5.54, p = .02$. However, most victims were killed in nonvice areas (81 of 109 cases or 74.3%) as compared to those killed in vice areas (28 of 109 cases or 25.7%). There were essentially equal percentages of victims killed in non-vice areas (41 of 81 single cases or 50.6% and 40 of 81 serial cases or 49.4%, respectively). Within the single victim subsample, a majority of victims were killed in non-vice areas (41 of 48 victims or 85.4%) as opposed to vice areas (7 of 48 victims or 14.6%). By comparison, within the serial victim subsample, a higher percentage of prostitutes were killed in vice areas (21 of 61 cases or 34.4%), although most were killed in non-vice areas (40 of 61 cases or 65.6%). The odds ratios indicate that the serial victims were over 3 times more likely (OR = 3.08) than the single victims to have been murdered in any vice area. On the other hand, the single homicide victims were only 1/3 times more likely (OR = 0.33) than the serial victims to have been killed in a vice area. This variable (MSAREA2), which had been recoded to enhance meaningfulness, was retained in the analysis.

Initial Encounter Site Block:

No significant differences were found between the homicide victim groups with respect to the initial encounter site and murder sites being the same, $\chi^2(1, n = 107) = 1.86, p = .17$. Overall, the majority of cases involved different initial encounter and murder site locations (89 of 107 cases or 83.2%) versus the same location (18 of 107 cases or 16.8%). The serial group had a higher percentage of cases where the initial encounter

and murder sites were different (55 of 89 cases or 61.8%) as compared to the single victim group (34 of 89 cases or 38.2%). The single victim group evidenced a slightly greater percentage of cases where the initial encounter and murder sites were the same (10 of 18 cases or 55.6%) than the serial victim group (8 of 18 cases or 44.4%). However, within the subsamples the majority of cases involved different encounter and murder site locations (34 of 44 single victim cases or 77.3% and 55 of 63 serial victim cases or 87.3%, respectively). This variable (ICSSAME) was removed from the analysis.

The Chi-square examining differences between victim groups in relation to the description of the initial encounter site area was invalid due to 2 cells having expected counts of less than 5 cases. The majority of all victims encountered the perpetrator in urban areas (94 of 108 cases or 87.0%). The serial victims more frequently met the perpetrator in urban areas (57 of 94 cases or 60.6%) than the single victims (37 of 94 cases or 39.4%). A slightly higher percentage of serial victims (8 of 13 victims or 61.5%) encountered the offender in suburban areas than single victims (5 of 13 victims or 38.5%). Only 1 victim, falling in the serial group, was encountered in a rural area. Within the subsamples, the majority of victims met the perpetrator in an urban area (37 of 42 single victims or 88.1% and 57 of 66 serial victims or 86.4%, respectively). However, as mentioned elsewhere, these patterns may be attributable to unbalanced subsample sizes ($n = 42$ single victims and $n = 66$ serial victims, respectively). This variable (DESCRICS) was dropped from the analysis.

The Chi-square pertaining to the description of the neighborhood where the perpetrator encountered the victim was also invalid due to 4 cells having expected counts of less than 5 cases. Overall, most victims met the perpetrator in business, industrial, or

commercial areas (59 of 104 victims or 56.7%) followed by residential areas (43 of 104 victims or 41.3%). Serial offenders more frequently met victims in business, industrial, or commercial areas (37 of 59 cases or 62.7%) than single offenders (22 of 59 cases or 37.3%). Additionally, the serial perpetrators met their victims slightly more often in residential areas (23 of 43 cases or 53.5%) than the single perpetrators (20 of 43 cases or 46.5%). Lastly, the serial victims had the only recorded instances of meeting victims in either farm/agricultural areas ($n = 1$ case) or in uninhabited/wilderness areas ($n = 1$ case). Within the subsamples, most victims encountered the offender in business, industrial, or commercial areas (22 of 42 single victims or 52.4% and 37 of 62 serial victims or 59.7%, respectively), followed by residential areas (20 of 42 single victims or 47.6% and 23 of 62 serial victims or 37.1%, respectively). The aforementioned patterns in the data must be interpreted with caution in light of the unbalanced subsample sizes ($n = 42$ single victims and $n = 62$ serial victims, respectively). This variable (NEIGHICS) was removed from the analysis.

There were significant differences found between the single and serial prostitute victim groups with respect to specific encounter site locations, $\chi^2(1, n = 108) = 16.79, p = .002$. Single victims were significantly more likely to have encountered the perpetrator in a residence, hotel, or motel (15 of 20 cases or 75.0%) than the serial victims (5 of 20 cases or 25.0%). Serial victims were significantly more likely to have met the offender in a public street (16 of 28 cases or 57.1%) as compared to single victims (12 of 28 cases or 42.9%). Further, serial prostitute victims were significantly more likely to have encountered the offender in either an established vice area (23 of 31 cases or 74.2%) or a neighborhood/nonstroll area (12 of 14 cases or 85.7%) than were the single prostitute

victims (8 of 31 cases or 25.8% in an established vice area and 2 of 14 cases or 14.3% in a neighborhood/nonstroll area, respectively). Lastly, serial victims significantly more often met homicide offenders (9 of 15 cases or 60.0%) in “other” areas (e.g., near a school/playground, in a retail shopping district, in a vacant building, in a bar/tavern, at a bus stop/taxi stand, in a park, in a church, in a river gorge, at a lakefront area, exiting a liquor store, etc.) as compared to the single victims (6 of 15 cases or 40.0%).

Interestingly, within the subsamples, the single victims most frequently met perpetrators in a residence, hotel, or motel (15 of 43 cases or 34.9%) while the serial victims most frequently met perpetrators in an established vice area (23 of 65 cases or 35.4%). This previously recoded variable (ICSPLAC2), whose categories had been collapsed to enhance meaning, was retained in the multivariate analyses.

The variable (ICSPLAC2) was dummy-coded into several parameters that were examined in relation to the single and serial victim groups. The Chi-square and odds ratio corresponding to the category “residence/hotel/motel” (parameter ICS_RES) were statistically significant, $\chi^2(1, n = 108) = 12.68, p = .0001$. Within the victim group subsamples, a greater percentage of single victims initially encountered the perpetrator in a residence, hotel, or motel (15 of 43 single cases or 34.9%) than serial victims (5 of 65 serial victims or 7.7%). Conversely, a higher percentage of serial victims did not first encounter the offender in these settings prior to death (60 of 65 serial victims or 92.3%) than single victims (28 of 43 single victims or 65.1%). The odds ratio for this parameter shows that single victims were almost 6 1/2 times more likely (OR = 6.43) to initially encounter the perpetrator in a residence, hotel, or motel than the serial victims.

Conversely, the serial victims were only 0.16 times as likely as the single victims to first

meet the perpetrator in these locations.

Next, the Chi-square and odds ratios corresponding to the “public street” category (parameter ICS_ST) of variable (ICSPLAC2) were not significant, $\chi^2(1, n = 108) = 0.15$, $p = .70$. However, as previously mentioned, because the parameter’s parent variable (ICSPLAC2) was statistically significant, the odds ratios will be reported. Specifically, the single victims were 1.19 times as likely as serial victims to be initially encountered by the perpetrator in a public street. Conversely, the serial victims were slightly more than 3/4 times as likely (OR = 0.84) as the single victims to encounter the perpetrator in a public street.

Similarly, the Chi-square and odds ratios with respect to the “established vice area” category (parameter ICS_VICE) were not significant, $\chi^2(1, n = 108) = 3.56$, $p = .06$. The odds ratios, however, are informative. In particular, the serial victims were almost 2 ½ times as likely (OR = 2.40) as the single victims to first meet the perpetrator in an established vice area. On the other hand, the single prostitute victims were less than ½ as likely (OR = 0.42) as the serial prostitute victims to initially encounter the perpetrator in an established stroll area.

Lastly, the Chi-square crosstabulation and odds ratio pertaining to the “neighborhood/nonstroll area” category (parameter ICS_NBHD) of variable (ICSPLAC2) were also significant, $\chi^2(1, n = 108) = 4.38$, $p = .04$. Despite small cell sizes, the serial victim subsample had a higher proportion of victims who initially encountered the offender in a neighborhood/nonstroll area (12 of 65 serial cases or 18.5%) than the single group (2 of 43 serial victims or 15.2%). Conversely, the single victim subsample had a greater percentage of victims who did not meet the perpetrator in

a neighborhood/nonstroll area (41 of 53 single cases or 95.3%) as compared to the serial victim subsample (53 of 65 serial cases or 81.5%). The corresponding odds ratio indicates that serial victims were over 4 ½ times more likely (OR = 4.64) to meet homicide offenders in neighborhood/nonstroll areas than single victims, who were less than 1/4 as likely (OR = 0.22) as serial victims to meet the perpetrators in these locations.

The serial homicide victims were significantly more likely (47 of 63 cases or 74.6%) to have encountered the perpetrator in any vice area (i.e., in an established vice area or in a neighborhood/nonstroll area) than the single victims (16 of 63 cases or 25.4%), $\chi^2(1, n = 108) = 13.12, p = .0001$. Conversely, the single prostitute homicide victims were significantly more likely to have met the perpetrator in a non-vice area (27 of 45 cases or 60.0%) than the serial prostitute homicide victims (18 of 45 cases or 40.0%). The odds ratios show that serial victims were nearly 4 ½ times more likely (OR = 4.41) than single victims to have encountered the perpetrator in any vice area. Conversely, the single victims had a likelihood of less than 1/4 (OR = 0.23) of encountering the perpetrator in any vice area in comparison with the serial victims. This variable (ICSAREA2) – which had been recoded and categories collapsed to increase meaning – was retained in the analysis.

Last Known Location Block:

No significant difference was found between the single and serial prostitute homicide victim groups with respect to the last known location being the same as the initial encounter site, $\chi^2(1, n = 88) = 0.22, p = .64$. Overall, a slightly higher percentage of cases in the total sample had these sites the same (47 of 88 victims or 53.4%) rather than different (41 of 88 victims or 46.6%). Both groups had similar proportions of cases

where the last known location and the initial encounter site were the same (23 of 47 single cases or 48.9% and 24 of 47 serial cases or 51.1%, respectively). However, in a greater percentage of serial cases these locations were not the same (23 of 41 cases or 56.1%) as compared to the single cases (18 of 41 cases or 43.9%). On the other hand, proportionally, the single subsample had a slightly greater percentage of cases where the sites were the same (23 of 41 single cases or 56.1%) than the serial subsample (24 of 47 serial cases or 51.1%). This variable (LKLSAME) was omitted from the analysis.

The Chi-square examining victim group differences with regard to the description of the area of the last known location site was invalid due to 2 cells having expected counts of less than 5 cases. Overall, a majority of victims (96 of 114 cases or 84.2%) were last seen in rural areas. A slightly greater percentage of single victims were last seen in rural areas (3 of 4 cases or 75.0%) than serial victims (1 of 4 cases or 25.0%). A higher proportion of serial prostitute victims were last seen in urban areas (57 of 96 cases or 59.4%) as compared to single victims (39 of 96 cases or 40.6%). Additionally, there were a higher percentage of serial victims last seen in suburban areas (10 of 14 cases or 71.4%) than single victims (4 of 14 cases or 28.6%). Within the subsamples, the majority of victims were last seen in urban areas (39 of 46 single victims or 84.8% and 57 of 68 serial victims or 83.8%, respectively). However, these patterns must be interpreted with caution in light of the unequal single and serial victim subsample sizes ($n = 46$ single victims and $n = 68$ serial victims, respectively). This variable (DESCRLKL) was deleted from the analysis.

Initially, no statistical comparison could be made between the single and serial victim groups in relation to the description of the neighborhood of the last known

location. The Chi-square for the variable (NEIGHLKL) was invalid due to 4 cells having expected frequencies of less than 5 cases (including 2 empty cells). Because only 1 serial victim was recorded who was last seen in a farm or agricultural area and because only 2 serial victims were last seen in uninhabited or wilderness areas these categories, containing low cell frequencies and empty cells, were removed, and the variable was recoded.

The new variable (NEIGHLK2) had a valid Chi-square, although no significant differences were found between the victim groups, $\chi^2(1, n = 109) = 2.83, p = .09$. Overall, only a slightly larger proportion of victims were last seen in business, industrial, or commercial areas (59 of 109 cases or 54.1%) than in residential areas (50 of 109 cases or 45.9%). A greater proportion of serial victims were last seen in business, industrial, or commercial areas (40 of 59 cases or 67.8%) than single victims (19 of 59 cases or 32.2%). Similar percentages of single and serial victims were last seen in residential areas (24 of 50 single cases or 48.0% and 26 of 50 serial cases or 52.0%). Within the single victim subsample, a larger percentage of victims were last seen in residential areas (24 of 43 cases or 55.8%) as compared to business, industrial, or commercial areas (19 of 43 cases or 44.2%). Conversely, in the serial victim subsample, the highest proportion of victims had last known locations in business, industrial, or commercial areas (40 of 66 cases or 60.6%) versus residential areas (26 of 66 cases or 39.4%). Again, the aforementioned findings could be attributable to unbalanced victim group subsample sizes ($n = 45$ single victims and $n = 67$ serial victims, respectively). Despite its nonsignificance, this variable (NEIGHLK2) was retained in the analysis in light of these interesting data patterns.

The single and serial prostitute homicide victim groups differed significantly with respect to various last known location areas, $\chi^2(1, n = 113) = 19.32, p = .001$. Single prostitute victims were significantly more likely to have been last seen in a residence, hotel, or motel (19 of 26 cases or 73.1%) than serial victims (7 of 26 victims or 26.9%). Serial victims were significantly more likely to have been last seen on a public street (18 of 28 cases or 64.3%) than single victims (10 of 28 cases or 35.7%). The serial group had a significantly greater percentage of victims who were last seen in established vice areas (23 of 30 cases or 76.7%) and in neighborhood/nonstroll areas (11 of 13 cases or 84.6%) than the single group (7 of 30 cases or 23.3% last seen in established vice areas and 2 of 13 cases or 15.4% last seen in neighborhood/nonstroll areas, respectively). Both groups had an equal percentage of victims (8 of 16 cases or 50.0%) who were last known to be in "other" areas prior to their deaths (i.e., school or playground, vacant building, crack house or drug den, open field, vehicle, or other locations). Within the victim group subsamples, most single victims were last seen in a residence, hotel, or motel (19 of 46 cases or 41.3%) while most serial victims were last seen in established vice areas (23 of 67 cases or 34.3%). This variable (LKLPLAC2) - which had been previously recoded with categories collapsed to increase meaning - was retained in the analysis.

The variable (LKLPLAC2) was dummy-coded into a series of parameters that were each assessed with respect to the single and serial victim groups. The Chi-square crosstabulation and odds ratio corresponding to the category "residence/hotel/motel" (parameter LKL_RES) were statistically significant, $\chi^2(1, n = 113) = 14.66, p = .0001$. Within the respective subsamples, a greater proportion of single victims were last seen in a residence, hotel, or motel (19 of 46 single cases or 41.3%) than serial victims (7 of 67

serial victims or 10.4%). Conversely, a higher percentage of serial victims were not last seen in a residence, hotel, or motel (60 of 67 serial victims or 89.6%) as compared to single victims (27 of 46 single victims or 58.7%). The corresponding odds ratio reveals that single victims were 6 times more likely (OR = 6.03) to be last seen in a residence, hotel, or motel than serial victims, who, themselves, were only 0.17 times as likely to be last seen in these locations as the single victims.

Next, the Chi-square crosstabulation and odds ratio pertaining to the “public street” category (parameter LKL_ST) of variable (LKLPLAC2) were not significant, $\chi^2(1, n = 113) = 0.39, p = .54$. However, as mentioned, the odds ratios will be reported in light of variable (LKLPLAC2)’s overall statistical significance across the victim groups. Specifically, single prostitute victims were only $\frac{3}{4}$ as likely (OR = 0.76) as serial victims to be last seen on a public street. On the other hand, serial prostitute victims were nearly $1 \frac{1}{3}$ times more likely (OR = 1.32) than single victims to be last seen on a public street.

Furthermore, the Chi-square and odds ratio corresponding to the “established vice area” category (parameter LKL_VICE) of variable (LKLPLAC2) were also significant, $\chi^2(1, n = 113) = 5.11, p = .02$. Within the prostitute victim subsamples, the serial group had a higher percentage of victims who were last seen in established vice areas (23 of 67 serial cases or 34.3%) than the single group (7 of 46 single victims or 15.2%).

Conversely, the single victim subsample had a greater proportion of victims who were not last seen in established vice areas (39 of 46 single cases or 84.8%) as compared to the serial subsample (44 of 67 serial cases or 65.7%). The related odds ratio indicates that serial victims were nearly 3 times more likely (OR = 2.91) to be last seen in established vice areas than single victims. On the other hand, the single victims were only about $\frac{1}{3}$

as likely (OR = 0.34) as serial victims to be last seen in an established vice area.

The Chi-square crosstabulation and odds ratio pertaining to the “nonstroll/neighborhood area” category (parameter LKL_NBHD) of variable (LKLPLAC2) were significant, $\chi^2(1, n = 113) = 3.90, p = .05$. Again, the serial victim subsample had a larger proportion of victims who were last seen in neighborhood/nonstroll areas (11 of 67 serial cases or 16.4%) than the single victim subsample (2 of 46 single cases or 4.3%). Conversely, the single victim subsample had a greater percentage of victims whose last known location was not a neighborhood/nonstroll area (44 of 46 single cases or 95.7%) as compared with the serial victim subsample (56 of 67 serial cases or 83.6%). The corresponding odds ratio suggests that serial victims were over 4 times as likely (OR = 4.32) to be last seen in neighborhood/nonstroll areas as single victims. On the other hand, single victims were approximately $\frac{1}{4}$ as likely (OR = 0.23) as serial victims to be last seen in a neighborhood/nonstroll area.

Lastly, the Chi-square and odds ratio corresponding to the “other” (e.g., school/playground, vacant building, crack house/drug den, open field, vehicle, or other area) last known location category (parameter LKL_OTH) were not significant, $\chi^2(1, n = 113) = 0.66, p = .41$. However, as mentioned, the odds ratios will be reported. Specifically, they reveal that single victims were over $1\frac{1}{2}$ times (OR = 1.55) more likely to be last seen in “other” areas than serial victims. Conversely, serial victims were approximately $\frac{2}{3}$ as likely (OR = .64) as single victims to be last seen in “other” areas.

The single and serial victim groups differed significantly with respect to whether or not they were last seen in any vice area (i.e., in an established vice area or in a

neighborhood/ nonstroll area), $\chi^2(1, n = 114) = 14.58, p = .0001$. Serial victims were significantly more likely to be last seen in any vice area (44 of 57 cases or 77.2%) than the single victims (13 of 57 victims or 22.8%). Conversely, the single victims were significantly more likely to have a last known location within a non-vice area (33 of 57 cases or 57.9%) as compared to the serial victims (24 of 57 cases or 42.1%). The odds ratios reveal that serial homicide victims were over 4 ½ times as likely (OR = 4.65) to have been last seen in any vice area than the single homicide victims. Conversely, the single victims were only 0.22 times more likely to have been last seen in any vice area as compared to the serial victims. This variable (LKLAREA2), which had categories collapsed to enhance meaning, was retained in the analysis.

Body Disposal/Crime Scene Behavior Description Block:

Serial murderers moved the victim's body from the murder site to the body disposal site significantly more frequently (38 of 53 cases or 71.7%) than the single murderers (15 of 53 cases or 28.3%), $\chi^2(1, n = 122) = 5.49, p = .02$. Overall, a slightly larger percentage of bodies were not moved in this fashion (69 of 122 cases or 56.6%) as compared to those that were moved (53 of 122 cases or 43.4%). There was virtually no difference in the percentage of victims' bodies that were not moved between the offender groups (34 of 69 single cases or 49.3% and 35 of 69 serial cases or 50.7%, respectively). Within the single offender subsample, most perpetrators did not move the victim's body to the disposal site from the murder site (34 of 49 cases or 69.4%) as compared to those who did engage in this behavior (15 of 49 cases or 30.6%). However, within the serial offender subsample, as compared to the single offender subsample, the victims' bodies were moved in a greater percentage of cases (38 of 73 cases or 52.1%), although nearly

the same percentage of bodies were not moved (35 of 73 cases or 47.9%). The odds ratios indicate that serial murderers were nearly 2 ½ times more likely (OR = 2.46) than single murderers to have moved the victim's body from the murder site to the disposal site. Conversely, the single perpetrators were less than ½ times as likely (OR = 0.41) as the serial perpetrators to have moved the victim's body in this fashion. This variable (MOVEBODY) was retained in the analysis.

No significant differences were found between the prostitute homicide victim groups with regard to how the victim's body was left by the offender, $\chi^2(1, n = 121) = 2.65, p = .26$. The majority of all victims' bodies were left without concern about discovery (75 of 121 victims or 62.0%). Serial offenders more frequently left their victims' bodies openly or intentionally displayed, to ensure discovery, than the single offenders (15 of 20 serial cases or 75.0% as compared with 5 of 20 single cases or 25.0%, respectively). The serial perpetrators also had a higher percentage of cases involving concealment of victims' bodies so as to prevent discovery than the single perpetrators (17 of 26 serial cases or 65.4% as compared with 9 of 26 single cases or 34.6%, respectively). Again, the single murderers disposed of their victims' bodies without concern as to whether or not they would be discovered in a greater number of cases (42 of 75 cases or 56.0%) than did the single murderers (33 of 75 cases or 44.0%).

Interestingly, within the single perpetrator subsample, the majority of victims were disposed of without concern about discovery (33 of 47 cases or 70.2%) as compared to being either openly displayed to ensure discovery (5 of 47 cases or 10.6%) or concealed to proscribe discovery (9 of 47 cases or 19.1%). Conversely, although most serial offenders disposed of their victims without apparent concern about whether or not

they would be discovered (42 of 74 cases or 56.8%), there were large percentages of cases where bodies were openly displayed to ensure discovery (15 of 74 cases or 20.3%) as well as concealed to prevent discovery (17 of 74 cases or 23.0%). However, as mentioned elsewhere, these patterns may be an artifact of the unbalanced single and serial prostitute homicide victim groups ($n = 47$ single victims and $n = 74$ serial victims, respectively). This variable (LEFTBODY) was retained in the analysis in light of these data patterns.

The single and serial prostitute homicide victim groups did not differ significantly in relation to how the body was found (i.e., the state or condition of the body and its general location), $\chi^2(1, n = 123) = 4.50, p = .11$. A majority of victims in the overall sample were found in "other" ways (65 of 123 cases or 52.8%) than being concealed (buried, wrapped, in water, in container) or in a building or vehicle (sexual encounter areas). These "other" manners in which victims were found included the following: victims' bodies being left out in the open, next to or on roads or highways, behind buildings, in parking lots, at construction sites, in vacant lots, parks, or open fields; in densely wooded areas; in ditches; on riverbanks or next to canals; in a bathtub or submerged in water in a basement; and in an apartment or garage. In the cases of two single victims, one died in a hospital, while in the second case the perpetrator was caught in the act of killing her.

A higher percentage of serial victims were found concealed (i.e., buried, covered, wrapped, in water, or in a container) than were single victims (19 of 25 serial cases or 76.0% and 6 of 25 single cases or 24.0%, respectively). The percentages of victims found in buildings or vehicles (i.e., in sexual encounter areas) were essentially equal (17

of 33 single cases or 51.5% as compared to 16 of 33 serial cases or 48.5%). However, the serial victims were more frequently disposed of or found in "other" ways as described above (39 of 65 cases or 60.0%) than the single victims (26 of 65 cases or 40.0%). As previously mentioned, these patterns must be interpreted within the context of the unbalanced single and serial victim subsample sizes ($n = 49$ single victims and $n = 74$ serial victims, respectively). This variable (HOWFOUN2), which had been recoded with collapsed categories to increase meaning, was retained in the analysis due to the interesting patterns in the data.

The single and serial prostitute homicide victims significantly differed with regard to how their bodies were clothed upon discovery at the disposal site, $\chi^2(1, n = 121) = 4.48, p = .03$. A majority of victims were found partially undressed or completely nude (89 of 121 cases or 73.6%) versus fully clothed (32 of 121 cases or 26.4%). The single victim group had a significantly greater percentage of victims who were found fully clothed (18 of 32 cases or 56.3%) as contrasted with the serial victim group (14 of 32 victims or 43.8%). The serial victims, however, were significantly more likely to be found either completely nude or partially undressed (58 of 89 cases or 65.2%) than the single victims (31 of 89 cases or 34.8%). An examination of the odds ratios reveals that serial victims were nearly 2 ½ times more likely (OR = 2.41) to be found partially undressed or completely nude than the single victims, while the latter group were less than ½ times as likely (OR = 0.42) to be found partially undressed or completely nude as compared to the serial victims. Further, the odds ratios show that single victims were 2.41 times more likely than serial victims to be found fully clothed. The serial victims were less than ½ times as likely (OR = 0.42) to be found fully clothed than the single

victims. This recoded variable (HOWDRES2), which combined the “fully clothed” and “partially undressed” categories to enhance meaning, was retained in the analysis.

No statistical comparison between the prostitute homicide victims could be undertaken with regard to the disposition of their clothing at the crime scene due to the Chi-square having 4 cells with expected counts of less than 5 cases (including 1 empty cell). Among the few cases ($n = 4$) where the clothing was found piled neatly, 3 were found in the serial group and 1 was found in the single group. Only 1 case was recorded where the victim's clothing was hidden, and this occurred in the serial group. However, the serial victims had the greatest percentage of cases where the clothing was found scattered (20 of 29 cases or 69.0%) as compared to the single victims (9 of 29 cases or 31.0%). These patterns, however, may be attributable to unbalanced victim subsample sizes ($n = 45$ single victims and $n = 68$ serial victims, respectively). This variable (DISPCLTH) was omitted from the multivariate analyses.

The Chi-square examining differences between prostitute victim groups in relation to perpetrator rituals with the victims' bodies was invalid due to 1 cell having an expected count of less than 5 cases. Of the few cases involving the performance of body rituals, the greatest percentage (8 of 10 cases or 80.0%) were in the serial victim group as compared to the single victim group (2 of 10 cases or 20.0%). However, the serial group also had a greater proportion of cases not involving rituals with the victims' bodies (60 of 106 cases or 56.6%) than the single group (46 of 106 cases or 43.4%). Again, the interesting data pattern demonstrated above is based on a small overall sample ($n = 10$ victims) stemming from victim subsamples of unequal sizes ($n = 48$ single victims and $n = 68$ serial victims, respectively) and should be interpreted tentatively at best. This

variable (BODYRITU) was removed from the analysis.

The Chi-square was also invalid for the variable describing the perpetrator's spending time with the victim's body before bringing it to the disposal site (TIMEBFO2). Specifically, 1 cell of the crosstabulation contained an expected count of less than 5 cases. Interestingly, the single victim group contained a higher percentage of cases that did not involve the perpetrator spending time with the victim's body prior to disposal (7 of 9 cases or 77.8%) than the serial victim group (2 of 9 cases or 22.2%), although the cell totals were small. Conversely, the serial victim group evidenced a greater proportion of cases where the perpetrator spent time with the victim's body prior to moving it to the disposal site (24 of 29 cases or 82.8%) than did the single victim group (5 of 29 cases or 17.2%).

Within the perpetrator subsamples, slightly more single offenders did not spend time with the victim's body prior to disposal (7 of 12 cases or 58.3%) as compared with those that did spend time with the body (5 of 12 cases or 41.7%). Within the serial murderer subsample, however, a majority of offenders (24 of 26 cases or 92.3%) spent time with the victim's body as compared to those that did not (2 of 26 cases or 7.7%). Again, the above observations may be attributable to victim subsample size differences ($n = 12$ single victims and $n = 26$ serial victims, respectively). Despite its nonsignificance, this variable (TIMEBFO2) was retained in the analysis due to the aforementioned data patterns.

The serial murderers were significantly more likely to spend time with the victim's body during the body disposal process (i.e., moving the corpse to the disposal site and/or spending time with the body before leaving the disposal site) than the single

murderers (47 of 63 serial cases or 74.6% versus 16 of 63 single cases or 25.4%, respectively), $\chi^2(1, n = 100) = 21.53, p = .0001$. Conversely, the single offenders were significantly more likely (27 of 37 cases or 73.0%) not to spend time with the victim's body during the disposal process than the serial murderers (10 of 37 cases or 27.0%). Within the single offender subsample, more perpetrators did not spend time with the victim's body during the body disposal process (27 of 43 cases or 62.8%) as compared to those that did remain with the body (16 of 43 cases or 37.2%). On the other hand, within the serial offender subsample, the majority of offenders (47 of 57 cases or 82.5%) spent time with the victim's body during the process as compared with those that did not (10 of 57 cases or 17.5%). The odds ratios indicate that serial homicide offenders were nearly 8 times more likely (OR = 7.93) than single offenders to have spent time with the victim's body during the disposal process. The single offenders were only 0.13 times more likely than serial offenders to have spent time with the victim's body in this fashion. This variable (TIMEDRNG) was retained in the analysis.

Perpetrator's Postcrime Behavior Block:

No significant differences were found between the single and serial prostitute homicide victim groups with respect to the perpetrator taking and keeping articles of the victim's clothing, $\chi^2(1, n = 104) = 1.91, p = .17$. A greater percentage of serial perpetrators engaged in this behavior (17 of 24 cases or 70.8%) than single perpetrators (7 of 24 cases or 29.2%). However, a larger proportion of serial offenders also did not take and keep the victim's clothing (44 of 80 cases or 55.0%) than the single offenders (36 of 80 cases or 45.0%). These patterns may be an artifact of the unequal victim group subsample sizes ($n = 43$ single victims and $n = 61$ serial victims, respectively). This

variable (TOOKCLTH) was omitted from the analysis, although, as shall be explained, it was later incorporated into a summary variable.

Similarly, the single and serial victim groups did not differ significantly in relation to the perpetrator taking and keeping personal items from the victim other than clothing (e.g., body parts, jewelry, pictures, or a driver's license), $\chi^2(1, n = 94) = 2.16, p = .14$. Serial offenders more frequently took personal items from the victim (9 of 12 cases or 75.0%) than single offenders (3 of 9 cases or 25.0%), although these cell totals were small. Similar percentages of offenders, comprising the majority of all offenders in the sample, did not engage in this behavior (39 of 82 single cases or 47.6% and 43 of 82 serial cases or 52.4%, respectively). Again, the data pattern illustrated above must be viewed tentatively in light of the subsample size differences within the victim groups ($n = 42$ single victims and $n = 52$ serial victims, respectively). This variable (KEEPITEM) was deleted from the analysis, but was included in a new summary variable.

Specifically, the variables (KEEPITEM) and (TOOKCLTH) were both collapsed into the new summary variable (PERPTAKE), which was coded positive if either of these items were, themselves, endorsed. In this case, significant differences were detected between the serial and single perpetrators with regard to taking and keeping clothing and/or other personal items from the victim, $\chi^2(1, n = 96) = 4.19, p = .04$. Serial murderers were significantly more likely to engage in this taking of souvenirs and/or trophies from the victim (20 of 29 cases or 69.0%) than were the single murderers (9 of 29 cases or 31.0%). Conversely, the single homicide offenders were significantly more likely not to engage in this behavior (36 of 67 cases or 53.7%) than were the serial homicide offenders (31 of 67 cases or 46.3%).

Interestingly, however, a greater proportion of offenders did not engage in taking and keeping clothing and/or personal items (67 of 96 cases or 69.8%) than those who did engage in this behavior (29 of 96 cases or 30.2%). Within the subsamples, the majority of single offenders refrained from taking and keeping clothing and/or personal items from the victim (36 of 45 cases or 80.0%) as compared to those who did engage in this behavior (9 of 45 cases or 20.0%). The serial offender subsample, as contrasted with the single offender subsample, evidenced a higher percentage of offenders who took souvenirs and/or trophies (20 of 51 cases or 39.2%), although most serial perpetrators did not exhibit this behavior (31 of 51 cases or 60.8%). The odds ratios show that serial murderers were approximately 2 ½ times as likely (OR = 2.58) as single murderers to have taken clothing and/or personal items from the victim. Conversely, the single offenders were only 0.39 times as likely as the serial offenders to have removed any of these items from the victim. This variable (PERPTAKE) was retained in the multivariate analyses.

A significantly greater proportion of serial murderers returned to the body disposal site (24 of 26 cases or 92.3%) than single murderers (2 of 26 cases or 7.7%), $\chi^2(1, n = 82) = 27.26, p = .0001$. Conversely, single offenders were significantly more likely not to return to the body disposal site (39 of 56 cases or 69.6%) than serial offenders (17 of 56 cases or 30.4%). However, most murderers in the overall sample did not return to the disposal site (56 of 82 cases or 68.3%) as compared with those who did return to the disposal site (26 of 82 cases or 31.7%). Within the single perpetrator subsample, nearly all offenders (39 of 41 cases or 95.1%) did not return to the body disposal site as compared to the few who did return to this location (2 of 41 cases or

4.9%). The opposite pattern was evidenced within the serial offender subsample, with more perpetrators (24 of 41 cases or 58.5%) revisiting the body disposal site than not returning to this location (17 of 41 cases or 41.5%). An examination of the odds ratios reveals that the serial offenders were more likely to have returned to the body disposal site than the single offenders by a factor in excess of 27 times (OR = 27.53). The single perpetrators, on the other hand, had virtually no greater likelihood (OR = 0.04) of returning to the disposal site in comparison with the serial perpetrators. This variable (RETURNED) was retained in the analysis.

No statistical comparison could be performed between the victim groups with respect to the perpetrator observing the discovery of the victim's body. Specifically, the corresponding Chi-square contained 1 cell with an expected count of less than 5 cases. The majority of offenders did not observe the body's discovery (66 of 75 cases or 88.0%) as compared with those who observed the body's discovery (9 of 75 cases or 12.0%). Of the few documented occurrences of this behavior ($n = 9$), single offenders more often observed the body's discovery (6 of 9 cases or 66.7%) than serial offenders (3 of 9 cases or 33.3%). However, it must be stated that a number of these positive occurrences involved the perpetrator being apprehended in the act of killing the victim or otherwise being with the body when the police arrived. The single group also had the highest percentage of cases where the offender did not observe the body's discovery (36 of 66 cases or 54.5%) as compared to the serial group (30 of 66 cases or 45.5%). Because of unbalanced subsample sizes in the victim groups ($n = 42$ single victims and $n = 33$ serial victims, respectively), these results must be interpreted with caution. This variable (SAWDISCV) was removed from the analysis.

There were no significant differences found between the single and serial murderers with regard to participating in the homicide investigation indirectly (e.g., collecting news articles about the case, bragging to friends about the case or asking them questions about it, keeping a diary, or telling authorities he had been “aware” or had been “following” the investigation), $\chi^2(1, n = 95) = 2.56, p = .11$. The majority of offenders in the sample did not follow the cases indirectly (71 of 95 cases or 74.7%) as compared with those who did (24 of 95 cases or 25.3%). Serial offenders more frequently engaged in following the investigation indirectly (17 of 24 cases or 70.8%) than single offenders (7 of 24 cases or 29.2%). On the other hand, similar percentages of offenders in each group refrained from engaging in this behavior (34 of 71 single cases or 47.9% and 37 of 71 serial cases or 52.1%, respectively). This data pattern may, again, be attributable to unequal victim group subsample sizes ($n = 41$ single victims and $n = 54$ serial victims, respectively). This variable (INDIRECT) was removed from the analysis.

The single and serial perpetrators also did not differ significantly in relation to partaking in the investigation directly (e.g., “hanging out” in areas frequented by police officers, contacting the police or the media to taunt them or to confess to the murder, or acknowledging the police during a surveillance), $\chi^2(1, n = 99) = 1.33, p = .25$. As with the previous variable, the majority of perpetrators did not participate in the investigation directly (78 of 99 cases or 78.8%) as compared with those who did participate directly (21 of 99 cases or 21.2%). Serial offenders had a higher percentage of individuals who participated directly in investigations (14 of 21 cases or 66.7%) than single offenders (7 of 21 cases or 33.3%). However, a greater percentage of serial perpetrators also did not participate in the police investigation directly (41 of 78 cases or 52.6%) as compared to

the single perpetrators (37 of 78 cases or 47.4%). As has been mentioned previously, this interesting pattern in the data may be an artifact of the unbalanced victim group subsamples ($n = 44$ single victims and $n = 55$ serial victims, respectively). This variable (DIRECTLY) was omitted from the analysis.

The variables (INDIRECT) and (DIRECTLY) were combined into a summary variable (JOINCASE), coded positive if either of these variables was positively endorsed. Interestingly, the serial offenders had a significantly greater percentage of individuals (31 of 43 cases or 72.1%) who participated in the investigation indirectly and/or directly than the single offenders (12 of 43 cases or 27.9%), $\chi^2(1, n = 97) = 7.45, p = .01$. Conversely, the single offenders were significantly less likely to have partook in the investigation (30 of 54 cases or 55.6%) than the serial offenders (24 of 54 cases or 44.4%). An examination of the odds ratios revealed that serial offenders were over 3 times as likely (OR = 3.23) than single offenders to have joined in the investigation indirectly and/or directly. Conversely, the single perpetrators were approximately only 1/3 as likely (OR = 0.31) as serial offenders to engage in this behavior. Because this analysis was conducted during the interpretation of the study results, it was not included in any further analyses.

Geographic Profiling Variables Block:

The Chi-square assessing for differences between single and serial perpetrators with respect to their being familiar with the initial contact site was invalid. Specifically, 2 cells had expected counts of less than 5 cases (including 1 empty cell). With the exception of 1 single offender who was not familiar with the initial encounter site, the rest of the perpetrators in this group were familiar with the initial encounter site (40 of 41 cases or 97.6%). All of the serial offenders (71 of 71 cases or 100.0%) were familiar

with the initial encounter site. This variable (KNOWSICS) was omitted from the analysis.

Similarly, the Chi-square pertaining to the perpetrator's familiarity with the murder site could not be interpreted due to 2 cells having expected counts of less than 5 cases. Each perpetrator group had only 1 individual who was not familiar with the murder site. The remaining serial perpetrators (57 of 58 cases or 98.3%) and single perpetrators (37 of 38 cases or 97.4%) were familiar with the murder site. This variable (KNOWSMS) was deleted from the analysis.

No statistical comparison between the offender groups could be made in relation to the perpetrators being familiar with the body disposal site. The corresponding Chi-square crosstabulation was invalid due to 2 cells having expected frequencies of less than 5 cases. Again, within the single and serial perpetrator groups, all but 1 case were familiar with the disposal site area (36 of 37 single cases or 97.3% and 64 of 65 serial cases or 98.5%, respectively). This variable (KNOWSBDS) was removed from the analysis.

With regard to the continuous geographic profiling variables, the corresponding values for the case of one single prostitute victim (ranging from 141.3 miles to 1832.9 miles) were omitted from the mean comparisons as they were determined to be extreme values, skewing the initial analyses. The following results are believed to be more representative of the various victim and perpetrator samples. To begin, no significant differences were found between the single and serial prostitute homicide victim groups in relation to the approximated distance between the perpetrator's residence and the best estimate of the initial contact site with the victim, $t(86) = 1.66$, $p = .10$. Serial offenders,

on the average, lived slightly further away from the initial encounter site ($M = 4.62$ miles, $SD = 6.33$) than did the single offenders ($M = 2.52$ miles, $SD = 4.45$), although this difference was not statistically significant. This variable (PRESICS) was removed from the analysis.

Similarly, the estimated distance between the perpetrator's residence and the body disposal site location was not significantly different between the two prostitute homicide victim groups, $t(96) = 1.08$, $p = .28$. Again, on the average, the serial offenders lived slightly further away from the disposal site ($M = 4.59$ miles, $SD = 6.33$) than the single offenders ($M = 3.25$ miles, $SD = 5.37$), although this result was not statistically significant. This variable (PRESBDS) was omitted from the multivariate analyses.

No significant difference was found between the single and serial prostitute homicide victims with respect to the estimated distance between their residence at the time of death and the body disposal location, $t(92) = 0.72$, $p = .47$. The serial victims lived, on the average, slightly further away from their corresponding disposal sites than the single victims (Serial Victim Group: $M = 5.00$ miles, $SD = 6.84$ and Single Victim Group: $M = 3.99$ miles, $SD = 6.32$), although this finding was not statistically significant. This variable (VRESBDS) was deleted from the analysis.

Lastly, there was no significant difference found between the single and serial prostitute victim groups with respect to the approximate distance between the best estimate of the initial contact site and the body disposal site, $t(88) = 1.55$, $p = .13$. Again, there was a larger calculated distance between the estimated initial contact site and the body disposal site for the serial victims ($M = 4.21$ miles, $SD = 5.69$) than for the single victims ($M = 2.26$ miles, $SD = 5.86$), although this was not a statistically significant

result. This variable (ICSBDSDX) was removed from the analysis.

Failure of Multivariate (Logistic Regression) Models:

As previously mentioned, those variables found to be statistically significant from the bivariate analyses, as well as those otherwise evidencing interesting data patterns, were incorporated into a second set of 12 conceptual blocks. As planned, a statistical consultant performed multivariate analyses on these variable groupings. In particular, logistic regression, a nonparametric statistical technique, was selected for the analyses. This was because this method could readily incorporate the dichotomous, categorical, and continuous variables found in the study, making no assumptions about the types of variables to be included (Wright, 1995; T. E. Costigan, personal communication, May 22, 2001). Furthermore, because logistic regression calculates probabilities of group membership (Wright, 1995) – namely, whether a given prostitute homicide case would be single or serial in nature – it was felt that this feature would be particularly useful to criminal investigators (T. E. Costigan, personal communication, May 22, 2001).

Logistic regression requires, at a minimum, 20 to 30 cases per parameter being estimated (T. E. Costigan, personal communication, May 22, 2001), although some resources indicate that up to 50 subjects-per-variable are required (Aldrich & Nelson, 1984, as cited in Wright, 1995). However, when the logistic regression analyses were attempted, all models were invalid due to an inadequate number of subjects. For instance, the “Body Recovery, Murder, Initial Encounter, and Last Known Location Sites Block” initially contained 8 variables, 5 of which were categorical. Upon calculation, each of the categories in the latter variables became a parameter in the equation, resulting in 23 total parameters. Using the 20 cases per parameter requirement above, this would

require a minimum of 460 subjects, which exceeded the total study sample ($N = 123$ prostitute homicide victims). Unfortunately, only 89 prostitute homicide victim cases were included in the block, and the results were meaningless and could not be interpreted (T. E. Costigan, personal communication, May 22, 2001). None of these results will be reported here. A logistical regression analysis will be attempted on a subset of 5 parameters selected for their statistical, conceptual, and investigative importance, with the results, if any, to be reported elsewhere.

In light of this development, it was decided that additional calculations with the statistically significant variables from the bivariate analyses – which did have adequate power – would be performed (T. E. Costigan, personal communication, May 22, 2001). Specifically, the relative risk and odds ratio calculations of the Chi-square analyses were examined as they offered useful data in support of classifying single and serial prostitute homicides. Instructions for performing these calculations and for dummy-coding categorical variables into various parameters were obtained from the statistical consultant.

Relative risk reflects “the ratio of event probabilities for the subgroups of interest” (SPSS, 1999, p. 79). For instance, the relative risk of a prostitute victim working alone, using serial victims as the reference group, would encompass the ratio of serial victims working alone (i.e., the percentage of the serial victims reported to be working alone) to the ratio of single victims working alone (i.e., the percentage of the single victims reported to be working alone) (p. 79). The odds ratio is “the ratio of the probability that the event occurs to the probability that the event does not occur” or, more simply, the ratio of the aforementioned relative risk calculations (p. 79). It is also described as a

measure of how “one variable influences another” (Howell, 1992, p. 148).

However, because proportions and relative risk measurements cannot be accurately measured in retrospective case-control type study designs, the use of odds ratios as an estimate of relative risk is recommended (GraphPad Software, Inc., 1998; SPSS, 1999). Additionally, odds ratios should be utilized in situations where the probability of an event (e.g., prostitute homicide) is small (SPSS, 1999, p. 79). In light of the study’s retrospective design and the low probability phenomenon being examined, only the odds ratios were interpreted, and may be found in Table 1. To maintain consistency, their interpretations were included with the corresponding bivariate analyses of the conceptual blocks detailed in the above sections.

DISCUSSION

This research project was conducted to assist the FBI's National Center for the Analysis of Violent Crime (NCAVC), as well as other law enforcement agencies, with ongoing investigations of murdered female prostitutes. Specifically, the NCAVC cited anecdotal information from its case consultations, suggesting victimology and crime scene differences among single and serial prostitute homicide victims. Because this phenomenon had not been formally examined empirically, an exploratory study was initiated, utilizing the NCAVC's anecdotal data supplemented with variables excerpted from relevant scholarly literatures (i.e., prostitution, sexual and serial homicide, criminal profiling, sexual aggression risk prediction, and homicide, violence and comorbid substance use). These items were included in an instrument specially designed for the study, the Prostitute Homicide Questionnaire (PHQ; Dudek & Nezu, 2000). Pursuant to a review of closed single and serial prostitute homicide case files, trained raters completed both the PHQ and Hare's Psychopathy Checklist-Revised (PCL-R; Hare, 1991c).

It was hoped that an analysis of the included variables – grouped conceptually in meaningful blocks - in relation to the single and serial victim groups would elucidate differences to aid in classifying a homicide as being either “single” or “serial” in nature and to identify unique psychological profiles of the perpetrators and their victims. As shall be illustrated, these initial “Study Aims” were largely fulfilled. Specifically, a number of statistically significant bivariate differences and interesting data patterns between the single and serial prostitute homicide victim groups were evidenced among the various conceptual blocks of variables, supporting Study Aim #1. Although the

project's small overall sample size ($N = 123$ victims) and corresponding low power proscribed the execution of desired multivariate data analyses, useful odds ratio data were gleaned from the bivariate analyses to facilitate homicide victim group classification, satisfying, to a significant degree, Study Aim #2. Additionally, these bivariate group differences and odds ratios, taken in conjunction, offer useful, empirically-based profiles of the single and serial murderers and their victims, respectively, achieving the fundamental goal of "Study Aim #3."

The following discussion will examine what appear to be the study's most salient and interesting findings amongst the victim, perpetrator, situational-interactional, crime scene, and body disposal variables, grouped according to their respective PHQ (Dudek & Nezu, 2000) Forms. These results of interest will also be related to the expected trends in the data that were excerpted from the various literatures and detailed under Study Aim #1. Subsequently, these findings and impressions will be incorporated into victim and homicide offender profiles. Moreover, recommendations will be made to law enforcement to facilitate active prostitute homicide investigations as well as future research of this phenomenon. Lastly, from a clinical standpoint, some preliminary risk reduction strategies may be proposed from the study's findings to enhance the safety of working prostitutes.

Victim Characteristics Form:

In many respects, the single and serial prostitute homicide victims were similar in their backgrounds and lifestyle. However, it will be argued that the serial victims did differ markedly from the single victims in terms of their "degree of desperation." In this regard, the serial victims seemed to evidence a more significant pattern and greater

degree of chronic crack cocaine abuse and comorbid risk behaviors – which have been well documented in the literature (e.g., Ratner, 1993a) – than the single victims. Some of these variables (e.g., risk factors) had ample statistical power, and these relationships were demonstrated. In other cases, where nonsignificant relationships were found or where bivariate relationships could not be calculated due to low power, the data patterns frequently suggested that the serial prostitute victims were most at risk. It is believed that with a larger sample size, many of these trends would be elucidated.

Additionally, the single prostitute victims in the sample, despite being largely cocaine-addicted, did have at least a proportion of individuals who engaged in fewer risk behaviors than the serial victims and who serviced customers in nonvice areas such as residences or motels. Further, all prostitute victims with economic or other motivations than supporting a cocaine addiction were single victims. Operating in these ways, the single victims did resemble more traditional street prostitutes. Additionally, as shall be discussed in the following sections, the data repeatedly revealed that some of these single homicides were nonsexually motivated and occurred pursuant to interpersonal disputes, unlike the serial homicides.

The victims did not differ with respect to age, averaging in their late 20's to early 30's at time of death. The majority of all victims were African-American/Black, followed by Caucasian and victims of "Other" races and ethnicities (e.g., Hispanic). The single victim group had a higher percentage of victims with "Other" backgrounds. It is possible that this finding might reflect a more racially widespread occurrence of single homicides (e.g., sporadic interpersonal disputes occurring in geographically disparate areas versus serial homicides against African-Americans occurring within restricted inner

city areas) or a sampling bias. Because the single victims and perpetrators were more likely to have different racial backgrounds, while serial homicides were more likely to be intraracial in nature, it is possible that this finding might be attributable to a paucity of non-Caucasian serial offenders in the sample, which has been found elsewhere (e.g., Ressler et al., 1988).

Not surprisingly, almost all victims were found to work in high crime areas and had histories of victimization on- and off-the-job. Although coding the absence of victimization was difficult from the police files, its high presence in the sample is consistent with what has been reported elsewhere (e.g., Farley & Barkan, 1998; Silbert & Pines, 1982). Nearly equal proportions of single and serial victims worked in established vice, or stroll, areas and neighborhood/nonstroll areas, characterized by economic depression, drug use, and related crime. Patterns in the data, limited by the small sample size, reveal that most serial victims worked in vice areas, followed by neighborhood/nonstroll areas. Conversely, the single victims appeared to work principally in neighborhood/nonstroll areas, followed by vice areas. Within their work settings, serial prostitute victims were significantly more likely to meet customers in vehicles or in isolated areas (e.g., abandoned buildings, alleys, and vacant areas) than single victims. Conversely, the single victims were more likely to meet customers in "Other" areas (i.e., apartment/residence, hotel/motel, prearranged location, and other areas) than serial victims. These findings suggest that the single victims met the perpetrators in "nontraditional" vice locations that may also have been temporary or permanent addresses. This could indicate that some of the single homicides were interpersonal disputes rather than sexual homicides, as shall be described in the next

section.

Almost 85% of the total sample was involved in prostitution to support a cocaine/crack cocaine addiction, indicating that economic motivations (e.g., earning an income) were secondary for most victims. The few victims who were prostituting for "other" reasons (e.g., economic motivation, support of another drug addiction) were single victims. Serial victims offered sex-for-drugs in a significantly greater percentage of cases than the single victims. An inspection of the victim subsamples revealed that the majority of serial victims offered sex-for-drugs while most single victims offered sex-for-money.

Next, although no difference was found in a quantitative summary score of health (i.e., not using a condom, forgoing condom use in exchange for drugs or money to buy drugs, not checking customers for hygiene, working while infected with a sexually transmitted disease), sexual (i.e., performing any sex act for any price or in exchange for drugs or engaging in perverse sex acts and being abused in a crack house), and personal (i.e., servicing any customer, working alone, working while intoxicated, and attempting to rob or cheat customers) risk behaviors, the serial prostitute victims evidenced a higher mean number of these behaviors than the single prostitute victims. However, in light of the following salient findings, it is believed that this nonsignificant result is an artifact of the study's small sample size.

Specifically, all victims in the serial subsample failed to screen potential customers, while the few victims who did screen them were single victims. Serial victims were significantly more likely to work alone than the single victims who were, themselves, more likely to work in the company of others. Similarly, serial prostitute

victims most often worked without any personal security measures (e.g., having an observer, such as a pimp or another prostitute), while single prostitute victims were more likely to utilize these safety measures. The findings support the assertions of Inciardi (1993), who argues that crack-addicted prostitutes are less experienced than traditional street prostitutes in the areas of personal safety and screening customers. This author attributes the acquisition of "street smarts" to working in the company of older, more experienced prostitutes. It appears that the serial victims, despite prostituting for years, have never acquired such experience due to their drug addiction and comorbid risk behaviors. Conversely, the single victims in the study - who were found to be working for money, prostituting in the company of others, utilizing security measures, and screening customers - appeared to more closely resemble traditional street prostitutes (Barnard, 1993; Inciardi, 1993).

Over 90% of the total sample was found to work while under the influence of substances. However, at the time of death, the serial victims had a significantly higher percentage of cases with postmortem cocaine detected in their blood, while single victims had a higher proportion of cases without cocaine present. A similar trend, approaching significance, was seen with respect to the more frequent presence of the cocaine metabolite benzoylecgonine (BE) in the postmortem blood of serial victims. The prevalence of cocaine use - and the absence of other drugs of abuse - in the sample reinforces the finding that it is the drug of choice for this largely African-American/Black, inner-city, prostitute population, which is consistent with the literature (El-Bassel et al., 1997; Ratner, 1993a). Although based on a very small number of cases, those victims demonstrating poor personal hygiene at the time of death consistent with

chronic drug use were all serial victims, as described by Boyle & Anglin (1993); however, coding this item was difficult in light of the poor quality of autopsy reports and other related documentation.

Although no significant difference was found between the postmortem cocaine and BE levels in the single and serial prostitute victims, it is interesting to note that the serial victims had mean cocaine level over 1.7 times that of the single victims and a mean BE level that was nearly twice that of the single group. However, the behavioral effects of cocaine by blood concentration have not been documented, although the mean levels found in this study are consistent with what has been seen in the cocaine addict population of a large East Coast city (G. V. Purnell, personal communication, June 4, 2001). Because cocaine is quickly metabolized into BE after ingestion (Baselt, 2000) – in as soon as 30 minutes - we may conclude the prostitute victims with cocaine detected in their blood ingested the drug within 24 hours (G. V. Purnell, personal communication, August 26, 1998). Hanzlick & Gowitt (1991), who measured BE in a sample of homicide victims, offered the same conclusion.

The single and serial victims did not differ with respect to having alcohol detected in their blood. Interestingly, between groups, the serial cohort had a higher percentage of victims with alcohol present than the single cohort; within the subsamples, the single group had a majority of cases without alcohol in the blood. Again, this finding is hampered by the study's small sample size. Both victim groups did evidence elevated, nearly identical blood alcohol levels ($M = 0.04$ grams/100 milliliters for each group using the United States' accepted weight/volume measure) (Garriott, 1996) that did not differ significantly. The potential behavioral effects of these alcohol levels range from having

virtually no observable clinical effects to effects such as mild euphoria; increased self-confidence, sociability, and talkativeness; decreased inhibitions, attention, judgment, and self-control; early sensory-motor impairment; and delayed information-processing (Dubowski, 1989, as cited in Garriott, 1996, p. 40). Garriott (1996, p. 41) notes that as the individual's "inhibitory central mechanisms" in the brain are depressed by alcohol ingestion, reactions such as violence, aggression, and risk-taking are also possible.

The effects of crack cocaine are described to be an initial, intense euphoria followed by negative feelings and a craving for more of the drug (Ouellet et al., 1993). Further, combined cocaine and alcohol ingestion results in the formation of a new metabolite, cocaethylene, which is longer-acting than cocaine and also increases subsequent feelings of euphoria (Hearn, 1991a; 1991b, as cited in Garriott, 1996, p. 51). Chronic cocaine use has also been linked to violence. Specifically, the side effects of crack (e.g., paranoia, anxiety, aggression, irritability, hostility, and loss of self-control) have been found to precipitate acts of violence by prostitutes (Sterk & Elifson, 1990). Although we will never know exactly what transpired in any prostitute victim's final fatal encounter with the perpetrator, the potential losses in judgment, self-control, and cognitive processing attributable to cocaine and/or alcohol intoxication could negatively impact her ability to negotiate with the offender, to effectively screen for warning signs, and to defend herself. Hypothetically, her increased talkativeness, loss of control, paranoia, anxiety, or aggression could anger the offender during the sexual encounter, triggering a violent response. At the very least, the toxicology findings support the general finding in the literature, implicating the comorbidity of drugs in homicides (e.g., Lindqvist, 1991; Riedel, 2000; Spunt et al., 1995).

A large portion of the victims in each group, including the majority of the serial victims, were homeless. Homelessness has been found to co-occur with crack cocaine addiction (Boyle & Anglin, 1993), which was also prevalent in the sample. However, the single victim group had a higher percentage of nonhomeless victims. Surprisingly, virtually all victims in the sample had existing social supports in their lives, despite their drug addiction. These findings seemingly reflect the course of drug addiction, including a loss of economic resources (Boyle & Anglin, 1993) and isolation from existing supports.

The serial victims had been prostituting for a significantly longer time (approximately 7.6 years) than the single victims (approximately 4.7 years), although this was based on a small sample size that also contained extreme values. Further, while no significant differences were found between the victim groups with respect to prior vice arrests, drug possession and/or paraphernalia arrests, and drug distribution arrests, the serial victims did have a higher mean number of vice arrests. Neither group had many drug and/or paraphernalia possession or distribution arrests, but inspections of the means revealed that the serial and single groups had higher average numbers of offenses in the former and latter categories, respectively. Notwithstanding the low sample sizes and reported frequencies for these vice and drug arrest categories, as well as the limitations of the prostitution time period calculation, the patterns suggest that serial victims were more immersed in the prostitution and drug subcultures for a longer time (i.e., prostituting and using drugs over a longer period of time, resulting in higher numbers of related offenses), while the single victims may also have been involved in the economic side of the drug trade. However, in the future, a larger sample size would be necessary to elucidate

whether these patterns, indeed, are unique to each victim group.

Nonetheless, the high percentage of African-American/Black, homeless serial victims in the sample - who overwhelmingly offered sex-for drugs, worked alone, neglected their personal security, failed to screen for dangerous customers, and who worked more frequently under the influence of higher cocaine levels - personifies the derogatory "crack whore" descriptions of crack cocaine-addicted, inner city, African-American/Black females found in the literature (Fullilove et al., 1992; Elwood et al., 1997; Ratner, 1993a), who take great personal risks to "chase the rock" in the words of one such individual.

How These Findings Relate to the Expected Data Patterns in Study Aim #1 a):

"Victim Characteristics Form" Blocks may suggest victimology differences among the single and serial prostitute homicide victims in the areas of demographics, work-related factors, risk-taking behaviors, and lifestyle variables. These may include the following:

i). Drug-addicted prostitutes will comprise the majority of all prostitute homicide victims due to their increased vulnerability and risk-taking behaviors.

The above findings support this expected data pattern in that 85% of the deceased victim sample had been working to support a cocaine addiction and that over 90% of the victims worked while under the influence of drugs. In the latter regard, approximately 75% of the victims had postmortem cocaine and BE levels, indicating that they were under the influence of these substances at the time of death. As discussed above, a host of factors reflected a pattern of chronic drug use and increased vulnerability on the part of the prostitute homicide victims, notably those comprising the serial group. These

included the victims' cocaine, as well as alcohol, intoxication at the time of death; their engaging in multiple, comorbid risk behaviors on the job (e.g., engaging in sex-for-drug exchanges, working alone, failing to screen potentially dangerous customers, and not using security measures); their lengthy vice arrest histories; their histories of personal victimization; and the prevalence of homelessness in the total sample.

Due to low statistical power, more sophisticated multivariate modeling techniques could not be performed on the various prostitution lifestyle, drug use, and risk variables to ascertain their importance as predictors of single and serial homicide, respectively, or in relation to other possible predictors (e.g., the influence of a victim-perpetrator argument or the offender's sexually sadistic fantasies). However, odds ratios calculated for several of these variables revealed that, as compared to single victims, the serial victims were 4 times as likely to be working alone; were 3 times as likely to have cocaine detected in postmortem blood; were almost 3 times as likely to offer sex-for-drugs; and were over 3 times as likely to engage in sexual encounters in isolated areas. In other words, having cocaine in the blood prior to death and engaging in these risk behaviors on the job increased a given victim's likelihood of being a serial homicide victim at least threefold.

ii). Single prostitute homicide victims may more likely be inner-city, African-American females addicted to crack cocaine as a drug of choice, consistent with reported trends (e.g., Ratner, 1993a). It is believed that these women will engage in concomitant risk-taking behaviors (e.g., working while intoxicated, engaging in sex-for-drug exchanges with customers, or dealing drugs) that make them highly vulnerable victims.

These expected data patterns were partially supported. One striking finding of

this study was that the majority of all victims (56%) were African-American/Black females who were killed in urban areas, supporting the study's expected demographic trends. The serial prostitute victim group had a slightly higher percentage (59.5%) of African-American/Black victims than the single victim group (51%), which runs counter to expected findings. In light of the study's restricted geographic sampling, the influence of a sampling bias on these demographic findings cannot be ruled out, however. As mentioned above, most of these women were prostituting to support a crack cocaine addiction. As argued in the prior section, although the single and serial victims did not differ in relation to the overall number of personal, health, and sexual risk behaviors they were known to engage in, the serial victims did demonstrate trends (e.g., higher percentage of victims intoxicated at the time of death, working alone, failing to screen for customers, and engaging in sex-for-drug exchanges), suggesting that they – and not the single victims – were at a higher degree of risk.

Although nonsignificant, there was a slight indication that the single victims may have been more involved in actual drug distribution, based upon their arrest histories, than the serial victims. Involvement in such activity might place them at risk for being victimized from related “systemic violence” (e.g., arguments over drug prices, quality, failure to pay drug debts, etc.) (Sterk & Elifson, 1990), and would be consistent with expectations. The single victim group did have a significantly greater percentage of homicides with nonsexual motivations, which would encompass such drug-related violence. However, further investigation would be required to ascertain how many, if any, of these murders stemmed from involvement in the drug economy.

iii). Serial prostitute homicide victims may more likely be Caucasian females

(Carter et al., 1988) who appear to be traditional, economically-motivated street prostitutes working in established vice areas.

Nearly all of these expected patterns in the data were refuted by the study's findings. Specifically, as previously discussed, the sample of serial prostitute murder victims was predominantly African-American/Black (59.5%), containing a lesser percentage of Caucasian (36.5%) individuals. Again, replication with a more geographically representative sample would be necessary to effectively validate this finding. Additionally, over 90% of the serial victims were motivated to engage in prostitution to support their cocaine addictions. Interestingly, those few victims who were economically motivated were found in the single group, with a slightly greater number working in nonstroll/neighborhood areas than in established vice areas, rejecting the presumption that they would principally work in the latter setting. Conversely, although the majority of the serial victims worked in established vice areas, many also worked in neighborhood/nonstroll areas, again, only partially supporting expected trends.

Perpetrator Characteristics Form:

The single and serial murderers in the sample, not unlike their victims, resembled each other "on the surface," leading similar lifestyles, having similar backgrounds, and sharing some personality characteristics. However, it will be argued that the offender groups were markedly different "under the surface," with serial murderers exhibiting more predatory behavior as well as deviant sexual interests, fantasies, and concomitant acts of sexual aggression.

The single and serial offenders were similar to each other in age and race.

Specifically, they ranged in age from their early- to mid-30's, while both groups had equal proportions of African-American/Black and Caucasian perpetrators. The high percentage of African-American/Black serial murderers differs from the predominantly Caucasian demographics of other serial killer samples (Dietz et al., 1990; Geberth & Turco, 1997; Ressler et al., 1988). Most single offenders in the study were single and living with other people, while serial offenders had similar percentages of individuals who were single and living alone, single and living with others, and, to a slightly lesser extent, married or having a common law wife. Although most single and serial offenders in the sample were not homeless, almost 1/3 of the serial offenders were homeless, while the single group had a higher percentage of nonhomeless offenders. The serial group's mixed composition of offenders appears to have elements of both "organized" (i.e., living with others or married, having a fixed address) and "disorganized" (i.e., living alone, being homeless) typologies as compared with the findings of the FBI's earlier research (Ressler et al., 1988; Ressler, Burgess, et al., 1986).

The single offenders had predominantly unskilled (e.g., taxi driver, janitor, laborer, etc.) occupations along with a higher percentage of unemployed individuals than the serial offenders. The serial offenders had nearly equal proportions of individuals in skilled (e.g., electrician, truck driver, plumber, etc.) and unskilled professions, differing from the FBI's earlier research, where most serial murderers had unskilled jobs (Ressler et al., 1988). Interestingly, none of the perpetrators in the sample had professional (e.g., lawyer, doctor, accountant) occupations, and only a small percentage were involved in drug trafficking, pimping, or other criminal activity.

Over 90% of the single and serial perpetrators resided in the area of the homicide;

few were travelers or tourists passing through the area. Similarly, more than 90% of the sample had no vice arrest history, although this may indicate focused law enforcement efforts on controlling female prostitution (Hatty, 1989). Of the few cases with data, single offenders had been soliciting prostitutes for over 11 ½ years, while serial offenders had been doing so for approximately 4 years, although these figures should be viewed cautiously in light of the small sample size and influence of extreme values. These lengthy time periods are at least consistent, or exceed, what has been reported by male prostitute customers outside of the United States (Plumridge et al., 1996). Both offender groups in the study frequented vice locations (i.e., prostitution stroll areas neighborhood/nonstroll areas, and crack houses) for sex in equal proportions. These findings suggest that the single and serial perpetrators were similar in that they lived and frequented prostitution locations in their local areas, possibly over long periods of time, without arrests for solicitation.

The data in the sample suggest that single offenders more frequently were acquainted with their victims prior to the homicide than the serial offenders. Conversely, the serial offenders had equal percentages of individuals who targeted both acquaintances and strangers, unlike the single offenders. Again, the serial offenders in this sample, who targeted acquaintances and strangers equally, differ from other FBI serial murderer samples that were predominantly comprised of stranger victims (Dietz et al., 1990; Ressler et al., 1988). There were no differences between offender groups with regard to being regular customers of their victims. Most perpetrators were not regular customers, and both groups evidenced a majority of offenders soliciting other prostitutes during their visits to vice areas. Again, these findings differ from existing research with customers in

New Zealand and the Netherlands, who predominantly visited regular customers (de Graaf et al., 1996; Plumridge et al., 1996). Serial offenders more frequently committed violent acts against other prostitutes on prior occasions than the single offenders, who had fewer instances of acting-out behavior. This suggests that survivor victims might remember an abusive, sexually aggressive serial offender customer, facilitating police canvassing of vice areas during related prostitute homicide investigations.

The majority of the offenders in each group were known or suspected drug users who also had a substance use history. There were no significant differences between groups in relation to their number of prior drug possession and/or paraphernalia arrests/charges, with both groups having few such offenses on the average. The single offenders had a significantly higher number of drug distribution arrests, although this finding was based on a very small sample size. Interestingly, single offenders were significantly more likely to have an alcohol use history than the serial offenders, and were the only group to have a history of alcohol-related arrests/charges. Although difficult to ascertain from the police files reviewed, resulting in a low sample size, there was a higher percentage of single offenders under the influence of drugs and/or alcohol at the time of the homicide than the serial offenders, although this result was not significant.

These tentative findings suggest that the single offenders struggled with alcohol abuse to a greater degree than the serial offenders, to include ingestion at the time of the homicide. They may also have been more involved in the drug economy, as was found with the single victims. Because single victims more frequently met customers in nontraditional, residential settings, the role of alcohol and drugs here may further point to an interpersonal or drug economy dispute resulting in homicide, exacerbated by the use

of substances (Fagan et al., 1988; Johnson & Belfer, 1995; Telch & Lindquist, 1984). The groups did not differ with respect to histories of domestic violence arrests/charges, which, on the average, were few. However, it must be stated that some of these offenses may have been recorded as "battery" charges, for instance, on the perpetrator's criminal history form, or could have been reduced to lesser, unrecognizable offenses (e.g., "trespassing"), resulting in their exclusion as domestic offenses during the coding process.

The single and serial offenders closely resembled each other with respect to their criminal backgrounds, having lengthy offense histories and resembling so-called "career criminals." Both perpetrator groups had similar, high numbers of nonsexual offenses and violent offenses, reflecting an antisocial lifestyle characterized by acts of violence. In this respect they resembled a general prison population. Similarly, the single and serial murderers both had high numbers of property offense arrests (e.g., burglary, larceny, breaking-and-entering, auto theft, etc.), with the serial offenders having twice as many as the single offenders. Superficially, the perpetrators appear only to differ in frequency of property offenses.

However, the higher number of property crimes by serial offenders may lend preliminary support to the findings of MacCulloch et al. (1983) and Schlesinger and Revitch (1999), who asserted that burglaries, thefts, and paraphilic behaviors (e.g., voyeurism and fetish burglaries) were evidence of "behavioral try-outs," escalating over time and culminating in sexual homicide. Because the study did not code for specific types of property crimes, this would require further investigation, although, anecdotally, raters did observe burglary and theft charges. Interestingly, in their study comparing sex

offenders who had attempted or committed murder with a sample of incest sex offenders, Firestone et al. (1998) found that the homicidal offenders had significantly higher numbers of general criminal and violent offenses, respectively, as found with the serial group in this study.

Perhaps the most striking finding in this study is the degree to which the serial murderers differed from the single murderers in the area of sexual deviance and interests. To begin, the serial killers evidenced a significant sex offending history. Specifically, they had a significantly greater number of prior adult and child sex offense arrests/charges; sex offense victims; and different types of sexual offenses (i.e., adult, child, and paraphilia-related offenses) than the single offenders. Further, the serial perpetrators had a significantly greater percentage of stranger sex offense victims than the single offenders. Although based on a low number of total cases, the serial offenders also had the only documented instances of both having male child sex offense victims and having juvenile sex offense histories. Because juvenile criminal records were often sealed and the gender of sex offense victims was sporadically reported in the case files reviewed, these latter findings must be interpreted cautiously.

As previously mentioned, all of the aforementioned criteria (e.g., having a history of prior sex offending, deviant sexual interests, prior nonsexual offenses, multiple types of sex offenses, having stranger victims, etc.) have been found to be predictive of sexual offending recidivism in various studies, with prior sex offending history being a particularly salient and consistent predictor (Hall, 1988; Hanson & Bussiere, 1996; 1998; Quinsey et al., 1995). The fact that the serial offenders evidenced higher levels of pathology across all of these variables indicates that they are at high risk for recidivating

sexually, which is consistent with their repetitive and compulsive pattern of sex crimes. Indeed, sex offending behavior has been conceptualized as an addiction, like drug abuse, in light of its impulsivity, immediate feelings of gratification, compulsiveness, and lack of insight about negative consequences (George & Marlatt, 1989 and Herman, 1989, as cited in Hall, 1996, p. 30).

Hall (1996) notes that each time that someone aggresses sexually, his "inhibitory threshold" is lowered, making it easier to reoffend (p. 83). With repeated offending, less salient situational factors (e.g., pornography, elicited anger, substance use) are necessary for the person to exceed his threshold (Hall, 1996, p. 58). Using this reinforcement paradigm, the serial offender reduces (i.e., negatively reinforces) deviant arousal and negative feelings (e.g., situational stress) by engaging in sex acts with prostitute victims, who he subsequently kills, while increasing (i.e., positively reinforcing) his feelings of pleasure, control, and satisfaction derived from not being apprehended (Nezu, Nezu, & Dudek, 1998; Hall, 1996). Using Hall's (1996) argument, the killing of prostitutes becomes so reinforcing that previous behaviors (e.g., reading pornography, drinking alcohol) and situations (e.g., arguing with the prostitute victim over the sexual contact) that would normally be required to trigger the homicidal response become unnecessary, with no further consideration given to the consequences. The feelings of relief, sexual pleasure, and control derived from murdering prostitutes reinforce the serial offender's homicidal behavior, and it continues. Additionally, using a classical conditioning paradigm, the acts of sex and murder become associated over the course of the homicide series, with the act of killing (the conditioned stimulus) producing the aforementioned, desired feelings (the conditioned response) (Nezu et al., 1998).

The serial murderers also evidenced a significantly higher number of paraphilic interests than the single offenders. Specifically, the serial group had a significantly higher proportion of individuals with pedophilic and necrophilic interests than the single offenders. A greater percentage of serial murderers had voyeuristic interests than the single murderers, although the sample size for this item was low. The presence of paraphilias has been well documented among serial murderers (e.g., Geberth & Turco, 1997; Ressler et al., 1988). In particular, Prentky et al. (1989) found a higher prevalence of certain paraphilias (i.e., compulsive masturbation, exhibitionism, voyeurism, fetishism, and cross-dressing) in a sample of serial murderers than a comparison group of single victim sex murderers. However, as mentioned previously, the samples in this study were supplemented with subjects from the FBI's sample of sexual homicide offenders (Ressler, Burgess, et al., 1986; Ressler et al., 1988).

Interestingly, in their sample of homicidal sexual offenders, Firestone et al. (1998) found that 79.2% ($n = 17$ offenders) had assigned paraphilia diagnoses. Specifically, 75.0% ($n = 36$ offenders) were diagnosed with sexual sadism; 39.6% ($n = 19$ offenders) with pedophilia; and 39.6% ($n = 19$ offenders) with both pedophilia and sexual sadism. The homicidal sex offenders demonstrated significantly higher arousal to pedophilic and assaultive pedophilic stimuli during phallometric assessment than did a comparison group of incest sexual offenders. The prevalence of paraphilias in the prostitute serial murderer sample serves as further evidence of their compulsive and deviant sexual interests, compounding the likelihood for sexual aggression when this documented recidivism risk factor (Hanson & Bussiere, 1996; 1998) is added to the lengthy list above.

Interestingly, single and serial offenders did not differ significantly with respect to

sexual sadism, although the serial group had a higher percentage of cases in this paraphilia category than the single group. The small percentage of offenders exhibiting sexually sadistic interests in the serial group differs from the higher prevalence of this pathology reported elsewhere in the literature (e.g., Firestone et al., 1998; Geberth & Turco, 1997; Ressler et al., 1988). As previously mentioned, during the study a revised, more restrictive definition of sexual sadism - encompassing extreme behaviors, forms of torture, and/or the use of excessive ligatures on the victim (W. D. Lord, personal communication, November 16, 2000) - was employed. Although this behavior was rarely exhibited in the study, there was a subset of offenders in each group, most notably among the serial offenders, who did exhibit sexually sadistic interests consistent with the serial murderer and sexual sadist literatures (Dietz et al., 1990; Geberth & Turco, 1997; Ressler et al., 1988).

Prior to committing the homicide, the serial offenders were significantly more often in a positive state of arousal (e.g., feeling excited, "turned on," sexually aroused, etc.) than the single offenders who were, conversely, more unlikely to be in this physiological state. Although this criterion was difficult to code from the homicide case files, resulting in a low sample size, the higher proportion of precrime arousal among the serial offenders is consistent with the earlier FBI research on serial murderers (Ressler et al., 1988). Further, the serial perpetrators solicited their victims for sexual services prior to the homicide significantly more frequently than the single perpetrators, providing further evidence of their sexual motivations and interests. Promiscuity has also been cited as a predictor of sexual reoffending (Hall, 1990). Conversely, although the majority of single murderers also solicited their victims for sex prior to the homicide, a large

proportion of them were significantly less likely to do so than the serial murderers.

Similarly, serial homicides were significantly more likely to have a sexual motive than the single homicides, although sexual motives were predominant in the majority of the cases. However, the single homicides were also significantly more likely to have a nonsexual motive (e.g., revenge, interpersonal dispute, related to drug trafficking, etc.) than the serial homicides. Although based on only a few cases, equal numbers of perpetrators committed a criminal act in the week prior to the homicide. This acting-out behavior was noted in Ressler et al.'s (1988) serial murderer sample. It is believed that the restricted timeframe used to code this behavior (i.e., within 7 days of the homicide) limited the number of included cases. Anecdotally, it was observed that offenders committed criminal offenses in the weeks prior to and following the prostitute homicide. That serial offenders were more frequently aroused prior to the homicide; that they more often solicited the victims for sex; and that their homicides overwhelmingly had sexual motivations further supports the assertions made above that they differ from the single offenders in the areas of sexual interests, deviance, and compulsivity.

Serial murderers had a significantly higher Psychopathy Checklist-Revised (PCL-R; Hare, 1991c) Total Score than the single murderers, averaging approximately 31 and 25, respectively. The serial offenders' mean Total Score of 31 surpasses the clinical cutoff score of 30 for psychopathy iterated by Hare (1991b), placing them at the 82nd percentile on a norm of male prison inmates (Hare, 1991c). The single offenders' mean Total Score of 25 also classifies them as psychopaths in this study, which utilized the cutoff score proposed by Wong (1984, as cited in Rice et al., 1992) for file-based PCL-R protocols. Using Hare's (1991c) prison inmate norms, this score corresponds to the 55th

percentile. Using the interpretations of Firestone et al. (1998) as a guide, these comparisons suggest that the serial offenders had greater personality and criminal lifestyle disturbance than the single offenders and as compared with a norm of male prison inmates. Further, the single offenders had essentially average levels of character and lifestyle disturbance with the male prison inmates (Firestone et al., 1998).

The serial homicide offenders had a significantly higher PCL-R (Hare, 1991c) Factor 1 Score than the single homicide offenders, averaging approximately 13 and 10, respectively. As mentioned previously, this Factor encompasses the interpersonal and affective aspects of psychopathy, including glibness and superficial charm, grandiosity, pathological lying, conning/manipulative behavior, a lack of remorse or guilt, shallow affect, callousness and a lack of empathy, and failing to accept responsibility for one's actions (Hare, 1991b, p. 38). This finding, in some ways, is not surprising. One would assume that an individual who kills multiple victims has little empathy for them or remorse for his actions. Further, by continuing his homicidal pattern he fails to take responsibility for his behavior. As compared with Hare's (1991c) norm sample of male prison inmates, the serial and single offenders' Factor 1 Scores had percentile ranks of 85.8% and 60.5%, respectively. The serial offenders had a markedly higher level of personality disturbance than the single offenders and male prison inmates, accounting for the significant difference between offender groups on the Total Score. The single offenders had slightly more character disturbance as compared to the norm of prison inmates (Firestone et al., 1998).

More interesting, however, are the "manipulative," "conning," "glibness," and "superficial charm" components of this Factor as applied to serial murderers, suggesting

that these men are "sweet talkers" who easily convince and deceive their victims, "talking past" any forms of security screening they might employ. However, this argument is tempered in light of the significant risk behaviors undertaken by the crack cocaine-addicted serial victims, which included working alone, failing to screen customers, and having sexual encounters in isolated areas. The cases of several serial offenders who utilized crack cocaine as a lure (M. Steinbach, personal communication, November, 2000) to engage in sex-for-crack exchanges with desperate, inner-city African-American women, who they then murdered, best illustrates the merging of these offender and victim behaviors.

No significant difference was found between the single and serial offenders with respect to their PCL-R (Hare, 1991c) Factor 2 Scores. However, the serial perpetrators had a slightly higher mean score than the single offenders, averaging approximately 14 and 12, respectively. Factor 2 pertains to psychopathic lifestyle variables, including a need for stimulation, parasitic lifestyle, poor behavioral controls, early behavioral problems, a lack of realistic long-term goals, impulsivity, irresponsibility, juvenile delinquency, and revocation of conditional release (Hare, 1991b, p. 38). As repeatedly mentioned, the single and serial perpetrators, on the surface, resembled each other with regard to their background and lifestyle. The use of illicit drugs; homelessness; periods of incarceration; lengthy and violent offense histories; frequent sexual encounters with prostitutes; and unskilled work characterized both groups. These all are indicative of a need for stimulation, poor self-control, impulsivity, and a lack of long-term goals. The offenders' lack of behavioral controls and impulsive tendencies also contributed to their many arrests and subsequent violations of conditional release. As compared with Hare's

(1991c) norm of male prison inmates, the serial offenders had a percentile rank of 71.1%, while the single offenders had a percentile rank of 51.1%. These figures show that the serial offenders' antisocial lifestyle was slightly more unstable than those of the single offenders and inmates. Conversely, the single offenders and inmates had proportional levels of lifestyle disturbance (Firestone et al., 1998).

The high levels of psychopathy found in the serial murderer sample, when viewed in conjunction with their sexually deviant interests and sexual offending histories, are particularly disturbing. Firestone et al. (1998) found significantly higher PCL-R (Hare, 1991c) Factor 1, Factor 2, and Total Scores in their sample of homicidal sex offenders than in their comparison sample of incest offenders. As previously mentioned, the homicidal sex offenders in the sample had extensive nonsexual criminal and violent offense histories and deviant sexual arousal to aggressive pedophilic stimuli, with 70% of these individuals utilizing excessive violence, weapons, and/or mutilation on their victims.

As mentioned, psychopathy and the DSM IV (1994) diagnosis of antisocial personality disorder have been found to be predictive of sexual offense recidivism as well as violent offense recidivism (Hanson & Bussiere, 1996; 1998; Harris et al., 1993; Rice & Quinsey, 1997). For instance, Quinsey, Rice, et al. (1995), who compared samples of rapists and child molesters, found that higher PCL-R (Hare, 1991c) ratings were related to higher levels of deviant sexual interest, a higher number of prior rapes against females, and more prior convictions. Rice and Harris (1997), examining recidivism over time in a sample of rapists and child molesters, reported that psychopaths with deviant sexual interests recidivated both sexually and violently most quickly and to the highest degree.

Notwithstanding the obvious sampling differences, the serial murderers of prostitutes in this study had high scores on the PCL-R combined high numbers of sexual, nonsexual, violent, and property offenses as well as multiple paraphilias, not only confirming the predicted sexual and violent outcomes listed above, but extending them into the realm of serial sexual homicide.

The salience of these predictors in the serial sample could be useful to law enforcement personnel, who could utilize them to compile or narrow down a list of potential suspects (i.e., by looking for a history of sexual offenses and deviant interests in addition to a history of general criminal and violent offenses). In light of the serial offenders' elevated level on PCL-R (Hare, 1991c) Factor 1, the police might question prostitutes on the street about "smooth talking" males who have engaged in violent and/or sexually aggressive acts, to include unusual paraphilic activities (e.g., acts with children, sexually sadistic activities, or requests alluding to necrophilia).

On the other hand, the single offenders, who had elevated psychopathy levels as well as high numbers of nonsexual, violent, and property offenses, more closely resemble those individuals in a general prison population. Specifically, these criminal offense variables, as well as psychopathy and antisocial personality disorder, were found to predict violent recidivism in a recent meta-analysis (Hanson & Bussiere, 1996; 1998). In a series of studies involving psychopathic and nonpsychopathic prison samples, Hare and McPherson (1984) found that psychopaths had more overall criminal charges, violent charges, and nonviolent charges than nonpsychopaths; that they were the most violent group (e.g., more likely to be involved in assaults, fights, armed robberies, and to use a gun); that they were more likely to possess, threaten to use, and to use a weapon; and that

they were more likely to recidivate violently while not incarcerated than the comparison groups. As shall be illustrated in a later section, the single offenders more frequently used knives in their attacks, supporting the above assertion.

Additionally, Williamson et al. (1987), comparing incarcerated psychopaths and nonpsychopaths, found that psychopaths were significantly more likely to commit serious violent assaults and property offenses, although nonpsychopaths were more likely to commit murder. The psychopaths more often had material gain or revenge as a motive in their crimes; more often had stranger victims, reflecting their tendency to avoid lasting personal attachments; and more often used alcohol during offenses than nonpsychopaths. Interestingly, there were no differences found between the psychopaths and nonpsychopaths in relation to numbers of sexual assaults committed or to having sexual gratification as a motivation. Furthermore, nonpsychopaths committed murder more frequently during periods of emotional arousal (e.g., jealousy, rage, argument) than the psychopaths, who were more emotionally detached.

In contrast to Williamson et al.'s (1987) findings, the psychopathic single offenders in this study were all murderers. Although they were a selected sample, the single offenders' high psychopathy ratings do conflict with the authors' assertion that they would likely commit violent acts short of murder. Next, the single prostitute murderers, although principally sexually motivated, did have a significantly greater proportion of cases with nonsexual motivations than the serial murderers, only partially supporting Williamson et al.'s (1987) findings. Moreover, the single offenders were most often acquainted with their victims, again, conflicting with the above findings. Conversely, consistent with Williamson et al.'s (1987) conclusions, the single offenders

in this study, in contrast with the serial offenders, ingested alcohol in a greater percentage of homicides; were more likely to have an alcohol abuse history; and were the only offender group evidencing alcohol-related charges.

The reasons for these mixed results are unclear, although sampling differences (e.g., murderers versus nonmurderers) cannot be ruled out. At least some of the single perpetrators in this study did have sexual offending histories, which may have changed their overall "profile" to represent a tempered version of the psychopathic, sexually deviant serial offenders described previously. Also, because the single offenders, like the serial offenders, frequently visited vice areas proximate to their residences and solicited numerous prostitutes for services, it follows that they would likely be acquainted with their target population and, as such, may represent a unique subsample of psychopaths. In this regard, the prostitute-customer relationship has been perceived as a paid arrangement for sexual activities without intimacy by some male customers (de Graaf et al., 1996), seemingly attracting psychopathic individuals who only seek a sexual release and not a lasting relationship.

It must be stated that the single and serial offender sample sizes were generally small in the above PCL-R (Hare, 1991c) comparisons, ranging from 11 to 28 offenders in each group. It is possible that this factor, combined with sampling bias, may have influenced the results. Further, the research assistants in the study were law enforcement officers and did not have prior exposure to the clinical administration and scoring of the PCL-R, unlike this writer. Although the raters received standardized instruction on the use of the instrument, training differences, to include perceptions of the offenders themselves (e.g., "bad guys" not amenable to treatment versus clinically disturbed

individuals who have the potential to change behaviors through treatment), may have influenced the ratings. This may have produced a "halo effect," with the nature of the homicides themselves resulting in higher ratings across items by the researchers (Coleman, Butcher, & Carson, 1984; Firestone et al., 1998). Firestone et al. (1998) acknowledge that prior rater knowledge about an index homicide may influence PCL-R ratings, but conclude that the behavior cannot be disregarded. The possibility of response sets in the PCL-R ratings cannot be ruled out, whereby the team members may have coded items consistently from a certain perspective, or bias, as hypothesized above, ignoring their individual content (Cozby, 1985).

The offender groups did not differ significantly in relation to evading the police due to actual or perceived law enforcement pressure, although the serial offenders did engage in this behavior more frequently. The serial murderers did have a significantly higher number of prior addresses, prior jobs, and proportion of individuals with poor work histories than the single murderers. These findings suggest that the serial offenders in the sample had a more transient, unstable lifestyle than the single offenders, characteristics encompassed by PCL-R (Hare, 1991c) Factor 2. Despite its nonsignificance, as described above, the serial offenders did have a higher mean score on this Factor than the single perpetrators, which might account for some of these differences. However, it was difficult to code prior addresses and previous jobs within timeframes, as stipulated in the PHQ, from the case file documentation, which was often lacking in these areas. As such, rater error may have contributed to these findings.

Approximately equal percentages of offenders solicited victims in vehicles and on foot within each group, supporting the aforementioned finding in the study where equal

percentages of victims worked in stroll areas (frequented by customers in vehicles) and nonstroll/ neighborhood areas (frequented by foot traffic customers). There were no significant differences between the perpetrator groups with respect to "cruising" (i.e., engaging in victim selection) in vehicles or otherwise stalking the victim prior to the homicide. The majority of all offenders did not engage in this behavior. However, among those who "cruised," the serial offenders encompassed the larger percentage of cases, while the majority of single perpetrators did not engage in this stalking behavior. The documentation of this "cruising" behavior in the prostitute serial killers is consistent with the findings of Ressler et al. (1988) in the FBI's serial murderer sample.

Few offenders drove new vehicles, although a higher percentage of serial offenders drove nondescript vehicles than single offenders. Additionally, a larger proportion of single perpetrators utilized poorly maintained vehicles. These findings could simply be an artifact of the case sample. On the other hand, they might suggest more planning on the part of serial offenders (e.g., driving discreet vehicles to avoid detection) or, more simply, might be indicative of a lack of economic resources. For instance, one might expect homeless, drug-addicted, and/or unemployed offenders to be less likely to possess a vehicle, while those earning a minimal income from unskilled work might be less likely to own a newer vehicle.

The serial offenders were significantly more likely to bring their victims to a preselected area than the single offenders, reflecting a higher degree of planning. This behavior is a characteristic of the "organized" serial murderer typology (Ressler, Burgess et al., 1986; Ressler et al., 1988), and has also been demonstrated in sexual sadists (Dietz et al., 1990).

How These Findings Relate to the Expected Data Patterns in Study Aim #1 b):

“Perpetrator Characteristics Form” Blocks may suggest the following

distinctions:

i). Single homicide perpetrators may more likely be from the drug subculture (i.e., drug addict, drug dealer, have history of drug abuse) and/or be closely associated or intimately involved with the victim (i.e., a spouse, a pimp, a fellow drug user, a significant other) (Bourgois & Dunlap, 1993; Faugier & Sargeant, 1997; Silbert & Pines, 1982). As such, single homicides may more likely evidence nonsexual motives.

The majority of single offenders were, indeed, known or suspected drug abusers, supporting the expectation that this problem would be prevalent among them. However, it must be noted that the majority of serial offenders were also known or suspected drug abusers. The data also revealed that most single homicide offenders knew their victims, supporting this expected trend. Because the degree of the victim-perpetrator relationship was not operationalized beyond being acquainted in this study, ascertaining whether or not they were more intimately involved was not possible. However, it is known that the majority of the offenders lived in the areas where they killed, and were familiar members of the local drug and prostitution subculture. Unlike the single homicide offenders, the serial homicide offenders attacked strangers, as well as acquaintances, in equal proportions. Surprisingly, few of the offenders in the sample were involved in pimping, drug distribution, or other regular criminal activities.

As mentioned previously, the single homicides were principally sexually motivated, but did encompass a significantly greater percentage of cases with nonsexual motivations than the serial homicides, supporting the expected data pattern. This result,

in conjunction with the finding that most single homicide perpetrators and victims knew each other, suggests that a percentage of the single homicides contained an interpersonal component.

ii). It is anticipated that serial murderers of prostitutes will likely have higher levels of psychopathy as measured by the Psychopathy Check List-Revised (PCL-R; Hare, 1991c) (Geberth & Turco, 1997; Quinsey, Rice, et al., 1995; Rice & Harris, 1997) as well as higher frequencies of sexual and nonsexual offenses (e.g., Hanson & Bussiere, 1998; Hare & McPherson, 1984; Quinsey et al., 1995; Rice & Harris, 1997). Based on existing evidence (e.g., Ressler et al., 1988), it is believed that serial murderers of prostitutes will more frequently demonstrate sexual motivations than single murderers of prostitutes.

These expected data patterns were largely supported by the findings. As previously explained, serial offenders had higher PCL-R (Hare, 1991c) Total and Factor 1 Scores than the single offenders, indicating that their overall elevated psychopathy level was accounted for by their having a more manipulative and deviant interpersonal lifestyle. Interestingly, the groups did not differ with regard to PCL-R (Hare, 1991c) Factor 2, encompassing a chronically unstable, parasitic, and criminal lifestyle. As previously described, the offender groups resembled each other “superficially” in this regard, appearing like members of a general prison population, which may account for their mutual histories of substance abuse as well as elevated and similar numbers of nonsexual and violent offenses. This result had not been expected a priori.

Conversely, as explained, “under the surface,” the serial perpetrators differed markedly from the single offenders in light of their salient sexually deviant activities and

interests. As expected, the serial offenders did have significantly higher frequencies of prior adult and child sex offenses and significantly higher numbers of deviant sexual interests (e.g., pedophilia and necrophilia). The serial murderers also demonstrated a host of other sexual recidivism risk indicators to a significantly greater degree than the single murderers, including numbers of sex offense victims, types of sex crimes committed, and having stranger sexual offense victims (Hanson & Bussiere, 1996; 1998). The prevalence of psychopathy in the serial group also placed them at increased sexual recidivism risk (Hanson & Bussiere, 1996; 1998; Harris et al., 1993; Rice & Quinsey, 1997). Not surprisingly, given the prevalence of sexually deviant behaviors and interests within the serial offender group, their homicides were also significantly more likely to be sexually motivated than the single homicides. However, the majority of the prostitute homicides in the overall sample were sexual in nature. On the other hand, the single victim group contained a significantly greater percentage of cases involving nonsexual motivations, supporting the expected data trend.

iii). The literature suggests that serial killers will likely be strangers who plan their crimes, who select their prostitute victims carefully (e.g., Ressler et al., 1988), and who have or obtain the victim's trust (e.g., are regular customers or who are able to pass customer screenings) (e.g., Williamson, Hare, & Wong, 1987).

These expected trends in the data were only partially supported by the study's results. Serial murderers, as mentioned above, did not exclusively target strangers, killing an equal percentage of acquaintance victims as well. However, as compared to the single offenders, they murdered a greater percentage of strangers. The literature reveals that prostitutes will provide otherwise restricted sexual services (e.g., sex without

a condom) to regular customers (de Graaf et al., 1997; McKeganey & Barnard, 1992). Although the serial prostitute victims had a higher percentage of perpetrators who were regular customers as compared with the single prostitute victims, most offenders in each group were not regular customers. It is posited that most perpetrators in the sample did not have to earn their victim's trust, nor did they have to pass customer screenings, as were expected. Instead, the majority of the victims – to include all serial victims - would service any customer without screening them for dangerousness, although the sample size was small. In essence, the prostitute victims, who engaged in these behaviors out of desperation to support their crack cocaine addiction, made easy prey for the homicide offenders. The serial offenders, as explained above, also had an elevated score on PCL-R (Hare, 1991c) Factor 1, reflecting psychopathic personality characteristics, including manipulateness and glibness. Interpersonally, it is possible that these offenders utilized their cunning, “smooth talking” abilities to bypass any customer screenings on the part of their victims.

Serial offenders were significantly more likely to bring their victims to a preselected area than the single offenders, endorsing the expected trend that they would be more likely to engage in planning activities. Interestingly, however, the single and serial perpetrators generally did not engage in more sophisticated planning (e.g., “cruising” for victims, studying police procedures, altering vehicle to facilitate abduction, creating torture devices or kits, etc.), although those that did engage in this behavior more frequently were serial offenders. Because finding vulnerable victims was so easy within the drug-using subculture of the depressed, inner city areas where they resided, it is possible that the serial offenders hunting victims in these areas did not have to resort to

more sophisticated means (e.g., locating a hidden body disposal site, altering a vehicle to facilitate kidnapping, personifying a police officer) of planning their crimes.

For instance, it appeared that a subgroup of serial offenders utilized crack cocaine to lure their victims, who were craving the drug, into abandoned buildings in nonstroll/neighborhood areas (M. Steinbach, personal communication, November, 2000), subsequently engaging in agreed-upon sex-for-crack exchanges and murdering them in the process. Once killed, the bodies of these victims were easily left in place or otherwise concealed in these buildings – some utilized by crack addicts and prostitutes - under trash, in basements, or in other unused rooms, escaping detection. As such, these neighborhood areas conveniently provided the serial murderers with a readily accessible victim population; encounter, murder, and disposal sites; and relative anonymity within the aforementioned drug subculture.

Conversely, it is possible that the sample contained a subgroup of more criminally sophisticated offenders of higher socioeconomic status. These individuals likely owned, or had access to, vehicles, suggesting that they resided further away from the established vice areas they frequented. They also engaged in more planning and victim selection activities (e.g., cruising for victims, selecting a disposal site, etc.).

Situational-Interactional Factors Form:

Overall, it was difficult to code items pertaining to the actual homicidal interaction between the perpetrator and victim as well as those examining the offender's "internal state" (e.g., stressors, sexual fantasies, etc.) from the investigative case files. Frequently, there was a paucity of such evidence available, usually limited to perpetrator

self-reports. Interestingly, the majority of offenders in the sample were not experiencing precipitating life stressors (e.g., arguing with the victim, family members, or others; having work, legal, or financial stress, etc.) at the time of committing the homicides. Of the murderers who were suffering from life stressors, the serial offenders had a significantly greater frequency of them than the single offenders. Specifically, serial perpetrators were more likely to have discord with their parents than the single offenders. They also had higher proportions of cases involving marital or partner problems, financial stress, and other forms of stress (e.g., stress stemming from mental illness, sexual dysfunction, blaming the victim for "losing his life and family," being mocked or feeling "used" by the victim, perpetrator suffered a "flashback," where the victim reminded him of his mother, feelings of self-pity and mistreatment pursuant to abuse, jealousy, and other reasons). However, many of these findings were based on low frequencies of occurrence. Single perpetrators demonstrated higher proportions of cases involving conflict with the victim or other females and legal stress than the serial perpetrators, although the same data restrictions applied. Proportionally, the single victims more frequently suffered from employment-related stress than the serial victims, who, conversely, had a greater percentage of individuals who were not bothered by such stress.

Essentially, neither offender group seemed troubled by life stressors that may have contributed to their homicidal behavior. Their high psychopathy levels may account for some of this (e.g., being able to suppress emotions, being callous, and having a lack of remorse), although it is interesting that the serial perpetrators, who were more psychopathic, had a higher number of life stressors, which is consistent with the findings

of Ressler et al. (1988). The findings for the single murderer group do seem to support the assertion that at least in a portion of these cases, the perpetrator had a prior conflict with the victim, suggesting a more interpersonal nature to these homicides.

There were no differences between the offender groups with regard to the homicide being triggered by an argument over the sexual service arrangement or by a prior dispute with the victim. No instances of arguments over condom use were reported. Interestingly, of those cases with data, over 80% of the homicides were triggered by a victim-perpetrator argument, while approximately 20% were not. Similarly, victim resistance, which angered the offender, triggered a majority of the homicides in the overall sample. These results suggest that disputes played a central role in both the single and serial homicides, which is consistent with the literature (Bourget & Labelle, 1992; Lindqvist, 1991).

With regard to ingesting drugs and/or alcohol with the victim at the time of the homicide, there were no differences between the offender groups. Proportionally, the single offender subsample had a higher percentage of cases involving mutual drug use than the serial offender subsample, which had a slightly higher percentage of perpetrators who refrained from drug ingestion. The single prostitute homicides were more frequently precipitated by drug side effects on the perpetrator; they also had a higher percentage of cases involving murders triggered by drug side effects on the victim. The side effects of crack cocaine, as triggers for violent sexual encounters between the prostitute and customer, have been widely reported in the literature (e.g., Ratner, 1993a). These include intense feelings of craving more of the drug (Ouellet et al., 1993), violence, paranoia, irritability, hostility, loss of self-control (Sterk & Elifson, 1990), sexual dysfunction in

males (Ratner, 1993b; Inciardi, 1993), and reduced sexual interest in females (Ouellet et al., 1993; Koester & Schwartz, 1993). These results must be interpreted with caution, however, as the sample sizes were small. Nonetheless, they do, again, suggest that the effects of alcohol and drugs may have been a contributing factor to the single homicides.

As previously mentioned, Hall (1996) has reported that various situational factors (e.g., elicited anger, substance use, etc.) may facilitate sexual aggression by disinhibiting the offender. Citing the work of Pithers et al. (1988), he notes that sexual offenders often report having affective problems, or negative emotional states, prior to committing sexual offenses. These negative feelings, in turn, may motivate the offender (Hall, 1996; Nezu, et al., 1998). The serial offenders, as previously mentioned, had more sexually deviant interests, were more often aroused prior the homicides, and also had a greater reported number of stressors than the single offenders. Deviant arousal and negative affect stemming from stress comprised their "situational factors" as posited by Hall (1996). Conversely, the single offenders more frequently used alcohol, more often were ingesting substances with the victim, and had more disputes with the victim prior to the homicide, suggesting that drugs and conflict with the victim served as salient "situational factors" for this group.

Serial offenders were significantly more likely to evidence sexually sadistic fantasies through verbal admissions, writings, police confessions, and other means (e.g., discovery of violent pornography) than the single offenders. Because of the repetitive nature of their crimes, all serial offender cases were coded as evidence of their engaging in criminal actions as part of underlying fantasies (MacCulloch et al., 1983). This proportion was markedly greater than that of the single offender subsample,

approximately 1/3 of which did not evidence this form of fantasy-based acting-out. No differences between the groups were found with respect to various components of an active sexually sadistic fantasy life, including possessing trophies or souvenirs from the victim, possessing pornography, possessing or using weapons, owning police paraphernalia, engaging in sexually sadistic acts with prostitutes or others, and making kinky sex requests from prostitutes. However, the serial offenders had a greater percentage of cases endorsing each of these categories than the single offenders. Similarly, when statistical comparisons could not be computed due to low sample sizes, the serial murderers, again, had a higher proportion of individuals owning bondage materials and possessing torture kits than the single murderers.

Many of these indicators (e.g., taking trophies or souvenirs, possessing pornography, owning bondage materials, owning a torture kit, possessing police paraphernalia, and committing sexually sadistic acts) were infrequently encountered in the overall sample. It is interesting that they were exclusively prevalent among the serial offenders, likely comprising a sadistic cohort within the group. It is believed that the low sample size and statistical power in the study precluded the detection of significant differences among the aforementioned fantasy variables, especially in light of the strong relationships found between the serial offenders, deviant sexual interests, and sexual offending behavior. One would expect persons with a history of sexual deviance and violence to have an active fantasy life.

Nonetheless, the above trends in the data do support the findings of researchers who have found a prevalence of sadistic sexual fantasies and related tangible evidence (e.g., pornography collections, torture kits, police paraphernalia, etc.) in serial murderer

(e.g., Prentky et al., 1989; Ressler et al., 1988) and sexual sadist (e.g., Dietz et al., 1990) samples. Hall (1996) remarks that sexual offenders – here applied to the sample of serial murderers - may induce affective (e.g., “feeling excited”), cognitive (e.g., having deviant thoughts about raping and killing a prostitute victim), and physiological (e.g., penile erection, rapid heartbeat) states through fantasy (e.g., compulsive masturbation to sadistic fantasies, looking at trophies or souvenirs taken from victims), resulting in the commission of a sexual offense or, in this case, sexual homicide.

How These Findings Relate to the Expected Data Patterns in Study Aim #1 c):

Situational-Interactional Factors Form” Blocks may suggest the following differences:

i). *Single homicides will likely have links to drug use by the prostitute victim and/or customer (Johnson & Belfer, 1995; Ratner, 1993a). It is believed that these women will be killed for reasons ultimately attributable to the support of their drug addiction, including side effects, vulnerability while intoxicated, and related risk behaviors (e.g. engaging in a sex-for-drug exchange that “goes bad”; “holding out” on a pimp; or being involved with the drug trade). Additionally, single homicides with nonsexual motives will likely stem from arguments (Lindqvist, 1991; Ratner, 1993a) or crimes of passion (e.g., a lover’s quarrel or domestic violence) (Bourget & Labelle, 1992).*

These expected trends in the data were only partially supported by the study’s findings. As previously mentioned, the majority of victims engaged in prostitution to support their cocaine addiction, working under the influence of this drug, refuting the expectation that the single victims would principally be substance-using. The serial

victims evidenced a significantly higher percentage of cases with postmortem cocaine and cocaine metabolite in the blood at the time of death. The mean level of cocaine intoxication in the serial victims was also higher than that of the single victims, although this finding was not significant.

No differences existed between the victim groups with respect to having alcohol in their blood at the time of death; both groups also exhibited nearly identical levels of alcohol present in postmortem blood. However, proportionally, the serial victim group did have a higher percentage of victims under the influence of alcohol at the time of death. The aforementioned findings, although based on small sample sizes, suggest that the serial victims were more frequently intoxicated on higher levels of cocaine than the single victims, with further indications that they also utilized alcohol on a more widespread basis. This counters the a priori belief that the single prostitute victims would evidence greater vulnerability through drug intoxication than the serial prostitute victims.

Interestingly, although based upon a small sample of cases, the single homicide subsample evidenced a higher proportion of cases involving mutual drug and/or alcohol ingestion by the victim and perpetrator than the serial homicide subsample. However, this finding was nonsignificant. Furthermore, the single victim group had a greater percentage of homicides triggered by the side effects of drugs on the perpetrator and/or victim than the serial victim group, although, again, this was not a significant difference. Similarly, a slightly larger proportion of single homicides were precipitated by victim-perpetrator conflicts as well as by arguments over their sexual service arrangements, although this finding was nonsignificant. Again, these results are consistent with what has been reported in the interpersonal violence literature (Bourget & Labelle, 1992;

Lindqvist, 1991).

In light of the low sample size, and corresponding low power, it is difficult to ascribe the negative effects of substance use to just the single prostitute victim group, as serial homicides were also triggered by drug-induced arguments. Further, the serial victims, as discussed, appeared more vulnerable to victimization in light of the sequelae of their chronic pattern of crack cocaine abuse, including homelessness, intoxication on-the-job, and comorbid risk behaviors (e.g., working alone, failing to screen customers, neglecting to use security measures, etc.).

With consideration given to the low occurrences of situational factors recorded in the study, the single cases seem to more clearly involve a triggering event stemming from an argument or the side effects of drugs, potentially occurring during mutual drug ingestion (e.g., during casual drug use or during a sex-for-crack exchange), lending support to this expected data pattern. This finding would be consistent with the comorbidity of crack cocaine ingestion, side effects, and violence reported in the literature (Ratner, 1993a; Sterk & Elifson, 1990). As previously mentioned, there was a significantly greater percentage of single cases involving nonsexual motivations – of which these interpersonal disputes would be a part – than serial cases. However, these findings are at best, tentative, and should be tested with a larger sample size.

ii). Serial murderers will exhibit more indicators of sexual sadism and deviant sexual fantasies (Geberth & Turco, 1997; MacCulloch et al., 1983; Ressler et al., 1988) than single prostitute killers.

This expected data pattern was largely supported by the results. As previously discussed, the serial offenders were significantly more likely to evidence sexually sadistic

fantasies through verbal admissions, writings, police confessions, and other means than the single offenders. This is particularly interesting in light of the private nature of these deviant fantasies and interests among sex offenders, which are difficult to assess in clinical settings (Lanyon, 2001). It is possible that the serial murderers' interpersonal tendencies toward grandiosity and glibness – characteristics associated with PCL-R (Hare, 1991c) Factor 1 – may have facilitated their discussing fantasies more openly with others, including the police. Using coding criteria, all of the serial offenders engaged in criminal activities (e.g., adult and child sex offenses, paraphilia-related offenses) that were suggestive of these underlying fantasies. Although a statistical comparison was not possible, they engaged in these actions to a considerably greater degree than the single offenders.

Further, although no significant differences were found between groups with respect to various fantasy-related variables (i.e., possessing trophies and/or souvenirs, pornography, bondage materials, a torture kit, weapons, and/or police paraphernalia; committing sexually sadistic acts against prostitutes and other people; and making kinky sex requests from prostitutes), the serial murderers had a higher percentage of endorsements in each of them, strongly suggesting the presence of an active fantasy life, as was hypothesized. These trends support the findings of other serial homicide research (e.g., Prentky et al., 1989; Ressler et al., 1988). Collectively, they also lend support to the sex offending findings previously reported, confirming the presence of active fantasy lives amongst persons with known histories of sexual deviance and aggression.

As previously mentioned, it is believed that the low sample size and corresponding low power precluded many of these fantasy variables from obtaining

significance. Additionally, because these items were so infrequently documented in the case files, it was often impossible to conduct valid nonparametric analyses. However, their infrequency, as posited above, may be indicative of a sexually sadistic cohort of offenders, notably within the serial group.

Crime Scene Variables Form:

The serial prostitute homicide victims were significantly more likely to die of manual or ligature strangulation and, to a lesser extent, blunt force trauma and gunshot wounds than the single prostitute homicide victims. The prevalence of strangulation as a cause of death seems to reflect a sadistic, literally "hands-on" aspect to the serial murders, involving much control (e.g., being able to choke the victim in-and-out of consciousness). Conversely, the single victims were significantly more likely to die of stab or cutting wounds than the serial victims. These victims also had a significantly larger percentage of cases involving major trauma to the arms, which might be attributable to defense wounds from knife attacks.

No differences were found between the victim groups with respect to major trauma to the torso. Although the serial victims had a higher percentage of cases with head trauma in comparison with the single victims, the single group subsample, proportionally, had a higher percentage of these cases than the serial group. This might reflect a preponderance of stab/cutting wounds to the victim's head and neck area, suggesting a more personalized attack on the victim (Geberth, 1996). The additional findings that single homicides had a higher percentage of cases with overkill than the serial homicides as well as a significantly higher number of secondary injuries (i.e., those

injuries inflicted beyond the fatal wound or wounds), notably stabbing and cutting wounds, further support the ongoing argument in this discussion that these homicides may have occurred pursuant to an interpersonal dispute (Geberth, 1996). The single victims also received a higher proportion of blunt force trauma wounds than the serial victims, a finding that approached significance. Gunshot wounds were infrequently reported in the sample, with no differences found between groups.

There were no other striking differences between groups in relation to other areas of major trauma (i.e., breast, buttocks, genitals, anus, and other locations), and they occurred too infrequently to be compared statistically. The paucity of trauma to the victims' sexual areas – with the exception of a small cohort of offenders who exhibited this psychopathology - is interesting. It may reflect the absence of sexual sadism within the sample as compared to other research with sexual sadists (e.g., Dietz et al., 1990; Hazelwood et al., 1993), which has reported trauma to the sexual organs (e.g., mutilation, insertion of foreign objects).

Serial offenders were significantly more likely to engage in vaginal and anal sex with their victims than the single offenders. No differences were found between groups with respect to the victims performing oral sex on the perpetrators, which was the most infrequent sexual behavior recorded after anal sex and vaginal sex, respectively. The serial prostitute victims were also more likely to have semen evidence recovered from their vagina, anus, or mouth than the single victims, a finding that approached significance. Although the prevalence of DNA evidence in the serial victims may be characteristic of a more “disorganized” group of offenders (i.e., leaving incriminating evidence, as described by Ressler et al., 1988), the possibility of other male customer's

DNA being present in the victim cannot be ruled out, especially in light of the well-documented tendencies of cocaine-addicted prostitutes to engage in frequent sexual encounters without condoms (de Graaf et al., 1997; Gunn et al., 1995; McKeganey & Barnard, 1992; Ratner, 1993a).

The high number of occurrences of anal sex in the serial sample initially seems surprising, since this is usually a forbidden sexual activity (Green et al., 1993). However, in light of the serial victims' desperation to obtain crack cocaine at any expense, they may have permitted this activity to occur. This would be consistent with the sexual risk behaviors taken by this population (Green et al., 1993; Inciardi, 1993; Ratner, 1993a). However, in several of the serial cases, anal intercourse was postmortem. Indeed, the serial offenders engaged in necrophilia significantly more frequently than the single offenders. Over 40% of the FBI's' initial sample of serial sexual homicides involved postmortem sexual activities. Milner and Dopke (1997), citing Rosman and Resnick's (1989) study of 122 necrophiliacs, report that a majority of necrophiliacs engaged in this behavior "to have a reunion with a partner," because they were attracted to dead bodies, to increase their personal comfort or to decrease feelings of isolation, or "to have power over a homicide victim" (p. 407).

Anecdotally, serial offenders in the sample did report becoming aroused by dead bodies and to enjoying postmortem sexual intercourse. The latter "control" factor listed by Milner and Dopke (1997) is also applicable to this sample of serial offenders, whose frequency of anal intercourse demonstrated control over the sexual transaction (i.e., by convincing the victims to perform otherwise taboo sexual acts) (Green et al., 1993) while the prostitute victim was alive, and seemingly total control when she was dead. It must

be stated that this necrophilic activity, which occurred infrequently in the sample, was attributable to only a few offenders.

Similarly, the use of restraints, victim torture, mutilation of the victim's body, and other unusual attacks on the corpse (e.g., running over the body with a vehicle; exploring, probing, or mutilating wounds; and other strange forms of assault) were detected in a small number of cases, with serial murderers exhibiting the greatest percentage of these behaviors. The low incidence of these sadistic, or even psychotic, behaviors is consistent with the low frequency of sexual sadists in the overall sample, who were more often serial offenders. This resembles the pattern in Firestone et al.'s (1998) study, where only 8 of 46 homicidal sex offenders engaged in mutilation and murder. Conversely, the FBI's sample of serial offenders had higher prevalences of torture and mutilation, respectively (Ressler et al., 1988). Given the prevalence of these indicators in the serial perpetrator group, it is argued that the police should rule-in the possibility of a serial offender should they encounter the presence of sexually sadistic activity, including torture and mutilation, at a prostitute homicide crime scene.

Interestingly, a large proportion of offenders in each group depersonalized their victims, with serial murderers having a higher percentage of individuals who engaged in this behavior. However, this criterion was difficult to code from the file evidence. It is possible that some cases may have been efforts at body concealment or, simply, the body's final resting position (i.e., on stomach) after the assault, rather than the offenders' attempts to distance themselves from their victims through such body positioning or other means, including mutilation, blindfolding, or covering the victim (Holmes & Holmes, 1996; Ressler et al., 1988).

Consistent with what has already been reported, few instances of disfiguring the victim's body (e.g., burning or dismembering the body) were found in the overall sample, with no significant differences found between the single and serial offenders. When the removal of body parts from the victim's body and/or disembowelment did occur, serial offenders were responsible for the greatest percentage of these behaviors. Although this behavior may be an attempt to prevent the victim's identification, it might also represent the taking of trophies (i.e., a symbol of the perpetrator's conquest of the victim) or souvenirs (i.e., an item taken to remember the victim) from the victim, consistent with the behavior of the serial killers in Ressler et al.'s (1988) sample.

Similarly, few cases involving the performance of rituals at the crime scene were reported (e.g., making rock formations, defecating or urinating at the crime scene, burning candles, leaving dead animals, or other unusual activities), although serial murderers had the largest proportion of cases involving this activity. Again, despite small sample sizes and low frequencies of occurrence, these trends in the data support the assertion that a subgroup of serial prostitute murderers in the sample exhibited more idiosyncratic and sexual crime scene behaviors.

Approximately 75% of the total offender sample tampered with crime scene evidence (e.g., destroyed or removed evidence, including the victim's body), resembling the "organized" offender subtype proposed by Ressler et al. (1988). The similar criminal backgrounds of both offender groups, as well as their high levels of psychopathy, may help explain this finding. The single and serial offenders had lengthy histories of criminal offenses and periods of incarceration through which, presumably, they may have learned to become "better" criminals (e.g., learning the workings of the legal system,

including the importance of circumstantial evidence). Furthermore, their callousness and desire for self-preservation, irregardless of having murdered the victim, would likely compel them to remove incriminating evidence from the crime scene.

There were no significant differences between the offender groups with regard to using bludgeons or firearms as murder weapons, reflecting the relative infrequency of blunt force trauma and gunshot wounds as causes of death. However, the single murderers utilized stabbing or cutting weapons significantly more often than the serial murderers. On the other hand, the serial perpetrators used their hands or feet as murder weapons significantly more frequently than the single perpetrators. Additionally, although not a significant result, the serial killers did utilize a ligature in a greater percentage of homicides than the single killers. These findings support the assertions made earlier in this section. The serial offenders' use of their hands to strangle their victims reflects dominance, control, and sadistic overtones. Conversely, the single offenders' use of knives, in conjunction with the presence of higher numbers of secondary injuries and defense wounds on the victim, reflects an interpersonal dispute, culminating in a rageful assault (Geberth, 1996).

Interestingly, an inspection of the 1999 Uniform Crime Reports (FBI, 2000a) for "Murder Circumstances by Weapon" reveals that "personal weapons" (i.e., hands, feet, fists, etc.) were most frequently recorded in the "robbery" ($n = 49$ victims), "other – not specified" ($n = 41$ victims), and "narcotic drug laws" ($n = 14$ victims) "felony type" categories. "Knives or cutting instruments" accounted for 105, 26, and 31 murders in these categories, respectively. Under the "prostitution and commercialized vice" felony category, there were 7 victims recorded, 4 listed in the "other guns or type not stated"

category, 2 in the "strangulation" category, and 1 in the "asphyxiation" category. In the "other than felony type" categories of "argument over money or property," "other arguments," and "other - not specified," there were 18, 212, and 260 victims who died by "personal weapons," respectively. In these same categories, 30, 766, and 165 persons were killed by "knives or cutting instruments, respectively (p. 21).

These official figures suggest that at least 2 prostitutes were killed by strangulation in 1999. Regrettably, one is left to surmise that the "other - not specified" categories classified as "felonies" or "other than felonies" might contain other prostitute victims who may have died of strangulation, stab, or cutting wounds. Stabbing or cutting instruments were used frequently in robberies and drug-related felonies as described above. Additionally, in the "argument over money or property" and "other arguments" categories of the "other than felony" classification, knives were overwhelmingly used as weapons, rather than hands and feet. These trends lend some support to the argument that at least a portion of the single homicides were nonsexually motivated, occurring pursuant to interpersonal disputes.

Comparing the single and serial offender subsamples, proportionally, the single offenders utilized weapons of choice (excluding hands and/or feet) in a higher percentage of homicides than the serial offenders, although there was no significant difference found between groups. Conversely, the serial perpetrators had a higher percentage of cases involving weapons of opportunity (excluding hands and/or feet) than the single offenders. No differences were found between the prostitute homicide offenders with regard to whether the weapon was recovered at the crime scene, recovered elsewhere, or not recovered. Although based on modest sample sizes, these patterns indicate that single

offenders planned their use of weapons, appearing more organized, while serial offenders utilized weapons from the crime scene spontaneously, appearing more "disorganized," as described in the FBI's serial homicide research (Ressler et al., 1988).

In toto, the single and serial murderers did not differ with respect to their overall behaviors exhibited at the crime scene. Both groups tampered with evidence, did not disfigure their victims' bodies, and, generally, did not engage in sadistic behavior (e.g., torture, mutilation, etc.) or other bizarre activities (e.g., performing rituals). However, underneath this similar façade, the serial murderers did differ from the single murderers in relation to the controlling nature of their assaults (e.g., preferring to use manual strangulation, having anal sex with the victim); more frequently engaging in sexual activities with the victim; demonstrating deviant sexual interests (e.g., engaging in necrophilia); and, when it did occur, engaging in idiosyncratic behaviors that reflected sadistic fantasies or, otherwise, attached personal meaning to the victim's body (e.g., torturing or mutilating the victim, using restraints, removing body parts, or performing rituals at the crime scene). On the other hand, the single homicides more frequently involved the use of knives; had higher numbers of secondary injuries, including what appeared to be defense wounds on the arms; more frequently exhibited overkill; and were less likely to involve sexual activity than the serial homicides, suggesting that a proportion of these murders had nonsexual motivations, stemming from perpetrator and victim arguments.

Body Disposal Form:

There were few differences in the general and more specific locations where the

victims' bodies were recovered. The majority of prostitute victims were disposed of in urban areas. Within these areas, they were most frequently found in residential areas, followed by business, industrial, or commercial areas. Interestingly, the majority of single and serial victims were recovered in nonvice locations. There were no differences between the victim groups with regard to specific body disposal locations, although the majority of serial victims were dumped in "other" areas (e.g., near highways, in construction areas, in ravines, near water, etc.), exceeding the percentage of single victims dumped in these areas. Conversely, the majority of single victims were found in apartments, residences, hotels, or motels. The high number of cases in the "other" body disposal category was attributable to their not corresponding with available choices on the PHQ (Dudek & Nezu, 2000) protocol.

The serial homicides were significantly more likely to have different murder and body disposal locations than the single homicides. This suggests that the serial offenders more frequently engaged in planning and were willing to take risks to transport the body to a distant location, consistent with the profile of an "organized" offender (Holmes & Holmes, 1996; Ressler et al., 1988). Like the body disposal site description above, the majority of victims in the sample were killed in urban areas. More specifically, most were killed in residential neighborhoods, followed by business, industrial, or commercial areas. The majority of victims were killed in nonvice areas. Interestingly, however, the serial victim group had a significantly greater proportion of victims killed in vice areas than the single victim group, which had a greater percentage of victims killed in nonvice areas. There were no specific differences between groups with respect to the specific locations where the victims were killed.

The aforementioned descriptions of the body disposal and murder sites reveal similarities, yet subtle differences, in the perpetrators' behaviors. Overall, the victims were disposed of in similar general areas and neighborhoods, although their specific locations, or final resting places, tended to be different. Specifically, single victims were recovered in places where they might have resided or worked, while serial victims were typically dumped outside, either openly or concealed. Most victims were, again, killed in residential neighborhoods within urban areas, with no differences in the specific locations; however, the serial group had a significant proportion of victims killed in vice areas, unlike the single group. The finding that single victims were principally killed in nonvice areas may point to their having more nonsexual-type interactions with the perpetrator prior to death, while the serial victims, who were killed in vice areas, is more suggestive of sexual encounters with the perpetrator. However, it must be stated that some of the residential areas may have actually been "neighborhood/nonstroll" areas, but were not coded as such by raters, although all were instructed to record all applicable specific locations on the protocol.

There were no differences between the victim groups with respect to the initial encounter and murder sites being the same. Specifically, the majority of cases in both groups had different sites. Most of the victims encountered the victim in an urban area, with sexual encounters occurring predominantly in business, industrial, or commercial areas with a lesser percentage occurring in residential neighborhoods. These findings are not surprising. One would expect the perpetrator to meet the prostitute victim in the street, and then walk or drive to an encounter location someplace within an established vice area or within a neighborhood/nonstroll area.

Single prostitute victims were significantly more likely to have met the perpetrator in a residence, hotel, or motel than the serial victims, who were significantly more likely to have encountered the perpetrator in an established vice area, nonstroll/neighborhood area, and, to a lesser extent, on a public street or "other" areas (i.e., school/playground, retail shopping district, vacant building, vehicle, and other locations). Serial victims were also significantly more likely to have encountered the perpetrator in a nonvice area. These results seem to suggest that serial murderers were most frequently "hunting" for victims in vice areas - either stroll or neighborhood/nonstroll - than the single offenders, who met the greatest proportion of their victims in residences, apartments, hotels, or motels where the prostitutes may have lived and/or worked, indicating the possibility of an interpersonal component to these homicides.

There were no significant differences between victim groups with respect to their last known locations and their initial encounter sites being the same. In particular, there were essentially equal proportions of victims that had sites that were the same and different. Within the subsamples, however, the serial group had a higher proportion of cases with different sites, while the single group had a slightly higher proportion of victims with the same sites. Most victims were last seen in urban areas, with similar percentages of victims last seen in business, industrial, or commercial areas and residential areas. Again, more subtly, within the subsamples most serial victims were last seen in business, industrial, or commercial areas while a greater percentage of single victims were last seen in residential areas. A larger sample size is necessary to better elucidate the significance, if any, of this pattern. However, these results do seem to

emulate those discussed above, namely, that single victims were last seen with the offender in a static location within residential areas, while the serial victims were last seen in vice areas where they met the perpetrator and subsequently moved to another location.

Resembling the initial encounter site findings above, the single victims were significantly more likely to have been last seen in a residence, apartment, hotel, or motel than the serial victims. Conversely, the serial prostitute homicide victims were significantly more likely to have been last seen in an established vice area, a neighborhood/nonstroll area, and on public streets than the single prostitute homicide victims. More simply, the serial victims were more likely to be last seen in any type of vice area than the single victims who, themselves, were most often last observed in nonvice areas. Again, the single victims were more likely to be last seen in residential settings where they might have lived or worked in contrast to the serial victims, who were last observed in stroll or neighborhood/nonstroll areas.

The serial murderers were significantly more likely to have moved the victim's body from the murder site to the body disposal site, as explained above. Although most victims' bodies were "dumped like trash," with little concern about their discovery, the serial group had higher percentages of cases where the victims' bodies were either hidden to prevent discovery or openly displayed to ensure discovery. These activities reflect additional planning by the offender to prevent the victim's identification, to maintain control over the final disposition of the victim's body, or to shock the public, for instance (Ressler et al., 1988). Interestingly, the serial offenders in this study engaged in these behaviors considerably less frequently (approximately 23% concealed the victims' bodies

and approximately 20% openly displayed the victims' bodies) than the serial killers in the FBI's sample, who reportedly engaged in these activities 58% and 42% of the time, respectively (Ressler et al., 1988, p. 59). This, again, supports the assertion that a subgroup of serial offenders in the sample resorted to more sophisticated planning. As mentioned, most victims' bodies were recovered in "other" areas (e.g., near roads, in parking lots, behind buildings, in ravines, near water, etc.), followed by buildings and, rarely, vehicles. Although the groups did not differ significantly in relation to how the bodies were found, the serial group did have a higher percentage of victims who were discovered concealed (e.g., buried, wrapped, covered, in a container, or in water), consistent with the findings above.

Although the majority of the homicide victims were found partially undressed or completely nude, the serial victims were significantly more likely to be found in this fashion than the single victims. Conversely, the single victims were significantly more likely to be found fully clothed than the serial victims. The absence of clothing on the serial victims is indicative of a sexual homicide (Ressler et al., 1988). The presence of clothing on a subset of the single victims supports ongoing argument that these homicides were nonsexually motivated, especially in light of the findings that these homicides involved interpersonal disputes, a higher number of secondary injuries and defense wounds, and less often involved sexual activity by the offender.

Despite a low sample size, the serial offenders had a greater percentage of cases involving rituals with the victim's body (e.g., washing and/or redressing the victim). This behavior, also documented by the FBI researchers (Ressler et al., 1988) in their serial killer sample, supports the assertion made previously that the serial prostitute

murderers engaged in more idiosyncratic behaviors with their victims at the crime scene than the single prostitute murderers. Serial perpetrators also overwhelmingly spent time with their victims' bodies prior to moving them to the disposal sites, while the majority of single perpetrators did not engage in this behavior. It is possible that the serial offenders utilized this time for rituals, postmortem sex or mutilation, masturbation to sadistic fantasies, or preparing the body for disposal (e.g., wrapping or concealing the body).

Consistent with the findings of Ressler et al. (1988), the serial offenders were significantly more likely to spend time with their victims' bodies during the disposal process (i.e., moving the body to the disposal site or spending time at the crime scene if the murder/disposal sites were the same) than the single offenders. Although this behavior may represent practical planning on the part of the serial offenders to dispose of their victims' bodies elsewhere, it also suggests the presence of salient, fantasy-based actions. As argued, the serial killers appear to attach more meaning to their homicidal actions and to their victims' bodies than the single offenders. Further, as mentioned previously, serial offenders have found body disposal to be sexually stimulating and behaviorally reinforcing (Ressler et al., 1985c, 1988), possibly finding this contact with their deceased victims to be more stimulating than the homicides themselves (C. M. Nezu, personal communication, February 12, 1998). Clinically, this behavior appears consistent with the necrophilic interests already demonstrated in this serial murderer sample. For instance, several offenders in the sample slept with their victims' corpses; engaged in postmortem sex; and performed rituals with the bodies (to include the act of necrophilia).

Although most offenders did not take clothing or other items from the victim, the

serial murderers were significantly more likely to take and keep these objects than the single murderers, who were significantly less likely to engage in this behavior. The taking of such items as trophies (i.e., items of conquest) or souvenirs (i.e., items taken to remember the victim) has been found to be characteristic of some serial killers (Ressler et al., 1988). The serial offenders were also significantly more likely to return to the disposal site than the single murderers. This result, which is also consistent with the FBI's prior research (Ressler et al., 1988), could signify the reinforcing properties of the disposal site in fostering the serial offender's sexual fantasies; their desire to further violate the corpse; or, possibly, to dump the bodies of additional victims in a familiar, comfortable location.

The vast majority of offenders in the sample did not observe the discovery of the victim's body. In light of the prevalence of psychopaths in the overall sample, this finding is not surprising - one would assume that these criminally savvy and egocentric individuals would avoid being caught at all costs. Despite the very few occurrences of this behavior, a higher percentage of single perpetrators observed the discovery of the victim. This is likely attributable to their calling the police to confess to the crime or because they were caught in the act of killing the victim, unlike the serial offenders. Interestingly, Ressler et al. (1988) found that observing the recovery of the victim's body was a characteristic of their serial offender sample. However, this item was difficult to code from the investigative case file materials, and was often based on what the perpetrator said - or did not say. As such, these findings must be viewed cautiously in light of the low sample size and the infrequency of this behavior amongst the prostitute homicide offenders.

Interestingly, almost 45% of the offender sample partook in their respective homicide investigations on some level, with serial offenders accounting for the greatest percentage of cases in this regard. Specifically, the serial offenders were significantly more likely to participate in the homicide investigation either indirectly (e.g., collecting news articles about the investigation, speaking about the case to friends, notifying the police that they had been "aware" or "following" the case) or directly (e.g., contacting the police or "hanging out" in establishments frequented by the police), again, reflecting their psychopathic personality characteristics, such as grandiosity (Hare, 1991c). Conversely, the single offenders were significantly less likely to join the criminal investigation. This pattern of behavior was also evidenced by the serial murderers in the FBI's sample (Ressler et al., 1988).

Almost all perpetrators in the study's sample were familiar with the encounter, murder, and disposal sites. Further, there were no significant differences found between the victim groups with respect to any of the geographic profiling variables. Specifically, the single and serial offenders lived within 5 miles of both the initial encounter and body disposal sites, although the serial murderers resided slightly further away (approximately 1 ½ to 2 miles on the average) than the single perpetrators. Further, the serial victims lived slightly further away from their disposal locations (approximately 1 mile on the average) than the single victims. Lastly, the distance between the initial encounter and body disposal sites was slightly greater for the serial victims than for the single victims (approximately 2 miles on the average).

These findings are, in many ways, not surprising. Both the single and serial offenders hunted, killed, and disposed of their victims in restricted geographic vice areas

proximate to their residences. Because ½ of the perpetrators approached their victims on foot, it is possible that they did not utilize vehicles to dispose of their victims.

Additionally, it is possible that some offenders did not have the economic resources to own a vehicle, as many were known or suspected drug users; were in low-paying, unskilled jobs; were unemployed; or were homeless. Many of the urban areas where the victims were killed and disposed (e.g., abandoned buildings located in high-crime, drug-infested neighborhood/nonstroll areas) were perfect for such activities – someone could be killed, concealed in an abandoned building used by crack cocaine addicts and prostitutes, and no one would know or care. In this sense, the single and serial offenders did not have real necessity to transport their victims' bodies over long distances. They could literally leave them next door.

The prostitute murderers could also easily disappear and blend into this “decrepit urban fabric.” They resembled other males who resided in these areas and who also smoked crack cocaine and engaged in sexual encounters with prostitutes. The offenders' drug use, access to crack cocaine, and psychopathic qualities, such as cunningness, facilitated their meeting victims, who would literally do anything and go anywhere for crack cocaine. In essence, many of these offenders did not really have to find their victims – these desperate women often found them. On repeated occasions, these men knew the women they later killed, having smoked crack and/or having solicited sex from them.

The slightly greater geographic distances found in the serial group could be another indication of a more criminally sophisticated cohort of murderers within the sample. As mentioned earlier, these individuals may have lived further away from their

preferred vice areas, using a vehicle to “cruise” for victims as well as to facilitate body disposal. Assuming that they owned their vehicles, one might surmise that they work during the daytime and solicit victims at night, resembling the FBI’s organized offender typology (Ressler et al., 1988).

How These Findings Relate to the Expected Data Patterns in Study Aim #1 d):

“Crime Scene Variables Form” and “Body Disposal Form” Blocks may evidence the following:

i). Single homicide crime scenes may appear more disorganized than those of the serial homicide victims (e.g., may look unplanned and spontaneous, with the victim’s body left in place; may contain incriminating evidence, such as the weapon or clothing (Ressler et al., 1988); and may possibly exhibit overkill due to crack-cocaine induced psychosis (Geberth, 1996) or the murderer’s familiarity with the victim); and

ii). Conversely, the serial homicide crime scenes may more likely appear organized, or more frequently exhibit planning, than the single homicide crime scenes (e.g., the bodies of serial victims may more likely be moved from the murder site to a distant disposal site by the offender who also removes incriminating evidence from the crime scene, such as the murder weapon and clothing (Ressler et al., 1988)).

These expected data trends were partially supported by the data. Interestingly, the single and serial offenders each seemed to exhibit different facets of “organization” and “disorganization,” resembling the “mixed” offender profile posited by the FBI (Ressler et al., 1988). As posited, these discrepancies could also signify the presence of various subgroups of offenders within the sample, demonstrating different levels of criminal sophistication. The single offenders’ victims had higher numbers of secondary injuries,

including more major trauma to the arms and hands, seemingly indicating defense wounds. Proportionally, the single victim subsample had a greater percentage of cases involving head trauma (involving nearly all victims) than the serial victim subsample.

Further, the single victims sustained significantly greater numbers of stab and cutting wounds than the serial victims, and had a higher percentage of cases involving blunt force trauma wounds as well. The degree and type of injuries on the serial prostitute victims conveys an enraged assault by the perpetrator along with a violent struggle. It is possible that the trauma inflicted on the serial victims reflects an inexperienced offender (e.g., did not anticipate the victim's resistance, was not strong enough to restrain the victim, utilized an effective stabbing weapon, etc.). The finding that the single victims had a higher percentage of cases involving overkill also supports the expected trend that these assaults would be more interpersonal in nature (Geberth, 1996).

These findings suggest that the single offenders appeared to have more disorganized crime scenes in terms of the frequency and degree of trauma inflicted upon their victims, likely attributable, in part, to spontaneous rage stemming from an interpersonal dispute and the personal nature of these assaults. Conversely, because the serial offenders most frequently strangled their victims (a less "messy" method of killing) and more often exhibited precrime planning and fantasy-based behavior than the single offenders, their crime scenes appeared more controlled, or organized at the outset (i.e., during the initial encounter and the subsequent murder of the victim), than those of the single offenders. These findings supported the expected data patterns above.

Next, the single offenders did not engage in sexual activities with their victims at

the crime scene as frequently as the serial offenders, who engaged in vaginal sex, oral sex, and necrophilia significantly more often. In fact, the majority of the single offenders did not engage in sexual activities with the victim. Similarly, the single victims had a larger proportion of cases where semen was not recovered from their bodies as compared with the serial victims. With regard to sexually assaulting the victim, the serial murderers appeared more disorganized, engaging in a host of sex acts and possibly leaving incriminating DNA evidence. Conversely, the single homicides appear to exhibit a greater degree of sexual "organization," namely, control or restraint as well as precautions (i.e., abstaining from sex or using a condom). It is also likely that the absence of sexual activities in the single murders reflects the aforementioned portion of these cases that involved nonsexual motivations (e.g., homicides precipitated by interpersonal arguments).

The majority of the single and serial murderers tampered with crime scene evidence, with no differences found between groups. When it rarely occurred, equal percentages of the offenders disfigured bodies to delay identification. As previously discussed, in light of the similar criminal lifestyles and elevated psychopathy levels of these individuals, it is not surprising that they mutually engaged in acts of self-preservation at the crime scene to avoid apprehension. However, it was expected a priori that only the serial offenders would exhibit this organized behavior.

The single and serial perpetrators also did not differ with respect to whether the murder weapon was recovered at the crime scene, not recovered, or recovered elsewhere, with similar proportions of cases reported in each category. The single offender subsample, as compared to the serial offender subsample, had a greater proportion of

individuals utilizing weapons of choice, excluding hands and/or feet. Conversely, the serial group had a higher percentage of offenders employing weapons of opportunity, excluding hands and/or feet. This indicates that the single perpetrators were armed, or at least had their weapons prepared at the time of the homicide, appearing more organized. This result had not been anticipated.

On the other hand, the serial offenders appeared more disorganized with respect to employing weapons of opportunity at the crime scene, contrary to the expectation that they would utilize weapons of choice. However, as previously explained, the serial murderers were, indeed, organized, utilizing their hands as weapons in the majority of their crimes. It is possible that during the commission of some homicides, the serial offenders were unable to incapacitate their victims manually, spontaneously resorting to other opportunity items at the murder site (e.g., a bludgeon, a kitchen knife left on a countertop, etc). In this case, it appears that they did not plan beyond their initial strangulation assault, indicating a lower level of criminal sophistication.

The single offenders were significantly less likely to move their victims' bodies from the murder site to a different body disposal site. The majority of their victims were left in place. Indeed, the serial killers were significantly more likely to move their victims' bodies in this manner, which is characteristic of an organized offender (Ressler et al., 1988). It is also notable that the serial offenders spent more time with their victims' bodies throughout the body disposal process; took and kept articles of clothing and/or personal items from their victims; and were more likely to return to their disposal sites, consistent with the findings of Ressler et al. (1988).

As explained above, these activities convey that homicides were highly

“meaningful” to the serial offenders in terms of their fantasies, deviant sexual interests, and psychopathic needs (e.g., engaging in postmortem sex, transporting the corpse to the disposal site over a distance, taking souvenirs, returning to the crime scene to masturbate about the homicide, or taking trophies to remind them of their domination of the victim). These offenders also more frequently participated in their victims’ homicide investigations than the single murderers, consistent with the FBI’s prior serial homicide research (Ressler et al., 1988) and supporting the expectation they would engage in this organized behavior.

The single homicide crime scenes looked more “unplanned and spontaneous,” with bodies left in place, endorsing these expected patterns in the data. Specifically, the single homicide victims were frequently met, killed, and recovered in nonvice areas, such as residences, apartments, hotels, or motels, where they were also last seen. These were locations where the victims may have lived and/or worked. Because only 1 single victim worked principally in a hotel/motel, with none working principally in an apartment/residence, it is likely that at least a portion of these homicides were interpersonal in nature.

Conversely, the serial victims were met in established vice or neighborhood/nonstroll areas where they also were last seen; were killed in these vice areas; and then were dumped in different locations. Further, a portion of the serial offenders made particular efforts to conceal or to openly display the bodies of their victims. These activities reflect planning on the part of the serial offenders: searching for victims in vice locations and then dumping them elsewhere, possibly hidden or intentionally positioned to shock the public. These organized behaviors, documented by

the FBI researchers in their serial murderer sample (Ressler et al., 1988), supported the expected trends in the data.

One unexpected finding was that almost all of the perpetrators in the sample were familiar with the encounter, murder, and disposal sites, although serial offenders were significantly more likely to take their victims to a preselected area. As discussed at length above, the homicide offenders solicited and killed prostitutes in proximate areas to where they lived. As such, they were familiar with the various crime scene locations. The findings do suggest that the serial offenders engaged in somewhat more sophisticated planning activities than the single offenders.

However, as argued, in light of the highly vulnerable prostitute victim population the serial offenders did not need to resort to especially clever means to abduct and dispose of their victims. These victims willingly accompanied offenders who offered them crack cocaine in exchange for sex – a common event in their daily lifestyle. In essence, the serial offenders' predatory behavior was shaped by their depressed, inner-city, living environment. However, other serial offenders - such as Ted Bundy, who abducted his victims in public parks and shopping malls - necessarily had to engage in more sophisticated victim approach and abduction techniques (e.g., wearing a cast on his arm and asking for assistance, personifying a police detective, and altering his vehicle to prevent the victim's escape).

The single homicides also appeared more disorganized, as hypothesized, with regard to the disposition of clothing at the crime scene. In particular, the single victims were significantly more likely to be found fully clothed than the serial victims, who were significantly more likely to be found partially undressed or completely nude. These

findings also likely reflected the percentage of homicides in the single group that were nonsexually motivated (where one would not expect sex crime overtones, such as the removal of clothing), and the prevalence of sexual homicides in the serial victim group (where evidence of sexual assault, such as exposure of the victim's breasts or genitals, would be expected). By leaving incriminating evidence (i.e., clothing) at the crime scene, the single offenders behaved in a more disorganized manner, while the serial offenders, by removing some or all of the victims' clothing (i.e., eliminating evidence), acted in a more organized fashion (Ressler et al., 1988).

In summary, although the single and serial homicides often resembled each other, sharing sexual motivations, there were subtle differences in the appearances of their respective crime scenes, including body disposal and related offender behavior. For instance, the single homicides, based on the commonality of the murder and disposal site locations, types and numbers of wounds on the victim, and the disposition of the victim's clothing, appeared to be more spontaneous or disorganized, occurring pursuant to an argument. In these prostitute homicides, clothing was recovered in a proportion of cases although semen evidence was not, reflecting their nonsexual nature. However, the single offenders resembled the serial offenders with respect to removing crime scene evidence generally, which is consistent with their similar, lengthy criminal backgrounds and psychopathic characteristics.

On the other hand, the serial homicides exhibited more evidence of organized planning, control, and fantasy-based behavior by the perpetrators (e.g., taking the victim to a preselected area; occasionally using restraints or engaging in rituals, torture, and mutilation; manually strangling the victim; taking trophies and/or souvenirs; spending

time with the body; returning to the disposal site; and participating in the criminal investigation). However, the serial offenders also exhibited disorganized behavior at the crime scene, leaving semen evidence, which is consistent with their hypersexual and deviant sexual activities. It is surmised that these offenders lost self-control at the crime scene when their sexual arousal and fantasies peaked, engaging in a violent, sexual frenzy and leaving incriminating DNA evidence in the victim, although soon reverting to more planned behavior (e.g., removing clothing and moving the victim to a disposal site). This loss of sexual control typifies compulsive and aggressive sexual offending behavior (e.g., Hall, 1996).

Psychological and Behavioral Profiles of the Prostitute Victims and Murderers:

The following psychological and behavioral profiles of the prostitute victims and homicide offenders are suggested by the study's findings, discussed above, and, as such, are subject to the many limitations of the data set, including the subjective clinical interpretations of this writer. The limitations of the study will be more elaborately articulated in the next section. Caution must be exercised by the NCAVC and other law enforcement agencies with regard to the implementation of these profiles as "absolute truths" in ongoing prostitute homicide investigations, as they clearly do not represent the entire populations of prostitute victims and homicide offenders, respectively.

Single Prostitute Victim Profile:

This victim will likely be an African-American/Black or Caucasian female with an average age of 28 years, although single homicides were also more likely to involve victims of other racial and ethnic backgrounds (e.g., Hispanic, Native-American, etc.).

Her killer will generally be of the same race. However, she is more likely than the serial victims to be murdered by a perpetrator of a different race. Unlike the serial victims, she is less likely to be homeless, although, like them, she will work in a high-crime area and will likely have a history of prior victimization both on- and off-the-job. She will more likely work in a drug-infested, economically depressed, inner city area than an established vice area, but the latter is also possible. The data suggest that she will be 4 times more likely than serial victims to meet customers in apartments, residences, hotels, or motels, with vehicles and isolated areas being other potential sexual encounter locations.

Although principally engaged in prostitution to support a crack cocaine addiction, she will be more likely than the serial victims to be motivated for economic reasons or to support another drug addiction (e.g., heroin). Despite her addiction, she will have available social supports. She will also be more likely to offer sex-for-money rather than sex-for-drugs. Like the serial victims, she will likely work under the influence of substances, and will have postmortem cocaine, cocaine metabolite, and alcohol detected in her blood. However, she is also less likely than the serial victims to work while intoxicated and to have these substances detected in her blood; she is more likely to have lower cocaine and cocaine metabolite levels than serial victims.

This victim will be less likely to engage in risk behaviors than the serial victims, and, conversely, is more likely to work in the company of others, to screen customers for safety; and to utilize fellow prostitutes or a pimp as watchers. In conjunction with the findings above, the data suggest that at least a portion of the single victims resemble more traditional street prostitutes, working in known vice areas. This victim will have a history

of vice, drug possession, and drug paraphernalia possession arrests, but not as lengthy as those of serial victims. Tentative data trends suggest that she may have been prostituting for a shorter, albeit still lengthy, period of time (averaging just over 4 ½ years) than the serial victims, and might more likely be involved in the drug distribution economy. In the latter regard, such activity might place her at higher risk for "systemic violence" related to the drug trade (Sterk & Elifson, 1990).

Although she is most likely to be the victim of a sexual homicide, she is more likely than a serial victim to be murdered in a nonsexual context. The study's findings strongly support an interpersonal component to these homicides, as contrasted with the serial homicides, which were almost exclusively sexually motivated. To begin, this victim is more likely to be previously acquainted with her killer than the serial victims. She is less likely to have been involved in voluntary or involuntary sexual activities with him, and semen evidence is less likely to be recovered from her body. She will most likely die of stab or cutting wounds. Specifically, the data suggest that she is 6 times more likely than a serial victim to die of stab or cutting wounds, and approximately only ¼ as likely as a serial victim to die of manual strangulation.

Further, she will have higher numbers of stab and/or cutting wounds and is more likely to evidence overkill than the serial victims. She is also more likely to exhibit major trauma to the arms, consistent with defense wounds; may more likely evidence major trauma to the head, neck, and facial areas; and may have sustained higher numbers of countable blunt force injuries, such as hammer blows and bone fractures, than the serial victims. All of these findings point to a personalized, brutal attack by the perpetrator and a subsequent violent struggle, consistent with a homicide triggered by an

interpersonal dispute. She is less likely to be depersonalized by the offender, who may not need to distance himself from her as compared with serial offenders, who demonstrated more deficient abilities to form relationships.

This victim's body, like the serial victims, will most likely be recovered in a nonvice location within a residential, urban setting and, to a lesser degree, within a business, industrial, or commercial area. The data suggest that her residence will be located approximately 4 miles from the disposal location, slightly closer than that of the serial victims. She will most likely have been killed in a residential neighborhood setting of an urban area as well. Single victims were more likely to be murdered in a nonvice location than serial victims, and the data further reveal that the majority of single victims in the sample were killed in nontraditional settings where they may have worked or resided, namely, apartments, homes, hotels, and motels. The finding that the single victims were over 2 ½ times as likely as serial victims to be killed with their bodies left in place further suggests a more spontaneous, interpersonal component to these murders.

The results of the study indicate that this victim will have met the perpetrator in an urban setting, principally within a business, commercial, or industrial area and, to a lesser extent, in a residential area. The distance between this encounter site and the body disposal site will be, on the average, 2.3 miles, again, slightly less than that of the serial victims, according to the study's findings. Her murder site will likely be in a different location. This victim, according to the data, will be approximately 6 ½ times more likely than a serial victim to have met her killer in an apartment, residence, hotel, or motel. On the other hand, as compared to the serial prostitute victims, she is only ¾ times as likely to have encountered the killer on a public street; ½ times as likely to have met him in a

stroll area; $\frac{1}{4}$ as likely to have encountered him in a neighborhood/nonstroll area; and, generally, only $\frac{1}{4}$ as likely to have met him in any vice area.

Trends in the data suggest that this victim will be last seen where she encountered the perpetrator. This appears to slightly more likely be within an urban, residential area, although it could also be within business, industrial, or commercial areas within an urban setting. Again, the data suggest that this single victim is 6 times more likely to be last seen in an apartment, residence, hotel, or motel where she may have lived or worked. To a lesser extent, she is $1\frac{1}{2}$ times more likely than a serial victim to be last seen in "other" areas (i.e., school/playground, vacant building, crack house/drug den, open field, vehicle, or other areas). Interestingly, she is less than $\frac{1}{4}$ times as likely as a serial victim to be last seen in any vice area (i.e., known stroll areas and neighborhood/nonstroll areas). Overall, the study's findings indicate that this victim likely met the perpetrator in a home, apartment, motel, or hotel, located in an urban residential or commercial setting, respectively, where she was also last seen. Subsequently, she was killed and her body left in this location. Indeed, according to the study's findings, she is $2\frac{1}{2}$ times more likely to be murdered and left in place than the serial victims.

Because very few single prostitute victims principally met customers in residences, hotels, or motels, it is more likely that these were casual sexual encounters, to include sex-for-crack exchanges in economically-depressed urban areas, or nonsexual encounters occurring among acquaintances in residences. Those few prostitutes in the study who worked out of motels or hotels or who, serving as escorts, met customers in prearranged locations, such as motels or hotels, were most often single victims.

The ways in which the single victims' bodies were disposed in the study were also

more indicative of sporadic episodes of interpersonal violence. This victim will most likely be disposed of in a manner without concern about discovery. This would include her body being left where it fell at the murder site or being "dumped like trash" elsewhere by the offender. Her body is also less likely than the serial victims to be either concealed by offender or displayed openly in a manner to ensure discovery or to shock the public. The data suggests that she is almost 2 ½ times more likely to be found fully clothed than a serial victim. It is unlikely that her body will be found disfigured via dismemberment, burning, or other means. Conversely, she is less likely than the serial victims to have been tortured, mutilated, dismembered, disemboweled, or assaulted in other ways (e.g., run over with vehicle; wounds explored, probed, mutilated, etc.). She is also less likely to have been subjected to rituals (e.g., washing and redressing) by the offender. The lack of sexual (e.g., body found clothed and the absence of ante- or postmortem sexual assault) and fantasy-based (e.g., absence of restraints, torture, or mutilation) activities at the crime scene, as well as the victim's body disposal method, seemingly convey that the homicide and the victim's body had little meaning to the offender.

Serial Prostitute Victim Profile:

The study data suggests that this victim will most likely be an African-American/Black or, more infrequently, Caucasian female, averaging 30 years of age. Victims of other races were not prevalent in the sample of serial victims. Her killer will more likely be of the same race. Although she may be acquainted with him, she is nearly equally as likely to be killed by a stranger, unlike the single victims. She will more likely be homeless than the single victims. Like the single victims, she will work in a high-crime area; will likely have a history of prior victimization; and will have existing social

supports. Although most serial victims worked in known prostitution stroll areas, a sizeable proportion lived and worked within nonstroll/neighborhood areas, namely, economically-depressed, drug-infested urban areas.

The serial victims in the sample were overwhelmingly involved in prostitution to support a crack cocaine addiction, and were 3 times as likely than single victims to offer customers sex-for-drugs. They exhibited a more chronic pattern of cocaine abuse over time than the single victims, embodying the derogatory "crack whore" description from the literature (e.g., Ratner, 1993a). These women more frequently engaged in risk behaviors, to include servicing any customer without screening them for safety; failing to use security measures while working; and working alone. In the latter regard, the data suggests that this victim will be over 4 times more likely than single victims to work alone. Additionally, she will be over 3 times more likely to meet customers in isolated areas (e.g., abandoned buildings, alleys, etc.) and 1 ½ times more likely to meet customers in vehicles than the single victims, with other encounters occurring, to a lesser extent, elsewhere (e.g., apartment/residence, crack house/drug den, hotel/motel, and other locations).

This victim will be more likely than a single victim to work while intoxicated on crack cocaine. The data suggest that this victim will be 3 times more likely than a single victim to have cocaine detected in her postmortem blood. She will also be more likely to have cocaine metabolite and/or alcohol in her blood at the time of death. The study findings suggest that her levels of cocaine and cocaine metabolite intoxication at the time of death will exceed those of single prostitute homicide victims. Tentative data trends suggest that she may also evidence poor personal hygiene consistent with her chronic

drug use. Additionally, she will likely have been prostituting for a longer period of time (averaging just over 7 ½ years) than the single victims, reflected also in her lengthier history of vice, drug possession, and drug paraphernalia possession arrests.

The study's findings suggest that the serial victims were more likely to engage in known risk behaviors (e.g., working while intoxicated, working alone, servicing customers in isolated areas) as a means of obtaining crack cocaine. As mentioned elsewhere, their desperation in this regard made them easy victims for serial offenders, whom they agreed to have sex with in isolated areas in exchange for crack cocaine.

The majority of the serial victims were strangled, suggesting a more controlling, sadistic homicide offender. Specifically, the serial victims in the study were 4 times more likely to have died of manual strangulation than the single victims, and evidenced the greatest proportion of victims who died of ligature strangulation. It follows that these victims sustained major trauma to the head and neck area. They were also 4 ½ times more likely to have been killed by "other" methods (e.g., asphyxiation, suffocation, and other means) or to have an "undetermined" death (i.e., medical examiner could not determine the cause of death) than the single victims. The serial victims did have a slightly higher percentage of victims who died of gunshot as well as blunt force trauma wounds than the single victims, although these small differences precluded interpretation.

Unlike the single homicides, the serial homicides were almost exclusively sexually motivated. In this regard, the serial victims in the study were 2 ½ times more likely to be found partially undressed or nude at the crime scene than the single victims. The serial victims in the study, either voluntarily or through coercion, more likely engaged in vaginal and/or anal sex with the perpetrator than single victims. The serial

killers also were more likely to engage in postmortem sex with their victims. Semen evidence will more likely be recovered from this victim's vagina, anus, or mouth than from a single victim. It is posited that the serial offender in this case loses sexual control, engaging in almost frenzy-like behavior with the victim.

Although infrequently encountered, the crime scene of this serial victim, unlike those of the single victims, may evidence more idiosyncratic behaviors and sexually sadistic fantasies by the perpetrator. For instance, she may more likely be restrained, tortured, mutilated, and assaulted in other bizarre ways (e.g., wounds explored, probed, or mutilated; run over with a vehicle, etc.). Her body may more likely be the subject of rituals (e.g., washing and/or redressing), or it may be dismembered or disemboweled. However, this serial victim, like the single victims, will generally not be disfigured (e.g., dismembered, burned, etc.) by the serial offender.

Like the single victims, this serial victim's body will most likely be recovered in a nonvice location within a residential, urban setting and, to a lesser degree, within a business, industrial, or commercial area. According to the study data, her residence will be approximately 5 miles from the disposal site, slightly further away (difference of about 1 mile) than those of the single victims. Her body will most likely be recovered in "other" areas as coded in the study (e.g., next to roads or highways, in construction areas, under bridges, in ravines or riverbeds, in parking lots, in parks or overgrown areas, in dumpsters or other containers, or in warehouses). Again, resembling the single victims' cases, she will most likely have been killed in an urban residential neighborhood setting. Conversely, she will more likely have been killed in a vice location (i.e., established vice area or a neighborhood/nonstroll area) than the single victims. Her body will likely be

disposed of in a different location, and will be less than ½ times as likely as a single victim to have the same murder and body disposal sites, according to the study's findings.

This victim, like the single victims, will meet the homicide offender principally in an urban business, commercial, or industrial area and, to a lesser extent, within a residential area. However, the data suggests that she will be 4 ½ times more likely to meet the offender in a nonstroll/neighborhood area; 2 ½ times more likely to meet him in an established vice area; slightly less than 1 ¼ times more likely to meet him on a public street; and, overall, approximately 4 ½ times more likely to meet him in any vice area than the single victims. The distance between this victim's encounter site with the serial murderer and the body disposal site will be, on the average, 4.2 miles – a slightly greater distance (difference of about 1.9 miles) than that found for the single victims.

The data trends suggest that this serial victim's last known location and her initial encounter site with the perpetrator will be different sites. She will most likely be last seen in business, industrial, or commercial areas within an urban setting or, to a slightly lesser degree, an urban residential area. The study's results suggest that this serial victim will be over 3 times as likely to be last seen in an established stroll area; about 4 1/3 times as likely to be last seen in a neighborhood/nonstroll area; 1 1/3 times as likely to be last seen on a public street; and 4 ½ times as likely to be last seen in any vice area as the single victims. These findings clearly suggest that the serial victims, unlike the single victims, were often prostituting in either known vice areas or in neighborhood/nonstroll areas at the time of death, making it more likely that the serial murderers initially approached them for sexual services.

Single Prostitute Homicide Offender Profile:

This homicide offender will most likely be either African-American/Black or Caucasian, averaging about 32 ½ years in age. Although most homicides will be intraracial in nature, the single homicides are more likely to have perpetrators and victims of different racial backgrounds than serial homicides. The data from the study suggest that this perpetrator will likely be single and living with other people; he might, to a lesser extent, be single and living alone or be married or have a common law wife. He is more likely to be unemployed than a serial offender and, if employed, will likely have an unskilled job (e.g., laborer, janitor, taxi driver, trash collector).

This offender is less likely to be homeless than the serial offenders. He will reside in the area where he committed his homicide, namely, proximate to established vice areas or neighborhood/nonstroll areas. In this regard, the data reveal that he will live, on the average, 2 ½ miles from the initial contact site with the victim and 3 ¼ miles from her body disposal site. Residing within the area, he will be familiar with the encounter, murder, and body disposal sites. He is a frequent visitor to the vice areas proximate to where he lives, equally likely to use a vehicle or to approach on foot. These approaches may reflect the different "cultures" of the established vice, or "stroll" areas (frequented by customers in vehicles) and nonstroll/ neighborhood areas (frequented by local residents on foot), respectively. Prostitutes and others in the neighborhood will know him.

The data trends suggest that this offender will not drive a newer-appearing vehicle, but will, instead, drive a poorly-maintained vehicle. Further, unlike the serial offenders, he is less likely to "cruise" (i.e., stalking victims, engaging in victim selection) for prostitute victims in his vehicle. Although he is more likely to be acquainted with his

prostitute victim than to be a stranger assailant, he is not her regular customer. Instead, he prefers to solicit other prostitutes in his vice area of choice. Despite this tendency, it is unlikely that he has any history of vice arrests.

The single and serial offenders resemble each other in terms of their criminal backgrounds and lifestyles "on the fringes" of society. Superficially, both offender types share characteristics with a general prison population, having lengthy criminal records. Not surprisingly, both are likely to tamper with crime scene evidence after the homicide to avoid reincarceration. Like the serial offenders, this offender will have a lengthy history of nonsex offense arrests (i.e., all crimes notwithstanding sexual offenses), violent offense arrests, and property crime arrests (e.g., theft, burglary, breaking-and-entering, etc.). He is likely a known or suspected substance abuser, and tentative data trends suggest that he may be involved in the local drug economy. Interestingly, he will have few drug possession and drug paraphernalia possession arrests.

The study's findings indicate that this offender, like the serial murderers, will be psychopathic, leading an unstable, socially deviant, and antisocial lifestyle (Hare, 1991b). This is consistent with his spotty employment record; his engaging in impulsive, risky activities, such as drug use and soliciting prostitutes; and his lengthy criminal record. This offender may lead a parasitic lifestyle, "using" others around him for his own personal gain, as is common in the crack cocaine subculture. If unemployed, he may rely on friends or family members for financial support, and he will likely show little ambition or interest in obtaining steady work. He will likely be unreliable, making promises to pay back monetary or drug debts, but rarely delivering on them (Hare, 1991b). Nonetheless, his socially deviant lifestyle has helped him to "survive" and,

equally, to "blend into" his violent surroundings.

The study's results indicate that this offender will also exhibit an impaired interpersonal style, characterized by the manipulation of others, self-centeredness, and difficulty establishing meaningful relationships (Hare, 1991b). His interpersonal problems are best illustrated through his history of violent offenses and conflicts with women, including the victim. Interestingly, however, the data reveal that he will be less interpersonally impaired than the serial offenders, although his lack of criminal sophistication may be problematic for him in some situations. In this regard, he may not be as skilled in manipulating people, especially others within his drug subculture, to his advantage. For instance, he may not be as capable of "sweet talking" a prostitute into forgoing the use of a condom during negotiation or to performing additional sexual acts not agreed upon. This could lead to a violent interpersonal encounter. As shall be described later, he may not be as skilled in planning his crimes as the serial offenders, possibly attributable to this lack of criminal sophistication. This seems supported by the finding that he is more likely to be suffering from legal-related stress in his life. It is possible that the serial offenders' superior abilities to con and manipulate others may have allowed them to avoid arrest.

On the other hand, it is possible that he may be slightly more likely to establish relationships with others than the serial murderers. As mentioned, he is more likely to be living with other people. Hypothetically, unlike the serial offenders, he may more likely be soliciting prostitutes due to relationship problems (e.g., difficulties with intimacy, partner will not perform certain sexual acts, etc.) (de Graaf et al., 1996). The data reveal that he will likely have fewer prior addresses and jobs than the serial offenders, and is

slightly less likely to have a poor work history. These indicators are consistent with the study's findings, namely, that he can manage interpersonal situations, such as work, slightly better than serial offenders, and that his lifestyle may not be as chaotic, reflected by his lack of address changes.

As previously mentioned, the single homicides, unlike the serial homicides, appeared triggered, in part, by nonsexual, interpersonal disputes. This is supported by the finding that although most single homicides involved sexual motivations, they were 6 times more likely than the serial homicides to involve nonsexual motivations. This offender will more likely have had a conflict with the victim or with another woman prior to the homicide than the serial offenders. His problems with women further support this interpersonal component. The data patterns further suggest that the mutual use of alcohol and cocaine at the time of the offense will exacerbate these perpetrator-victim arguments.

In particular, this offender is more likely to be ingesting alcohol and/or possibly cocaine at the time of the homicide, and will more likely be under the influence of these drugs at this time than the serial offenders. According to the study's findings, he is 20 times more likely than a serial offender to have a history of alcohol abuse, and will also likely have a comorbid drug abuse history. He is also more likely to have a history of alcohol-related arrests, further reflecting his struggle with alcohol abuse. It is interesting that the single offenders in the study solely incurred alcohol-related criminal charges. Moreover, the single homicides will more likely be triggered by the behavioral side effects of cocaine and/or alcohol (e.g., paranoia, hostility, aggression, etc.) on the perpetrator, with trends suggesting that behavioral drug side effects on the victim as well as physiological side effects on both parties (e.g., erectile dysfunction, decreased sexual

interest, etc.) may also serve as precipitants. Victim resistance will further escalate this perpetrator during the assault, especially considering his violent tendencies.

As previously discussed, this offender's crimes appear more spontaneous and less sophisticated, leaving incriminating evidence and demonstrating less planning. As such, his homicidal attack appears more disorganized, as described by the FBI (Ressler et al., 1988). In this regard, he is less likely to bring the victim to a preselected area than the serial offenders. The data suggest that he will be over 2 ½ times as likely as a serial offender to use a stabbing or cutting weapon in the homicide, although he will only be about ¼ as likely as a serial offender to manually strangle his victim. The data patterns also suggest that he will be less likely to use a ligature or a bludgeon as a murder weapon than the serial murderers. Instead, he utilizes a knife as a homicide weapon of choice, suggesting that he carries it as a personal weapon. There is an equal likelihood that he will either discard this weapon or leave it at the crime scene or elsewhere to be recovered by the police. Furthermore, after the crime he is less than ½ as likely as the serial offenders to move the victim's body from the murder site to a different disposal site. He will also be less likely to change addresses to avoid police detection than the serial offenders.

This offender differs markedly from the serial offenders in that he is less sexually aggressive, compulsive, and preoccupied. His sexual behavior in this regard appears more organized, using the FBI's typology (Ressler et al., 1988). He is less likely to have a prior sex offending history and indicators of sexual recidivism. Specifically, the study data suggest that he will have fewer adult and child sex offenses, fewer sex offense victims; fewer different types of sex offenses committed; will be less likely to have

stranger, male child, and both adult and child sex offense victims; and will be less likely to have a juvenile sex offense history. He will also have fewer deviant sexual interests, including pedophilia (sexual interest in children) and necrophilia (sexual interest in dead bodies), than the serial offenders.

Furthermore, he is less likely than the serial murderers to demonstrate sexually sadistic fantasies through verbal contacts with others, in his writings, in a police confession, or through other means. In the latter regard, the data patterns suggest that he will be less likely than the serial killers to have engaged in sexually sadistic acts against prostitutes or others; to have a pornography collection; to take trophies and/or souvenirs from the victim; and to possess or use weapons, police paraphernalia, bondage materials, or torture kits. This offender will also be less likely to engage in criminal acts that are suggestive of underlying fantasies (e.g., sexual offenses, fetish burglaries, etc), and to make kinky sex requests from prostitutes (e.g., anal sex, paraphilic activities) than serial offenders. He is also more likely than serial offenders not to engage in acting-out behavior against prostitutes that would identify him as a violent and abusive customer.

Prior to committing the homicide, he is less likely to be aroused (i.e., "excited," "turned on") than the serial offenders. Although he is most likely to approach the victim for sexual services, the data suggests that, unlike the serial murderers, the single offender may not approach the victim for sex, suggesting a nonsexual motive. Additionally, this offender will most likely abstain from any sexual activity with the victim, leaving little semen evidence. This, again, may be indicative of a nonsexual interaction with the victim or, possibly, an argument erupting around the actual sexual act itself (i.e., before disrobing or after redressing). The single offender's behavior at the crime scene and

thereafter further reflects his overall lack of sexual involvement with the homicide as compared with the serial offenders.

Specifically, he will be less likely to engage in idiosyncratic, fantasy-based behaviors at the crime scene that ascribe special meaning to the homicide and to the victim's body. In this regard, the data reveals that he will be less than 1/8 as likely as a serial offender to spend time with the victim's body during the disposal process.

Similarly, he is only 1/25 as likely as a serial offender to return to the disposal site and less than 1/3 as likely to participate in the case either indirectly (e.g., discussing the case with friends, following the investigation in the press, etc.) and/or directly (e.g., taunting the police, frequenting police establishments, etc.). These figures strongly suggest that after killing his victim, this offender will flee the crime scene, not to return. Unlike the serial offenders, he is less likely to take clothing or personal items from the victim that would serve as reminders of her.

The data trends further suggest that he will be less likely to use restraints; to engage in acts of torture or mutilation; to perform rituals at the crime scene (e.g., making rock formations; talking to the victim's body, etc.); and to perform rituals with the victim's body (e.g., washing the victim, redressing her, etc.). He is not likely to disfigure the victim through burning, dismemberment, or disembowelment. His victims are also less likely to be depersonalized than serial victims.

Serial Prostitute Homicide Offender Profile:

This offender will likely be either an African-American or Caucasian male, averaging approximately 35 years of age. The majority of his homicides will be

intraracial in nature. Unlike the single offenders, he will victimize strangers and acquaintances in equal proportions. This offender will more likely be single and living alone, but, to a lesser extent, may be single and living with others or otherwise may be married or have a common law wife. Like the single offenders, he is likely to reside in the area of his homicides, and will be familiar with the encounter, murder, and body disposal locations. The study data suggest that he will reside slightly over 4 ½ miles from the initial encounter and body disposal sites, respectively. As such, he lives slightly further away (differences of approximately 2 miles and 1 ½ miles from the encounter and disposal sites, respectively) from these locations than the single offenders.

He is likely to have either a skilled (e.g., electrician, plumber) or an unskilled job, although he is more likely to be homeless than the single offenders. On the other hand, like the single offenders, he is unlikely to be involved in pimping or other criminal activities exclusively. This offender, like the single offenders, will frequent either an established vice area or a neighborhood/nonstroll area proximate to his residence and will most likely have no vice arrest history. Similarly, he is not likely to be a regular customer of his victims, instead, preferring to solicit a number of prostitutes in the area. Tentative data trends suggest that this offender may be more likely than the single offenders to frequent crack houses or drug dens for sex, suggesting that he is a part of the drug subculture within neighborhood/nonstroll areas, should homicides be occurring there.

He is equally likely to approach the victim in a vehicle or on foot. Again, these approaches appear to represent those typically encountered in established vice areas and neighborhood/nonstroll areas, respectively. Although more likely than single offenders

to "cruise" for victims in a vehicle, this offender is equally likely to engage or not to engage in this victim selection, or stalking, behavior. If using a vehicle, the data trends suggest that he will not drive a newer-looking vehicle; rather, it will appear nondescript. Although there are many possible reasons for this finding, driving such a vehicle would help him search for victims discreetly. Witnesses might also have a more difficult time recalling his "average-looking" vehicle as compared with a new or poorly maintained one. Nonetheless, by possessing a vehicle and "cruising" for victims, he appears to have access to economic resources and likely daytime employment, allowing him to hunt for victims in vice areas at night. In this regard he also appears to be more criminally sophisticated, while also being more easily able to dispose of his victims.

Indeed, as mentioned previously, this offender resembles the single offenders with respect to his psychopathic lifestyle; however, as shall be illustrated, he evidences an overall greater degree of disturbance, notably within his interpersonal interactions. Resembling the single offenders, he is likely a known or suspected substance abuser with a substance abuse history (other than alcohol) and will have few drug and/or drug paraphernalia possession arrests. However, the study data suggest that this offender is less likely than the single perpetrators to have an alcohol abuse history, alcohol-related charges, and drug distribution arrests. This serial offender will likely have a lengthy history of nonsexual offenses, violent offenses, and property offenses.

As described in the single offender profile, this perpetrator will also live a parasitic existence (Hare, 1991b). If living in depressed, urban areas, possibly as a homeless person, this individual will likely be a known member of the local crack cocaine and prostitution subculture, conning people for money, drugs, and sex. In light

of his periods of incarceration and possible homelessness, he will likely be "street smart" and able to operate relatively anonymously within his surroundings. If frequenting established vice areas, he will be known in this vice community as well.

Unlike the single offenders, this perpetrator, as demonstrated through his multiple homicides, evidences a more blatant disregard for the welfare of others and is more interpersonally saavy than the single offenders (Hare, 1991b). Other individuals, including prostitutes, may describe him as a "smooth talker"; a compulsive liar; a braggart; or a manipulative individual (Hare, 1991b). Relationships have little value to this offender beyond his own gratification. He is unable to form meaningful relationships with others, and may seek out prostitutes not only to satisfy himself sexually, but because the interaction is devoid of intimacy (de Graaf et al., 1996). He shows little remorse for his crimes and has little empathy for his victims. This offender will likely be emotionally shallow. His idea of "love" might involve engaging in sex acts with prostitutes (Hare, 1991b).

As hypothesized previously, this offender's manipulative quality may aid him in bypassing screenings by more safety-conscious victims. It is possible that his demeanor at the time of the interaction makes him "appear safe." This would appear to be especially relevant to those offenders "cruising" for street prostitutes in stroll areas, as these women tend to screen customers in vehicles (e.g., Barnard, 1993; de Graaf et al., 1995; French, 1993; Miller & Schwartz, 1995). Further, some serial killers in the sample took advantage of their victims' craving for crack cocaine, promising them the drug in exchange for sex and subsequently killing them. Notwithstanding his commission of multiple homicides, sexual promiscuity, and substance abuse, this offender may also be

more likely to engage in other risky activities, such as discussing or boasting about his fantasies or the investigation, participating in the investigation, or observing the discovery of his victims' bodies.

His transient, unstable lifestyle is characterized by his having a greater number of prior addresses and jobs than the single perpetrators. Data trends suggest that he will more likely have a poorer work history than the single offenders. Although more likely to remain at his current address after committing a homicide, this offender does have a greater likelihood of changing addresses to avoid apprehension than the single offenders. In this regard, he may feel that he can "beat the police" and, therefore, remains in place.

Although not generally suffering from the effects of life stressors, this offender will likely have a higher number of them than the single offenders. The data suggest that he will be 5 times more likely than the single offenders to have parental conflict in his life. Additionally, he may more likely be afflicted by marital or partner conflict, financial stress, and "other" forms of stress (e.g., stress stemming from mental illness, sexual dysfunction, anger or blame directed toward the victim, feelings of self-pity and mistreatment pursuant to abuse, jealousy, etc.). Many of these stressors reflect this offender's poor interpersonal skills, and it is, indeed, likely that his emotional shallowness, self-absorption, and lack of remorse (Hare, 1991b) preclude the negative feelings associated with these stressors from overly troubling him. Despite their presence, it was difficult to ascertain from the serial offender sample whether or not these stressors actually triggered their homicides. As mentioned above, the data trends suggest that this offender will be less likely to be suffering from legal stress. This may possibly be attributable, in part, to his more deviant interpersonal style and skillful manipulation

of others (Hare, 1991b), which may decrease his likelihood of rearrest.

This offender differs from the single murderers significantly in the areas of sexual aggression, deviant interests, and fantasies. His history of sexual offending is remarkable in that it satisfies many of the documented research criteria found to be predictive of future sexually aggressive acts (Hanson & Bussiere, 1996; 1998). Specifically, this offender will more likely have greater numbers of prior adult and child sexual offenses; sex offense victims; and different types of sex offenses than single offenders. He will also more likely have stranger as well as adult and child sex offense victims as compared with single offenders. Tentative study data suggest that this offender may be more likely than single murderers to have male child victims and a juvenile sex offense history.

This murderer will have a higher number of paraphilic interests than the single homicide offenders. In this regard, the data reveal that he is 5 times more likely to have pedophilic interests and 14 times more likely to have necrophilic interests than single offenders. He is also likely to have committed a lengthy history of property crimes (e.g., burglary, theft, breaking-and-entering, etc.). The serial offender sample in the study had twice as many of these offenses as the single offenders. These offenses should be scrutinized for any paraphilic (e.g., fetish burglaries) and underlying fantasy involvement (e.g., theft of pornography), as they may reflect acting-out behavior in this regard, possibly as a precursor to sexual homicide (MacCulloch et al., 1983; Schlesinger & Revitch, 1999). Indeed, the serial offenders in the study were overwhelmingly more likely than the single offenders to engage in criminal acts suggestive of underlying fantasies (e.g., adult and child sex offenses, arrests for "peeping," stealing pornography, etc).

This offender will be more likely than the single offenders to engage in violent acts against prostitutes, resulting in his being remembered as an abusive customer.

Consistent with his deviant interests, he is more likely to make kinky sex requests (e.g., anal sex, requests for victim to "play dead" during intercourse, etc.) from prostitutes than single offenders. Because such behavior lies outside their normal repertoire of sexual activities (Green et al., 1993), investigators should also ask prostitutes about such activities during canvasses of vice areas.

Unlike the single offenders, the serial offenders in the study sample were sexually preoccupied before the homicide, and they were more likely to exhibit deviant behaviors at the crime scene. Prior to the homicide, the data suggests that this perpetrator will be 5 times more likely than the single perpetrators to be aroused (e.g., "excited" or "turned on"). Similarly, he is 7 times more likely to solicit his victims for sex prior to murdering them than the single offenders, while his crimes are 6 times more likely to demonstrate sexual motives.

At the crime scene, this serial offender will be more likely to engage in oral, vaginal, and/or anal sex with the victim and to leave semen evidence, unlike the single perpetrators. Specifically, the data suggests that this offender will be 2 ½ times more likely to engage in vaginal sex and over 4 times more likely to engage in anal with the victim, either voluntarily or through coercion. Further, he will be over 7 ½ times more likely than the single offenders to engage in postmortem sexual activities – a finding consistent with his necrophilic interests. The prevalence of necrophilia in the serial offender sample may also reflect their desire to have "total control" over their deceased victims (Rosman & Resnick, 1989, as cited in Milner & Dopke, 1997, p. 407). It is

posited that this offender's behavior becomes more disorganized, as described by the FBI (Ressler et al., 1988), during his sexual encounters with the victim. In essence, his hypersexual activity, lack of sexual precautions, and postmortem sex suggests a frenzied, sexual assault.

The study's data suggest that this offender will be 9 times more likely to evidence sexually sadistic fantasies through verbal admissions to others, writings, police confessions, and other means than single offenders. In the latter regard, the data trends suggest that he will be more likely than the single offenders to possess trophies and/or souvenirs from the victim; to possess and/or use pornography, weapons, torture kits, bondage materials, and police paraphernalia; and to engage in sexually sadistic acts with prostitutes or others. However, because these fantasy indicators were infrequently encountered in the overall sample of offenders, it is likely that there exists a sadistic serial killer cohort within the serial group. Nonetheless, when encountered by investigators, these behaviors and tangible indicators of an active fantasy life are more characteristic of a serial homicide offender.

Similarly, although infrequently encountered, a cohort comprised of sadistic and, possibly, psychotic serial offenders will be more likely to engage in idiosyncratic behaviors at the crime scene than the single offenders. These behaviors include using restraints, torturing the victim, mutilating, dismembering, and/or disemboweling the victim's body, and attacking the corpse in unusual ways (e.g., running body over with a vehicle or exploring, probing, or mutilating wounds). Like the single offenders, this offender will not generally disfigure his victim's bodies (e.g., dismembering or burning them). Data patterns suggest that he will slightly more frequently engage in the

depersonalization of his victims than the single offenders. Given this offender's more pathological inability to form meaningful relationships, this behavior might reflect a tangible attempt (e.g., by flipping the victim onto her stomach, covering or mutilating her face, etc.) at "separating" or "distancing" himself from his victims, with whom he is uncomfortable.

This offender will more likely exhibit organized behavior (i.e., elements of planning and control), consistent with the FBI's serial murderer typology (Ressler et al., 1988) prior to and during the commission of the homicide. The data suggests that this offender will be 3 times more likely to bring his victim to a preselected area. Some homeless serial offenders, who resided in drug-infested neighborhood/nonstroll areas, brought their victims into abandoned buildings and other isolated locations familiar to them. Another serial offender picked up prostitute victims in his vehicle, and then brought them back to his home to engage in sexual encounters. This offender will be 2 ½ times more likely than the single offenders to strangle his victims manually. This homicide method offers him personal control over his victims (e.g., sadistically choking his victims in-and-out of consciousness). Data trends suggest that this offender will also be more likely to kill his victims with a ligature or with a blunt object.

Like the single homicides, the study's tentative data trends suggest that at least some of the serial homicides also involved a dispute between the perpetrator and victim. However, the roles of illicit drugs and/or alcohol appear somewhat diminished as compared with the single murders. Overall, the data patterns suggest that this perpetrator may be slightly less likely to be ingesting drugs and/or alcohol with the victim at the time of the homicide than the single offenders, although there are indications that he may be

more likely to be ingesting cocaine with the victim. On the other hand, he will be less likely to be ingesting alcohol at the time of the homicide. This homicide will be less likely to be triggered by drug and/or alcohol side effects on the perpetrator as well as, tentatively, on the victim, according to data patterns. Like the single murderers, this offender will escalate his violent response with victim resistance.

That the serial offenders may have been ingesting cocaine with their victims is consistent with their soliciting vulnerable, crack cocaine-addicted females to engage in sex-for-crack exchanges in economically depressed areas. Anecdotally, it was observed that these encounters involved the ingestion of cocaine by the victim and/or perpetrator. The apparent diminished role of alcohol in the serial homicides – and its increased role in the single homicides – suggests that these crimes were not interpersonal disputes exacerbated by the use of this substance. It is argued that although some serial homicides will stem from possible substance-induced victim-perpetrator arguments, the compulsive, sexually deviant motivations of these offenders, as represented by their histories of sexual aggression, serve as a more probable explanation.

Because these individuals are sexual psychopaths, it is highly likely that they will lie about (Hare, 1991b), deny, distort, or minimize (e.g., Hall, 1996; Nezu et al., 1998) their sexual involvement in these crimes (e.g., blaming the homicide on the victim, who “freaked out” while ingesting crack cocaine). By denying their crimes in this manner, these murderers will resemble the single murderers, who are more exclusively violent, rather than sexual, offenders. Investigators should be cognizant of this fact when interrogating suspected serial prostitute homicide suspects.

The study's data suggest that this offender may utilize weapons of opportunity

more often than the single offenders, who tended to use weapons of choice. This could account for the serial offenders' use of blunt force weapons (i.e., as secondary weapons used to incapacitate victims during violent struggles) in the study. Additionally, the data patterns show that there is an equal likelihood that the perpetrator's weapon will be recovered at the crime scene, will be recovered elsewhere, or will not be recovered by the police. The use of opportunity weapons and the recovery of incriminating evidence are consistent with disorganized behavior, reflecting a lack of planning (Ressler et al., 1988). It is possible that those offenders who failed in their initial attempts at strangulation may have resorted to other weapons nearby. The serial offenders' behavior in these situations more closely resembles the "mixed" offender typology (i.e., exhibiting both organized and disorganized characteristics) proposed by the FBI (Ressler et al., 1988).

However, as previously discussed, the serial offenders in the study did not need to resort to sophisticated means of planning to commit their murders. Their crack cocaine-addicted victims were highly vulnerable, and frequently neglected their personal safety during prostitution activities. Within drug-infested neighborhood areas, prostitutes regularly engage in sex-for-crack exchanges with males in isolated areas, such as abandoned buildings. In the words of one female addict, these women would go anywhere and do anything to "chase the rock." These serial offenders did not have to transport their victim's bodies to distant locations – they could easily be concealed or left in place in the vacant buildings, commonly used by drug addicts and prostitutes, where they were killed. In light of the many homeless and marginally employed offenders in the sample, it is also possible that they did not have the economic resources to own a vehicle. It is unlikely that persons in these neighborhood areas would initially take notice

of the victims' disappearances, either. In the crack cocaine subculture, addicts frequently go missing and may binge for periods as long as a week (Feldman et al., 1993; Ouellet et al., 1993). Further, being members of this subculture, these offenders could easily remain anonymous among the other males in the area who used crack and solicited prostitutes.

Because a proportion of the serial offenders in the study had skilled jobs; were married or living with others; and/or possessed vehicles, it seems reasonable to posit that these individuals were able to perform their job duties and to interact with others at least reasonably during the daytime, largely falling victim to their fantasies and sexually deviant compulsions at night. In this sense, these offenders might resemble the notorious serial killer Ted Bundy, who attended law school and who worked on a political campaign while murdering his victims. Again, it is likely that their manipulative interpersonal skills facilitated their successfully picking up "street-saavy" prostitutes, who would be more likely to screen them carefully (Inciardi, 1993), from established vice areas.

Overall, the serial offender in this profile, like the single offenders, will be more likely to tamper with crime scene evidence to avoid reincarceration. This is not surprising in light of his "career criminal" history and his self-serving psychopathic personality characteristics, including a lack of remorse, a failure to accept responsibility for his actions, and irresponsibility (Hare, 1991b). Additionally, the study's data indicate that he will be 2 ½ times more likely than the single offenders to move the victim's body from the murder site to a disposal site. These behaviors are consistent with the FBI's organized typology (Ressler et al., 1988).

This offender will most likely dispose of his victims' bodies without concern

about their discovery. They will be found "dumped like trash" in a variety of locations. In the study these included being left in open areas, such as vacant lots, parking lots, or open fields; on or near roads or highways; in ditches; behind buildings, at construction sites; in parks or densely wooded areas; near or in waterways; in a bathtub or submerged in water in a basement; or in an apartment or garage. This offender will also be more likely than the single offenders to conceal (e.g., to cover, wrap, bury, place in a container, or place in water) or to intentionally display (i.e., to ensure discovery and, possibly, to shock the public) his victims' bodies, although this behavior is infrequent. Nonetheless, it appears to be characteristic, again, of a subset of serial offenders.

This offender's postcrime behavior may not only reflect his sexual motivations and deviance, but also the meaningfulness he attaches the victim's body, her homicide, and/or his conquest of her. The study's data reveal that he will be more likely to spend time with the victim's body prior to moving it to the disposal site, and will be 8 times more likely than the single offenders to spend time with the body during the disposal process. Strikingly, this offender will be 27 times more likely to return to the disposal site after the homicide (e.g., to fantasize about the homicide, to engage in postmortem sex with the corpse, to dispose of another victim, etc.) than the single offenders, according to the study's findings.

As previously discussed, the offender's behaviors may indicate that he finds the disposal process to be sexually stimulating and behaviorally reinforcing (Ressler et al., 1985c, 1988), possibly even more arousing to him than the actual homicide (C. M. Nezu, personal communication, February 12, 1998). These behaviors are also consistent with his necrophilic interests. The study's results also suggest that the offender will be 2 ½

times as likely to have taken clothing or personal items from the victim's body. These may be trophies, reminding him of his conquest of the victim, or souvenirs, fostering his fantasies about her (Ressler et al., 1988). The study's data reveals that this offender will be approximately 3 ¼ times more likely than the single offenders to participate in the investigation, again, reflecting his overall involvement in the case.

Limitations of the Study:

The Sample:

The overall low sample size of this study ($N = 123$) was a principal limitation, resulting in low power, or ability to detect differences when they actually existed, and corresponding Type II error. As mentioned previously, the decision to not utilize a statistical correction procedure (e.g., Bonferroni correction) to minimize error due to multiple comparisons may have contributed to spurious significant findings (i.e., increased Type I error). The small number of subjects also precluded further examination of the data, utilizing multivariate models. Because the items on the PHQ (Dudek & Nezu, 2000) were coded directly from the reviewed homicide case file materials, the measure was limited by the quality of the file contents, which varied considerably among the submitting law enforcement agencies. Sadly, the files were most often deficient with respect to victim information – the principal population of interest in this study – and resulted in much data being coded as missing. In this regard, the investigative difficulties involved in gathering background information on these “fringe” victims must be acknowledged. Additionally, the dearth of file materials on the prostitute victims and the plethora of reports on the perpetrators likely reflected law enforcement's mission to

apprehend these murderers and to "close the cases." More disturbingly, however, this trend observed across cases may lend support to Hatty's (1989) criticisms that these were lower priority investigations with fewer dedicated resources.

Next, some items on the PHQ examined psychological constructs (e.g., sexual fantasies) or the interactions between the perpetrator and the prostitute victim at the time of the fatal encounter (e.g., perpetrator escalation attributable to crack cocaine-induced erectile dysfunction). Unless the perpetrator candidly articulated such details in a confession, these private cognitions and interactions were often coded as missing data. The trends in the data also revealed that many of the more idiosyncratic serial murderer behaviors and characteristics (e.g., abducting and torturing the victim; taking trophies or souvenirs; disposing of bodies in distant locations) reported in early FBI research (Ressler et al., 1988) and popularized by the media were rarely encountered in this sample, resulting in low cell counts and invalidating many bivariate statistical comparisons. As argued, those offenders exhibiting these behaviors collectively comprised a subset of the serial offender group.

The unbalanced single ($n = 49$ single victims and offenders) and serial ($n = 74$ serial victims and $n = 26$ serial offenders) sample sizes in the study were also problematic, confounding the interpretation of the aforementioned bivariate calculations. For instance, it was difficult to ascertain whether apparent trends in the data (e.g., serial perpetrators overwhelmingly frequenting crack houses for sex and serial victims exclusively exhibiting poor hygiene at the time of death), based upon low cell counts, were "actually trends" or, rather, spurious findings that would have been elucidated if the single comparison group had contained more victims.

Moreover, the decision to code each serial victim case individually, as a point in time committed by a "unique" perpetrator, was problematic in that it artificially inflated levels of pathology. For instance, 1 serial offender committed rituals at the crime scenes of 5 victims. This ritual behavior would have been coded positively across these 5 cases, although only 1 perpetrator had engaged in them. On the other hand, the methodology used in this study does seem appropriate when one considers that serial homicides are each "unique" crimes with different victims, committed at different points in time, which involve a range of perpetrator behaviors. Even when linked, it is unlikely that all aspects of the perpetrator's behaviors across the various crimes have been identical.

The possibility of a sampling bias must also be considered, especially in light of the limited geographic representation of the sample. Specifically, the single homicide cases were submitted from jurisdictions in 18 states and the District of Columbia, while the serial homicide cases were from jurisdictions in 12 states. Although African-American/Black and Caucasian victims and perpetrators were well-represented in the sample, individuals with other racial backgrounds were notoriously absent, with the exception of a small cohort within the single victim group. Because 11 single victim cases and 23 serial victim cases (attributable to 8 offenders) were submitted from a jurisdiction encompassing a large Midwestern city, the potential demographic and socioeconomic influences of these cases on the overall study findings must be considered. Sampling from a more geographically diverse area would be necessary to ascertain whether the study's demographic findings were truly representative of the victim and homicide offender populations, and would enhance the study's external validity.

The Design and the Data Collection Instrument:

The retrospective nature of this study, based completely upon file reviews, was another principal limitation. The female subjects were all deceased, and the perpetrators responsible for their deaths were not interviewed. As such, the PHQ's (Dudek & Nezu, 2000) many dependent variables, as well as those in the PCL-R (Hare, 1991c), were principally coded from information provided in investigative case files and, to a lesser extent, information furnished from interviews with law enforcement officials. As such, the collected data were subject to all of the limitations and biases inherent in the files and self-reports (e.g., inaccurate information, biases of report authors, etc.). Additionally, because many of the coded variables necessarily required a degree of subjectivity and judgment by the rater, they were also subject to bias and error.

In this regard, error may have been introduced in the study through differences in professional training. This writer, a clinical psychologist-in-training, had prior exposure to the administration and scoring of the PCL-R (Hare, 1991c) with clinical populations, unlike the FBI Special Agent research assistants. Conversely, the FBI Special Agents had specialized instruction in specialized forensic and law enforcement techniques as well as field experience with violent criminals. Despite standardized training on both instruments, the raters' perceptions of the homicide offenders themselves (i.e., either unable to be rehabilitated or being capable of clinical change) may have influenced ratings. As previously discussed, this may have produced a "halo effect" during coding of the PCL-R, with ratings being inflated due the nature of the homicides and the raters' opinions about the perpetrators themselves (Coleman, Butcher, & Carson, 1984; Firestone et al., 1998).

On the other hand, one might expect elevated PCL-R ratings across certain items (e.g., callousness, lack of remorse, sexual promiscuity, revocation of conditional release, poor behavioral controls, and criminal versatility) in light of these extreme offender populations, most who have demonstrated histories of violence, lengthy involvement with prostitutes, and some who have demonstrated compulsive sexual aggression, deviant fantasies, sadistic behaviors, and multiple homicides. Next, it is possible that response sets occurred during data collection, with team members coding items consistently based upon their training, experience, and biases, irrespective of their operational definitions (Cozby, 1985). The PHQ's (Dudek & Nezu, 2000) length may also have induced response set behavior (e.g., circling the same response across different items) through rater fatigue.

As previously discussed, although considerable, ongoing efforts were made to operationalize the items in the PHQ (Dudek & Nezu, 2000), the study revealed that some concepts, such as "overkill" and "sexually sadistic behavior" were not only perceived differently by the raters, ostensibly due to training differences, but also by other investigators. Although, these problematic items were reoperationalized and coding errors rectified pursuant to consultation and consensus with other NCAVC members, it was apparent that the existing law enforcement definitions of these concepts were nebulous and differed from those described in the clinical psychology literature. For instance, in the study "sexually sadistic behavior" was defined to encompass extreme acts of torture and control of the victim with excessive ligatures, although the DSM IV (1994)'s clinical description accounts for the presence of sexually sadistic fantasies as well as a range of additional behaviors that may not inflict as much physical harm (e.g.,

blindfolding, spanking, pinching) (p. 530).

The study was also limited not only by the paucity of existing studies germane to prostitute homicide, but also by the methodological weaknesses of the existing research. In this regard, although many of the variables selected by the principal investigator for inclusion had conceptual or anecdotal importance, few were empirically demonstrated. Lastly, because prostitute homicide and, especially, serial murder, are low base rate phenomena, one must be careful not to generalize the study's findings to other murder victim and perpetrator populations. One must also exercise caution when interpreting the study's results within the prostitute victim and homicide offender populations as well, since many prostitutes are not killed during encounters and some murderers go unapprehended, unlike the identified or convicted offenders in the present study.

Future Directions:

In light of the study's small sample size, low power, and the failure of the intended multivariate statistical analyses, it is recommended that it be repeated on a larger, more representative sample - along with appropriate statistical control to minimize experiment-wise error (e.g., use of a Bonferroni correction during multiple comparisons) - to elucidate whether or not the aforementioned findings may be replicated. The multivariate analyses would further identify those variables from the existing pool that possess the most predictive importance vis-à-vis classifying single and serial homicide victims, respectively. Requests for additional homicide case submissions could be requested through domestic law enforcement communication channels utilized by agencies across the country. To eliminate the research design difficulties (e.g.,

unbalanced sample victim and perpetrator samples and conceptual difficulties) associated with analyzing serial homicide cases coded as "individual" events, comparisons could also be made using only one serial victim per serial murderer.

Several of the study's more global findings are worthy of further investigation and should be replicated with a larger sample. Specifically, the data revealed that a proportion of the single victims resembled more traditional street prostitutes in that they were economically motivated and engaged in fewer drug addiction-related risk behaviors. For instance, they more often worked with other prostitutes and screened customers. Further, the data revealed that a percentage of the single homicides were nonsexually motivated. These homicides appeared to occur pursuant to interpersonal disputes in residential settings and involved the ingestion of alcohol and/or crack cocaine. There was also a slight indication that some of the single prostitute victims were more active participants in the drug trade.

Additionally, the seemingly critical influences of chronic substance abuse and comorbid risk behaviors on subsequent vulnerability need to be further explored. The study's findings suggested that the serial prostitute victims were most vulnerable in this regard. One possibility might be to assess for substance use, intoxication, and risk behaviors on a sample of prostitute victims who have survived violent, sexual assaults, preferably by known homicide offenders, comparing these findings with those of prostitute homicide victims.

Further research is also needed to assess the negative behavioral effects of cocaine use, especially within interpersonal contexts. The prostitution literature (Ratner, 1993a; Sterk & Elifson, 1990) has documented, anecdotally, acts of violence triggered by crack

cocaine side effects. The tentative findings in this study reveal that at least some homicides in the sample, indeed, were triggered during periods of cocaine ingestion, and that the majority of serial victims died while intoxicated on cocaine. Interviews with survivor prostitute victims as well as homicide offenders may provide more detailed information about these violent interactions.

With regard to the homicide perpetrators, the study suggested that although they resembled each other "superficially" in terms of their violent criminal backgrounds, lifestyle, and psychopathic characteristics, they differed markedly in several areas "under the surface." For instance, the single offenders more frequently knew their victims; had alcohol abuse problems; and were with their victims in residential type settings prior to the homicides. As mentioned above, these indicators point to an interpersonal dispute precipitating the homicide and should be replicated with a larger sample. Further, the serial offenders were found to have a more deviant interpersonal style than the single offenders as measured with the PCL-R (Hare, 1991c). It was argued that this characteristic might have facilitated their ability to commit serial homicide (e.g., by bypassing prostitute security screenings, appearing pleasant, etc.), while also accounting for their higher level of criminal sophistication (e.g., engaging in more planning activities) than the single offenders. Because these findings were based upon retrospective PCL-R ratings, it is recommended that the instrument be administered to the homicide offenders directly, and that the results be cross-validated with those found in this study.

Additionally, the study found salient patterns of sexual offending and deviant interests (e.g., pedophilia and necrophilia) among the serial offenders, some who

evidenced sexually sadistic fantasies and behaviors. Again, it is recommended that these deviant thoughts, feelings, and behaviors be assessed clinically, utilizing available sex offender assessment protocols. Deviant interests could be assessed using phallometry (Lanyon, 2001; Marshall, 1999); less invasive physiologic means such as the Abel Assessment for Interest in Paraphilias (Abel, 1995; Lanyon, 2001); or using questionnaires such as the Multiphasic Sex Inventory (MSI; Nichols & Molinder, 1984; Lanyon, 2001).

Other facets of this evaluation might encompass personality assessment (e.g., Minnesota Multiphasic Personality Inventory-II; MMPI-II, Butcher & Williams, 1992, as cited in Lanyon, 2001); risk for sexual (e.g., Sex Offender Risk Appraisal Guide; SORAG, Quinsey, Harris, Rice, & Cormier, 1998, as cited in Lanyon, 2001) and violent (e.g., Violent Risk Appraisal Guide; VRAG; Harris et al., 1993) recidivism (Lanyon, 2001); assessment of empathy and social skill deficits (Marshall, 1999); and the presence of cognitive denial, distortions, and problem-solving deficits (Nezu et al., 1998).

The finding that the serial offenders engaged in more behaviors (e.g., sex offenses, fetish burglaries, etc.) that were indicative of underlying sexual fantasies warrants further study. For instance, due to the limitations of the file documentation, it was not possible to ascertain the nature of their prior sex offenses (e.g., age of victim, circumstances of the offense, etc.) or whether their many property offenses involved sexual motivations. It is recommended that the actual police reports of these crimes be obtained, and that carefully tailored structured clinical interviews be conducted with the homicide offenders to elucidate additional details.

The study's findings also indicated that some crime scene and body disposal

behaviors (e.g., performing rituals, torturing the victim; returning to the disposal site, participating in the investigation) were idiosyncratic to the serial offenders. It was posited that there were cohorts of offenders within the serial group who engaged in sexually sadistic activities and other behaviors that were infrequently encountered. Additionally, within the serial offender sample there appeared to be unique offender types, differing socioeconomically (e.g., homeless vs. nonhomeless, owning a vehicle versus approaching prostitutes on foot, being unemployed or having an unskilled job versus having a skilled job, etc.), that operated in either established vice areas or neighborhood/nonstroll areas, respectively. Future research should more closely assess for the presence of these potential offender subtypes within a larger perpetrator sample.

Although one objective of this study was to generate possible risk-reduction strategies for the prostitute victims, the inherently dangerous nature of their work, exacerbated by chronic substance use and comorbid risk behaviors, make it readily apparent that there are no "easy answers." However, the study's findings do suggest some pragmatic risk-reduction activities and treatment targets that may be addressed through existing prostitution outreach programs (Alexander, 1998). Notwithstanding substance abuse treatment, these women should be educated about the side effects of crack cocaine and the drug's potentially deleterious effects during sexual encounters with customers.

Additionally, they should be informed about the drug's impact on their own risk-taking behaviors, and the increased likelihood of being victimized as a result. They should be encouraged to work in groups, and to observe each other's activities. Most importantly, the importance of screening customers carefully should be addressed.

Customers who have been known to be violent and sexually aggressive with other prostitutes and/or who make kinky sex requests should be avoided, with the police notified, if possible. Because prostitutes are often distrustful of the police (Miller & Schwartz, 1995), herein lies an opportunity for law enforcement to foster trust by educating them about these dangerous offenders and by opening lines of communication. Conversely, the police, themselves, should be encouraged to visit outreach programs and to meet with public health researchers to learn more about this vulnerable population. It is believed that this process would not only augment ongoing investigations directly, through the acquisition of new knowledge, but also indirectly, through a reduction of counterproductive sex-role stereotyping (Hatty, 1989; Miller & Schwartz, 1995).

SUMMARY AND CONCLUSIONS

This exploratory study of prostitute homicide was undertaken with several goals in mind. First, it was conducted to provide empirical support, if any, for the NCAVC's anecdotal assertions regarding victimology and crime scene differences among prostitute homicide victims. Second, it was hoped that these empirically-based findings would facilitate ongoing investigations of murdered female prostitutes, including the NCAVC's consultations with other law enforcement agencies. Lastly, by providing an initial research base for this homicide subtype, it was hoped that the study's findings would foster further research in this area while also advocating for the victims, an often-neglected clinical population.

Because this phenomenon had not been previously examined empirically, a review of relevant literatures, including prostitution, sexual and serial homicide, offender profiling, sexual aggression recidivism, and the comorbidity of drugs and violence, was conducted, with items incorporated conceptually into a data collection instrument, the Prostitute Homicide Questionnaire (PHQ; Dudek & Nezu, 2000), utilized in the study. Sections of the instrument pertained to victim and perpetrator characteristics, situational-interactive factors, crime scene variables, and the body disposal process. Differences between the single and serial homicide offenders with respect to the construct of psychopathy were also examined, using the Psychopathy Checklist-Revised (PCL-R; Hare, 1991c), an empirically-validated instrument. Efforts were made to control error variance throughout the study. Specifically, PHQ items were carefully operationalized; raters were trained on the administration and scoring of both measures; and an interrater

reliability study was conducted and reviewed before proceeding with formal data collection.

The study's aims encompassed demonstrating significant bivariate relationships - including expected trends in the data gleaned from the scholarly literatures - between the single and serial prostitute victim groups and the aforementioned conceptual blocks of victim, perpetrator, interpersonal, crime scene, and body disposal variables; incorporating significant variables into multivariate models to predict victim group membership; and to generate empirically-derived psychological profiles of the single and serial murderers and their victims, respectively.

These aims were largely accomplished, despite the limitations of the study, including a small, geographically restricted sample, corresponding low power, and error introduced by the study's raters, case file materials, and lack of experiment-wise statistical control. The bivariate analyses revealed similarities, yet subtle, striking differences, among both the single and serial victims and their murderers. Although multivariate analyses could not be performed, the calculation of odds ratios offered preliminary victim classification assignments with respect to those variables with significant bivariate relationships. Through these collective findings, the study generated four tentative profiles of the homicide offenders and their victims.

Briefly, the prostitute homicide victims appeared strikingly similar in terms of their lifestyles and use of illicit drugs, namely, crack cocaine, although the serial victims evidenced a more chronic pattern of crack cocaine abuse, intoxication, and concomitant risk behaviors and appeared more vulnerable. Conversely, the single victims engaged in fewer risk behaviors on-the-job and were more likely than the serial victims to engage in

prostitution for economic reasons. In this sense they resembled more traditional street prostitutes. Additionally, a significant portion of the single homicides were found to have nonsexual motivations; appeared to occur pursuant to interpersonal disputes; and more frequently involved alcohol and other drugs. As such, they differed from the serial homicides, which were exclusively sexually motivated.

The single and serial murderers also resembled each other superficially, having similar, violent criminal backgrounds, histories of substance use, and lifestyles, supported by elevated scores on the PCL-R (Hare, 1991c). They also resided proximately to the urban vice areas that they frequented, and they encountered, murdered, and disposed of victims in these same geographic locations. However, "under the surface," the serial offenders differed markedly from the single offenders with respect to their histories of sexual aggression, deviant sexual interests, and active sexual fantasies, often manifested behaviorally (e.g., engaging in oral, anal, and vaginal sex as well as necrophilia) at their victims' crime scenes.

The serial offenders more frequently engaged in planning activities (e.g., bringing the victim to a preselected area, removing clothing from the victim's body, etc.) than the single offenders, consistent with the FBI's organized typology (Ressler et al., 1988). It was argued that their elevated PCL-R (Hare, 1991c) Factor 1 scores, comprising a more deviant, manipulative interpersonal style, facilitated their meeting potential prostitute victims and bypassing any safety screening by "sweet talking" them, say, with promises of crack cocaine in exchange for sexual services. Alcohol and interpersonal disputes also appeared to play a more significant role in triggering the single homicides.

Additionally, the serial killers more frequently engaged in idiosyncratic behaviors

at the crime scene (e.g., engaging in rituals at the crime scene and/or with the victim's body, mutilating the victim's body, removing body parts, etc.) and more often had evidence of active sexually sadistic fantasies (e.g., possessing a pornography collection, having a torture kit, taking trophies and/or souvenirs from the victim, engaging in criminal acts suggestive of underlying fantasies, etc.) than the single offenders. However, because these indicators were infrequently encountered, it was posited that there was a subset of sexually sadistic, fantasy-driven offenders within the serial group. Similarly, there appeared to be socioeconomic subgroupings of serial offenders working in either established vice areas or in neighborhood/nonstroll areas, differing according to their employment status, type of employment, being homeless, living situation, and possessing a vehicle.

It is recommended that this study be conducted with a larger and more geographically representative sample to better elucidate the above findings. This would also involve an analysis of the many victim, perpetrator, and crime scene variables utilizing sophisticated multivariate statistical models, as was originally planned in this study, to ascertain their relative importance in predicting single or serial victim group membership. Appropriate statistical control, such as a Bonferroni correction, would also be implemented during multiple comparisons to minimize experiment-wise error. Additionally, prospective research should be conducted with prostitutes who have survived violent attacks by male customers as well as the homicide offenders themselves to better understand the involvement of cocaine addiction and risk behaviors in these homicides; to further identify violence triggers during victim-perpetrator interactions; and to assess the perpetrator's motivations for soliciting and selecting his victims.

APPENDIX A

Prostitute Homicide Questionnaire (PHQ)

Jonathan A. Dudek, M.A. and Christine Maguth Nezu, Ph.D., ABPP © 2000

Classification Form

Assign Victim and Perpetrator Identification Numbers (obtain from master list):

[Variable Name: VICTIMID]

(1) Victim I.D. Number: _____

[Variable Name: OFFNDRID]

(2) Perpetrator I.D. Number: _____

[Variable Name: RATERNAME]

(3) Rater Name: _____ Date: _____

Independent Variables:

[Variable Name: CATEGORY]

(4) Classify the prostitute victim according to homicide category:

(Code from VICAP (1998) Form, Item # 9 as well as police reports and offender statements)

Circle: Single homicide victim Serial (multiple) homicide victim Unable to determine

(A "single homicide prostitute victim" (SHPV) is defined to be: A single victim who is killed at a single point in time during a single event. Hence, a SHPV may not be a serial homicide victim, who comprises one of a series of victims (see definition below). It follows that a SHPV will not be part of a double or triple homicide, involving two and three victims, respectively, killed at a single point in time during a single event (Ressler et al., 1988, p. 138). Further, a SHPV will not be the victim of a mass murderer: a single individual, described to be mentally unstable, who, out of anger, kills either three random victims (or family members) plus himself or four or more random victims (or family members) during a single event at a single point in time (Ressler et al., 1988, pp. 138-139). Lastly, the SHPV definition excludes all victims of spree murders. This phenomenon involves the killing of two or more opportunity victims (i.e., murdered because they were at the wrong place at the wrong time) in two or more locations, resulting from a single event, and with no "emotional cooling-off period" (Ressler, 1988, pp. 138-139).

(A "multiple homicide prostitute victim" (MHPV) is defined to be: A victim of "two or more killings committed as separate events, usually, but not always, by one offender acting alone" (FBI, n.d., p. 3). There is an "emotional cooling-off period" by the offender - ranging between

hours to years - between these killings, which are believed to have psychological motivations (Ressler et al., 1988, p. 139). The serial offender stalks his victims in a predatory fashion, and the physical and behavioral evidence at the crime scene reflects sexually sadistic practices (FBI, n.d., p. 3)).

Dependent Variables:

[Variable Name: MOTIVE]

(5) Classify the homicide under one of the following categories addressing motive:
(Code from autopsy reports; VICAP (1998) Form Item #'s 11, 87-88, 65-66, 69, 72-78; police reports; and offender and witness statements)

Circle: Sexual homicide Nonsexual homicide Unable to determine

(A "sexual homicide" is defined to be: A murder with a sexual motivation, as determined by evidence and/or observations. As defined by the FBI, the "evidence and/or observations" may include the arrangement or absence of clothing on the victim; exposure of the victim's genitals and sexual areas; sexual positioning of the victim's corpse; sodomy of body orifices with foreign objects; evidence of sexual intercourse (oral, vaginal, and anal); and evidence of "substitute sexual activity, interest, or sadistic fantasy" (Ressler et al., 1988, p. xiii). "Substitute sexual activity or interest" might include masturbation, ritualism (e.g., urination and/or defecation, rock formations, burning candles, dead animals, and other bizarre activities observed at the crime scene that suggest ceremonial activity), symbolism (e.g., writing, carving or drawing on the victim's body or elsewhere at the crime scene); the presence of semen near, on, or inside the corpse; sexual injury or mutilation on the victim's body; and multiple stabbings and cutting wounds on the corpse, including abdominal slicing, throat-slashing, and overkill injuries that appear to be sexually motivated (FBI, 1991; Geberth, 1996, p. 401). Postmortem wounds and the evisceration of the victim's body should also be examined for sexual motivations (Holmes and Holmes, 1996). Evidence of "sadistic fantasy" at the crime scene encompasses the use of torture on the victim (e.g., premortem whipping, burning, cutting, slicing, and biting injuries; pulled-out hair; the removal of body parts; and the presence of nonfatal asphyxiation injuries) (FBI, 1991; Ressler et al., 1985b).

(A "nonsexual homicide" is defined to be: A murder without a sexual motivation. Murders in this category may be committed for "emotional, selfish, or cause-specific reasons." These include marital arguments, interpersonal disputes (e.g., homicides stemming from jealousy, arguments over unpaid debts, and bar fights), murder in self-defense, bombings and assassinations by fanatic groups, and mercy killings. Holmes and De Burger (1988) describe a so-called "mission-oriented" offender, who despises prostitutes as a group and wants to "rid society of them," believing they are "unladylike" and "dirty" and should be punished violently. Assuming there is no sexual component, a prostitute homicide in this case would be of a nonsexual motivation. Nonsexual homicides may also be committed in furtherance of a money-making "criminal enterprise" such as robbery-murders, drug-related homicides, drive-by gang shootings, and contract murders (Ressler et al., 1988, pp. 140-141).

Prostitute Homicide Questionnaire (PHQ)

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Victim Characteristics

[Variable Name: VICTRACE]

(1) What is the race of the victim?

(Code from VICAP (1998) Form, Item # 17 or from police reports)

- | | |
|---|--|
| <input type="checkbox"/> African-American/Black
<input type="checkbox"/> Caucasian
<input type="checkbox"/> Native American/Alaskan Native
<input type="checkbox"/> Other (list) _____ | <input type="checkbox"/> Asian/Oriental
<input type="checkbox"/> Hispanic
<input type="checkbox"/> Unable to determine |
|---|--|

[Variable Name: VICTAGE]

(2) Victim's Age at the Time of Death (Enter "99" if unable to determine): _____

(Code from VICAP (1998) Form, Item # 19a or from police and medical reports)

Using the postmortem toxicology report as a reference, indicate whether or not each of the following drugs or metabolites were detected in the victim's body. Next, where requested, record their respective blood levels/concentrations and units (e.g., micrograms/milliliter, milligrams/liter, nanograms/milliliter, percent concentration, etc.) on the calculation sheet provided, and then convert them into standardized units using the listed formulas. Finally, enter the converted numerical values into the database:

<u>Drug/Metabolite</u>	<u>Present</u>		
[Variable Name: COCAPRES] (3) Cocaine	Yes	No	Unable to determine
[Variable Name: COCALEVL] (4) Cocaine Blood Level			_____
[Variable Name: BZEPRES] (5) Benzoyllecgonine (BE; BZE) (cocaine metabolite)	Yes	No	Unable to determine
[Variable Name: BZELEVL] (6) Benzoyllecgonine (BE; BZE) Blood Level			_____
[Variable Name: ETOHPRES] (7) Ethanol (Alcohol)	Yes	No	Unable to determine
[Variable Name: ETOHLEVL] (8) Ethanol (Alcohol) Blood Level			_____

Victim I.D.# _____
Perpetrator I.D.# _____

[Variable Name: MORPPRES]

(9) **Morphine** Yes No Unable to determine
(heroin & codeine metabolite)

[Variable Name: MORPLEVL]

(10) **Morphine Blood Level** _____

[Variable Name: CODEPRES]

(11) **Codeine** Yes No Unable to determine
(morphine precursor)

[Variable Name: CODELEVL]

(12) **Codeine Blood Level** _____

[Variable Name: SCH1PRES]

(13) **Other illicit Schedule I drugs** Yes No Unable to determine

("Other illicit Schedule I drugs" includes all other drugs of abuse, excluding those above, listed under "Schedule I" of the Controlled Substances Act. These are drugs with a high potential for abuse; with no approved medical use in the United States; and having a "lack of accepted safety for use...under medical supervision (Controlled Substances Act, 2000, p. 6). Other examples of Schedule I drugs include opiates, opiate derivatives (other than heroin, morphine, and codeine), hallucinogens (e.g., LSD, mescaline, peyote, marijuana, PCP, psilocybin, MDA, MDMA/XTC/ Ecstasy, GHB, DMT, hashish, tetrahydrocannabinol), and methaqualone (Quallude). Please refer to the provided NIDA "Commonly Abused Drugs" and Controlled Substances Act handouts for lists of Schedule I drugs.

[Variable Name: OSCHPRES]

(14) **Other Schedule II, III, & IV drugs** Yes No Unable to determine

("Other Schedule II, III, & IV drugs" includes drugs of abuse, excluding those above, listed under "Schedules II, III, & IV" of the Controlled Substances Act. Schedule II drugs have a high potential for abuse; have an accepted medical use in treatment or medical use with severe restrictions; and their abuse may lead to severe psychological and physical dependence (Controlled Substances Act, 2000, p. 6). Schedule II drugs are only available by an unrefillable prescription and require an order form (NIDA, 2000, p. 3). Other Schedule II drugs include methamphetamine, opium, and opiates (e.g., fentanyl, methadone). Schedule III drugs have less abuse potential than those listed under Schedules I and II; have an accepted medical use in treatment in the United States; and abuse may lead to moderate/low physical dependence or high psychological dependence (Controlled Substances Act, 2000, pp. 6-7). Examples of Schedule III drugs include stimulants (e.g., amphetamine, methylphenidate (Ritalin)), depressants (e.g., barbituric acid, glutehimide), nalorphine, and anabolic steroids). Schedule IV drugs have a low abuse potential as compared to the drugs listed under Schedule III; have an accepted medical use in treatment in the United States; and their abuse may lead to "limited physical dependence or psychological dependence" as compared to the drugs in Schedule III (Controlled Substances Act, 2000, p. 7). Schedule IV drugs include barbital, chloral hydrate, and phenobarbital. Please refer to the provided NIDA "Commonly Abused Drugs" and Controlled Substances Act handouts for lists of Schedule II, III, and IV drugs.

[Variable Name: PUTRFACT]

(15) **Indicate the state of putrefaction (decomposition) of the victim's body at autopsy (or upon discovery, if autopsy report is not available) (choose one):**

(Code from autopsy report or, if unavailable, police reports and crime scene photos. Select the category, with criteria excerpted from Spitz and Fisher (1993), that most accurately approximates the state of putrefaction (decomposition) of the victim's body. However, the authors stress that a host of other factors, including temperature, humidity, exposure to the sun, exposure to other heat sources, health conditions (e.g., sepsis, fever), the physical environment in which the body lies (e.g., exposed to air, in water, or in soil), periods of freezing and/or thawing, the presence of tissue trauma, and tissue destruction by insects will impact the rate of putrefaction.

NO OBVIOUS SIGNS OF PUTREFACTION (no indications of any of the following: skin discoloration; marbling (where a greenish/purplish discoloration spreads to chest and body extremities, producing a "marbling" pattern, composed of decomposed blood and deposits within dilated, subcutaneous blood vessels); swollen tongue (which gradually protrudes from mouth); bulging eyes; gaseous bloating (especially in areas where there is loose skin (i.e., scrotum, penis, and eyelids)); purging of putrid, bloody decomposition fluids from nose and mouth; emission of a foul odor; skin which is slippery from vesicles, resulting in slippage of the epidermis (e.g., skin of hands and fingernails slip off like a glove while the skin of the legs slips off like a stocking); destruction of body tissues by maggots) (Spitz & Fisher, 1993, pp. 33-34).

EARLY PUTREFACTION (is characterized by greenish discoloration of the abdomen, **but with no evidence of any of the following:** skin marbling; swollen tongue (which gradually protrudes from mouth); bulging eyes; gaseous bloating; purging of putrid, bloody decomposition fluids from nose and mouth; emission of a foul odor; skin slippage; and destruction of body tissues by maggots) (Spitz & Fisher, 1993, pp. 33-34, 36).

MODERATE PUTREFACTION (evidenced by gaseous bloating and/or dark greenish/purple facial discoloration which may appear almost black and/or skin marbling and/or purging of putrid, bloody decomposition fluids and/or emission of a highly foul odor; and/ or swollen tongue which gradually protrudes from mouth and/or bulging eyes and/or skin slippage and/or destruction of body tissues by maggots) (Spitz & Fisher, 1993, p. 36)

EXTREME PUTREFACTION (characterized by the absence of tissues, dissipation of bloating, and massive insect infestation) (W. D. Lord, personal communication, July 14, 2000).

MUMMIFICATION (drying of body tissues under conditions of high environmental temperature, low humidity, and good ventilation) (Spitz & Fisher, 1993, p. 36).

COMPLETE SKELETONIZATION (in temperate climates, this process takes approximately 1 ½ years) (Spitz & Fisher, 1993, p. 35)

Unable to Determine

Notes:

[Variable Name: SEXSRVCS]

(16) Check off the sexual services provided by the victim (choose one):

(Code from police reports and offender and witness statements).

- sex-for-drugs
 sex-for-money
 both sex-for-money and sex-for-drugs
 Unable to Determine

[Variable Name: VICTMOTV]

(17) Indicate the victim's principal motivation for engaging in prostitution (choose one):

(Code from police reports and offender and witness statements).

("Principal motivation" is defined to be the most salient reason for which the victim entered prostitution to support herself, determined according to the victim's own statements, her behavior (e.g., sex-for-drug exchanges, evidence of chronic drug use, etc.), or reports from third-party sources, such as the police, fellow prostitutes, customers, family members, or friends).

- supporting cocaine/crack cocaine addiction
 supporting other drug addiction (e.g., heroin, methamphetamine, prescription drugs)
 earning an income (i.e., motivated for economic reasons, such as to support a family, with any addiction being secondary)
 Unable to Determine
 Other (describe) _____

[Variable Name: WKSETTING]

(18) Indicate the victim's principal work setting (choose one):

(Code from police reports and offender and witness statements)

("Principal work setting" is defined to be the victim's preferred location to solicit customers when working as a prostitute. This would be the area where the victim spent the most time prostituting herself, according to her own statements and third-party sources, such as the police, fellow prostitutes, customers, family members, and friends).

STREET/STROLL AREA

(A "stroll area" is defined to be a geographic vice area, known by both customers and law enforcement officials, where street prostitutes work or, literally, "walk" (French, 1993). The stroll area, according to French (1993), is usually located one block away from a major road. It may be situated in a low income, inner-city neighborhood and/or an area characterized by high-crime and drug distribution and consumption. Frequently, customers will utilize vehicles to access stroll areas).

NEIGHBORHOOD/NONSTROLL AREA

(A "neighborhood/nonstroll area," according to the FBI, is a residential, nonstroll location - likely proximate to drug distribution and usage sources, such as crack houses - where prostitutes work and "hang out," servicing mostly foot traffic customers. It is hypothesized that the victim's affinity for this particular area is due to the ready

- availability of illicit drugs).
____ CRACK HOUSE/DRUG DEN (sheltered area where drugs are ingested, sex-for-drug exchanges occur, etc.)
____ APARTMENT/RESIDENCE
____ HOTEL/MOTEL
____ BROTHEL (an organized house of prostitution usually run by a madam and found in a so-called "red light district," containing such establishments (De Sola, 1982)).
____ MASSAGE PARLOR
____ ESCORT/CALL GIRL (victim meets customers in prearranged, agreed-upon location)
____ Unable to Determine
____ Other (list) _____

Notes:

[Variable Name: CRIMAREA]

(19) Did the victim work in a high-crime area?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("High crime areas" are defined to be areas prone to spontaneous violence, such as drug use/distribution areas; low-income, inner-city neighborhoods; skid rows; red light districts; and areas controlled/enforced by street gangs).

[Variable Name: WKALONE]

(20) Did the victim principally work alone?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Principally working alone" is defined to be working alone greater than 50% of the time during a week while prostituting (i.e., strolling and soliciting customers). If such an estimation is not possible, code positive if documentation indicates that the victim generally worked alone more often than not).

[Variable Name: PERSECUR]

(21) Did the victim work in the presence of other prostitutes (e.g., who might record a customer's license plate/tag number or who might otherwise know of the victim's whereabouts) or have other personal security measures in place?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Other personal security measures" includes having a pimp, a male partner, or a madam/manager to observe and monitor sexual encounters).

[Variable Name: SEXPLACE]

(22) Where did the victim's sexual encounters most frequently take place? (choose one):

(Code from police reports and offender and witness statements)

("Most frequently" is defined to be greater than 50% of the time. If such an estimation is not

possible, then check off the category that is the most frequently cited, or emphasized, location for the victim's sexual encounters in the file materials).

- _____ in cars
- _____ in isolated areas (e.g., alleys, stairwells, abandoned buildings, parks, vacant areas)
- _____ in a crack-house/drug den
- _____ apartment/residence
- _____ hotel/motel
- _____ brothel (an organized house of prostitution usually run by a madam and found in a so-called "red light district," containing such establishments (De Sola, 1982)).
- _____ massage parlor
- _____ prearranged, agreed-upon location (if prostitute is an escort/call girl)
- _____ Unable to Determine
- _____ Other (list) _____

Notes:

[Variable Name: VVICECHG]

(23) List the number of the victim's vice-related arrests/charges, if any (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine. Exclude all convictions:

Number of vice-related arrests/charges: _____

("Vice-related arrests/charges" include prostitution, indecent exposure, solicitation, and related offenses).

[Variable Name: VPOSSCHG]

(24) List the number of the victim's arrests/charges for drug possession and/or possession of drug-related paraphernalia, if any (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine. Exclude all convictions:

Number of possession arrests/charges: _____

[Variable Name: VDISTCHG]

(25) List the number of the victim's arrests/charges for drug distribution and/or manufacture, if any (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine. Exclude all convictions:

Number of distribution and/or manufacture arrests/charges: _____

[Variable Name: VHOMLESS]

(26) Was the victim homeless?

(Code from VICAP (1998) Form, Item #'s 13 and 25a, police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Homeless" is defined to be residing on the street, residing in a homeless shelter/boarding home, providing sexual services in a crack house in exchange for the opportunity to live there, or otherwise having inadequate or nonexistent financial and/or welfare support to live in one's own

dwelling).

[Variable Name: SOCSUPPT]

(27) Did the victim have any social supports at the time of her death?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Social supports" are defined to be those persons, such as family members, a significant other, friends, or a pimp, with whom the victim had positive social contacts, at least once per week. The scope of these positive social contacts might include having a colleague who watches out for her; residing with a family member, friend, colleague, or significant other; trusting, expressing affection for, and/or confiding in someone either in person or on the telephone; and meeting with others socially (e.g., in a restaurant or bar, playing cards, etc.)).

[Variable Name: VHYGIENE]

(28) Did the victim evidence poor health and/or poor hygiene at the time of death, attributable to, or consistent with, chronic drug use (e.g., crack cocaine, heroin)?

(Code from autopsy report, crime scene and autopsy photos, police reports, and offender and witness statements)

Circle: Yes No Unable to determine

For the purposes of this question, "poor health and/or poor hygiene" includes sores on mouth/lips/tongue resulting from crack pipe burns; abrasions/burns on fingers; singed eyebrows/facial hair; dental problems; needle track marks and/or infected injection wounds (skin ulcers) on body; irritated mucous membranes; emaciated appearance, possibly attributable to malnourishment while drug-bingeing; the presence of HIV/AIDS or hepatitis due to needle-sharing or to unsafe sexual practices; other sexually transmitted diseases; uncleanliness attributed to the victim's own neglect, (not to any actions surrounding the offender's homicidal assault); and other symptoms delineated in the autopsy report that are specifically attributed to chronic drug use (Boyle & Anglin, 1993; Inciardi, 1993; Ouellet, Wiebel, Jimenez, & Johnson, 1993; Spitz & Fisher, 1993). Code positive if any of the above indicators are clearly described in the autopsy report. If the autopsy report is unclear, then look for corroborative evidence in existing file materials (e.g., crime scene photos, police reports) to make a determination. If an autopsy report is unavailable, then code positive if other information sources describe any of the aforementioned indicators of poor health/hygiene).

(This definition excludes "poor health and/or poor hygiene" attributable to a known, preexisting medical and/or psychiatric condition (e.g., records indicate the victim suffered from depression or schizophrenia, contributing to neglect of proper health and hygiene practices); injuries stemming from the victim's interaction with the offender (e.g., burns/puncture wounds inflicted by offender; abrasions secondary to victim's body being dragged); and factors pertaining to the body's decomposition, exposure to the elements, consumption by predators/insects, etc.)

[Variable Name: INFOSRCE]

(29) Indicate the information source used to determine the victim's poor health and/or poor hygiene at the time of death, attributable to, or consistent with, chronic drug use (choose one):

_____ autopsy report only (i.e., autopsy report clearly describes victim's poor health and/or

- _____ hygiene indicators)
_____ autopsy report supplemented with other documentation from case file (i.e., autopsy report is unclear)
_____ other documentation within case file only (i.e., autopsy report is unavailable)
_____ Unable to determine

[Variable Name: VICETIME – will be calculated by computer]

Enter the following date information (month and year) to facilitate calculating the length of time (in years) the victim was involved in prostitution since entering the profession. Enter all date-related information that is available in the requested format, even if only one of the variables may be coded. Record “not applicable” if no vice-related arrests exist:

[Variable Name: VICEDATE]

(30) Date of first vice-related arrest (mm/yyyy): _____ Unable to determine

[Variable Name: DEATHDTE]

(31) Date of victim’s death (mm/yyyy): _____ Unable to determine
(See VICAP Form (1998), Item # 57 “Murder/Assault” Column, “Date” Row)

If above information is unavailable, record any such time period information listed in the case file:

[Variable Name: RISKLEVL – will be calculated by computer]

Did the victim engage in any of the following high-risk personal, health, and/or sexual behaviors described in Ratner (1993) when meeting and servicing customers?

(Code from police and autopsy reports and offender and witness statements, especially those of other prostitutes)

“High risk personal behaviors” are defined to be the following:

(Code positive if any documented evidence exists in support of the following behaviors, to include the victim’s interaction with the perpetrator)

[Variable Name: SERVEANY]

(32) SERVICED ANY CUSTOMER (Code positive if the victim did not screen customers (i.e., excluding men who were inebriated; who were under the influence of drugs; who wanted kinky sex (i.e., outside of the victim’s repertoire); or who were perceived to be as strange or dangerous))

Circle: Yes No Unable to determine

[Variable Name: VWKALONE]

(33) PRINCIPALLY WORKED ALONE (Code positive if **Question #20** above is endorsed)

Circle: Yes No Unable to determine

[Variable Name: DRUGWORK]

(34) WAS UNDER THE INFLUENCE OF DRUGS OR ALCOHOL AT THE TIME OF DEATH AND/OR WAS KNOWN TO SERVICE CUSTOMERS WHILE HIGH ON DRUGS AND/OR INTOXICATED (Code positive if any of **Questions #3 - 14** above are endorsed,

revealing the presence of illicit drugs and/or alcohol in the victim's body)

Circle: Yes No Unable to determine

[Variable Name: ROBJOHN]

(35) ATTEMPTED TO ROB OR CHEAT CUSTOMERS

Circle: Yes No Unable to determine

“High risk health behaviors” involve not taking precautions during sexual acts, to include:

(Code positive if any documented evidence exists in support of the following behaviors, to include the victim's interaction with the perpetrator)

[Variable Name: NOCONDOM]

(36) NOT USING A CONDOM (Code positive if any evidence exists of the prostitute victim not using a condom with customers, to include her interaction with the perpetrator)

Circle: Yes No Unable to determine

[Variable Name: FORGOUSE]

(37) WILLING TO FOREGO CONDOM USE IN EXCHANGE FOR DRUGS OR FOR ADDITIONAL MONEY (Code positive if any evidence exists of the prostitute victim foregoing condom use with customers for drugs/additional money, to include her interaction with the perpetrator)

Circle: Yes No Unable to determine

[Variable Name: NOCHECK]

(38) DID NOT CHECK A CUSTOMER'S HYGIENE (Code positive if evidence exists, suggesting that the victim neglected to check whether customers were washed/well-groomed or infected with disease (e.g., checking for disease transmission points, such as oral and penile ulcers, asking whether customer is infected with HIV/AIDS or other sexually transmitted diseases)

Circle: Yes No Unable to determine

[Variable Name: RISKYSEX]

(39) ENGAGING IN SEXUAL ENCOUNTERS WHILE KNOWINGLY INFECTED WITH HIV OR OTHER SEXUALLY TRANSMITTED DISEASES AND/OR ENGAGING IN SEXUAL ENCOUNTERS WITHOUT HAVING REGULAR MEDICAL CHECKUPS AND/OR TESTING FOR HIV AND SEXUALLY TRANSMITTED DISEASES (Code positive if evidence exists, suggesting that the victim engaged in this behavior with customers, to include the perpetrator. Code positive if autopsy report indicates that the victim was infected with HIV/AIDS and/or other sexually transmitted diseases).

Circle: Yes No Unable to determine

“High risk sexual behaviors” are defined to be the following:

(Code positive if any documented evidence exists in support of the following behaviors, to include the victim’s interaction with the perpetrator)

[Variable Name: ANYSEX]

(40) PERFORMING ANY SEXUAL ACT FOR ANY PRICE TO OBTAIN MONEY TO BUY DRUGS AND/OR PERFORMING ANY SEXUAL ACT IN RETURN FOR DRUGS

(Code positive if evidence exists, suggesting that the victim engaged in, or was willing to engage in, any sexual act with a customer, including the perpetrator, for any price in return for drugs or money to buy drugs. This behavior describes the prostitute victim’s willingness to give up control during the sexual interaction - providing sexual services beyond her “normal” repertoire and for any price - in order to support her drug addiction. Green et al. (1993) and McKeganey and Bernard (1992) describe conventional sexual services requested by customers and provided by Glasgow, Scotland prostitutes, including oral and vaginal sex and masturbation. Inner-city females in the Harlem section of New York City most frequently provided oral and vaginal sex in exchange for drugs and money to purchase drugs (El-Bassel et al., 1997). Using oral and vaginal sex and masturbation as “accepted” forms of sexual services, requests beyond this “normal repertoire” might include anal sex and other requests for “kinky” sex (e.g., engaging in sadomasochistic activities, defecating/urinating on customer, providing soiled clothing to customer, and other paraphiliac activities) (Green et al., 1993)). As described below, within a crack house setting, crack-addicted females have been found to engage in additional perverse sexual behaviors in support of their drug addiction, including sex with multiple males, sex with other women, sex with animals, and performing sexual acts in front of a male audience (Ratner, 1993).

Circle: Yes No Unable to determine

[Variable Name: FREAKING]

(41) ENGAGING IN PERVERSE SEXUAL ACTS AND BEING SUBJECTED TO VERBAL, PHYSICAL, AND SEXUAL ABUSE AND HUMILIATION BY MALES

(Code positive if evidence exists, suggesting that the victim engaged in this behavior, described as “freaking” (Koester & Schwartz, 1993) or “fiending” (Ouellet et al., 1993). Specifically, this dynamic often occurs in a crack house (see Ratner, 1993), where a crack-addicted female, who is willing to “do anything” to support her addiction, is subjected to verbal, physical, and sexual abuse by male customers, who, possessing the desired crack/money to purchase crack, realize they have complete control over her. Specifically, the female might have anal sex, sex with multiple males, sex with other women, sex with animals, and engage in sexual acts in front of a male audience. She might be raped repeatedly, physically beaten, and verbally degraded. For instance, Ouellet et al. (1993) describe the case of a crack-addicted female who complies with a male customer’s request to “bark like a dog” while she performs oral sex on him, as he refused to give her crack cocaine otherwise (p. 92)). The women who engage in these behaviors are given derogatory names by the customers who exploit them as well as the drug dealers and other prostitutes who despise them (Ratner, 1993). These names include “skeezers” (French, 1993); “house girls,” (Inciardi, 1993); “toss-ups,” (Feldman, Espada, Penn, & Byrd, 1993); “crack whores,” (Feldman et al., 1993); “chickenheads,” (Ratner, 1993); “rock prostitutes” (Ratner, 1993); and “strawberries” (Boyle & Anglin, 1993)).

Circle: Yes No Unable to determine

[Variable Name: HXOFVICT]

(42) Not including the interaction which led to the victim's fatality, does the victim have a history of prior victimization?

Circle: Yes No Unable to determine

(Code positive if documentation exists in police reports, medical records, witness statements, or other file materials for any of the following forms of victimization):

("Victimization" is defined to be any violent or criminal incident and may include the following: being raped by customer, gang raped, assaulted by pimp, robbed of earnings, assaulted, mugged, beaten, kicked, bludgeoned, stabbed/slashed, hit with vehicle, cheated (e.g., given fake crack cocaine, not paid for services), tortured, kidnapped, choked, shot, and receiving broken bones (Silbert & Pines, 1982)). Victimization might occur on-the-job (e.g., random acts of violence experienced while prostituting, customer- and pimp-related violence); off-the-job (e.g., random acts of violence while not prostituting); at home (e.g., domestic violence directed toward victim by partner or significant other); and as a result of involvement with the drug trade (e.g., victimization stemming from arguments over drug prices, quality of drugs, drug-using equipment, failure to pay drug debts, and selling adulterated drugs; also includes victim harm due to retribution, such as being injured in a drive-by shooting).

Prostitute Homicide Questionnaire (PHQ)

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Perpetrator Characteristics

[Variable Name: PVICECHG]

- (1) List the total number of the perpetrator's documented, prior vice arrests/charges, excluding all vice convictions and all arrests/charges and convictions relating to the prostitute homicide victim under study (i.e., the index offense) (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine. Exclude all convictions:

Number of vice-related arrests: _____

("Vice-related arrests/charges" include prostitution, indecent exposure (as part of vice arrest only, excluding incidents of exhibitionism committed independently), solicitation, and related offenses).

Example (adapted from Hanson, 1997): The offender was arrested and convicted in 1982 for solicitation of a prostitute. In 1990 he was arrested and convicted for two counts of solicitation of prostitutes. The total number of vice-related arrests/charges in this case is "3" (the 1982 arrest plus the two 1990 charges).

[Variable Name: SLCTTIME – will be calculated by computer]

Enter the following date information (month and year) to facilitate calculating the length of time (in years) the offender has been engaged in soliciting prostitutes. Record "not applicable" if no vice-related arrests exist:

[Variable Name: PVICEDAT]

- (2) Date of offender's first vice-related arrest Unable to determine
for solicitation (mm/yyyy): _____

[Variable Name: PADLTSEX]

- (3) List the total number of the perpetrator's documented, prior adult sexual offense arrests/charges, excluding the following: 1). All sexual offense convictions; 2). All arrests/charges and convictions for sexual offenses involving children (defined to be victims who have not yet reached their 18th birthday at the time of the offense (18 U.S.C. § 2422, 2423 (1999)), including pedophilia (sexual behavior involving prepubescent children, generally aged 13 years or younger (DSM IV, 1994)), child molestation, rape, indecent assault, nonparental child abduction, child pornography, child prostitution, other paraphilia-related offenses involving children (e.g., exposure of genitals to children), and arrests for attempts of these offenses); and 3). All arrests/charges and convictions relating to the prostitute homicide victim under study (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine:

("Adults" are defined to be victims who are 18 years old or greater. "Prior adult sexual offense

arrests/charges” is conceptually defined according to criteria used by Hanson (1997) and Quinsey, Rice, & Harris (1995). Specifically, this definition encompasses the number of “sexual offenses officially recorded prior to the index offense” (i.e., the total number of sexual offenses documented in the offender’s criminal history, excluding all sexual offense convictions and any arrests/charges and convictions related to the prostitute homicide victim currently being examined) and omits any self-reported sexual offenses by the offender (Hanson, 1997, p. 5). Include arrests/charges for crimes involving “actual or attempted physical contact of a coercive nature with clear sexual intent,” including rape, sexual assault, aggravated sexual assault, murder (with a sexual component), and arrests for attempts of these offenses (Quinsey et al., 1995, p. 88). Also include criminal arrests/charges involving paraphilias. According to the DSM IV (1994), a paraphilia encompasses recurrent, intense sexual urges, fantasies, or behaviors generally involving nonhuman objects, the suffering or humiliation of the individual and his/her partner or children or other nonconsenting individuals (pp. 522-523).

In this regard, using the legal inclusion criteria described by Hanson (1997) and Quinsey, Rice, & Harris (1995), “paraphilia-related criminal arrests/charges” include arrests/charges for DSM IV paraphilias, such as exhibitionism (exposing one’s genitals to a stranger in public - e.g., indecent exposure), frotteurism (inappropriate rubbing or touching of nonconsenting persons), voyeurism (“peeping,” or watching an unsuspecting person who is naked, disrobing, or having sex), burglaries involving the theft of fetish items (e.g., stealing nonliving items, such as underwear, which may be sexually arousing, fulfill a sexual urge, and/or be part of a sexual fantasy), and sexual sadism (becoming sexually aroused by inflicting actual psychological and/or physical suffering on a victim - e.g., torture, mutilation, strangulation, beating, electrical shocks, stabbing, humiliation, etc.). Other relevant paraphilias listed under the DSM IV’s “not otherwise specified” category include telephone scatologia (making obscene phone calls), necrophilia (having sex with deceased individuals), and zoophilia (having sex with animals). **As previously mentioned, exclude arrests/charges for pedophilia and other sexual offenses involving children.**

Example (adapted from Hanson, 1997): The offender was arrested in 1979 for two counts of sexual assault on adult victims and was convicted on one of them this same year. He was arrested, but not convicted, for exposing himself to adults in a public park in 1984. In 1985, the offender was arrested and convicted for inappropriately touching a 12 year old female. In 1990, he was arrested on two counts of peeping into the dormitory window of two female college students and was convicted on both counts in 1991. In 1998, the offender was arrested and charged with torture, rape, and homicide of the 30 year-old female prostitute, the index offense currently under study.

In this case, the total number of “prior adult sexual offense arrests/charges” would be “5” (the two 1979 arrests for sexual assault; the 1984 exposure arrest; and the two counts of peeping in 1997). The 1979 and 1991 convictions are not counted according to exclusion criteria. Similarly, the 1985 arrest and conviction for child molestation are excluded because they comprise a child sexual offense (pedophilia). Lastly, the 1998 arrest and conviction for the torture, rape, and murder of the female prostitute victim are excluded because they are part of the index offense.

[Variable Name: PCHLDSEX]

- (4) **List the total number of the perpetrator's arrests/charges for actual and attempted sexual crimes against children, excluding all sexual offense convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine:**

("Children" are defined to be victims who have not yet reached their 18th birthday at the time of the offense, with victims who are 18 years of age or older being defined as adults (18 U.S.C. § 2422, 2423 (1999)). Using the legal inclusion criteria described by Hanson (1997) and Quinsey, Rice, & Harris (1995), "actual and attempted sexual crimes" includes arrests/charges for pedophilia (sexual behavior involving prepubescent children, generally aged 13 years or younger (DSM IV, 1994)), child molestation, rape, indecent assault, nonparental child abduction, child pornography, child prostitution, other paraphilia-related offenses (e.g., exposure of genitals to children), and arrests for attempts of these offenses. Exclude all convictions for actual and attempted sex crimes against children as well as all arrests/charges and convictions for sexual crimes involving adult victims.

Example (adapted from Hanson, 1997): In 1982 the offender was arrested, but not convicted for inappropriately touching an 8-year old boy. In 1984 he was arrested and convicted on two counts of exposing himself to a young girl and her mother in a supermarket parking lot. In this case, the total number of arrests/charges for "actual and attempted sexual crimes against children" would be "2" - (one 1982 arrest for touching a young boy and one 1984 charge for exposing himself to a young girl). Note: the 1984 charge for exposing himself to the young girl's mother was omitted, since she was an adult victim. Additionally, the 1984 conviction for exposing himself to the young girl was not counted because convictions are excluded.

[Variable Name: MALEVICT]

- (5) **Among the perpetrator's arrests/charges for actual and attempted sexual crimes against children examined above, do any involve male child victims?**

Circle: Yes No Not Applicable Unable to determine

(A "child victim" is defined to be an individual who is below the age of 18 years at the time of the offense, with persons aged 18 years or older being defined as adults (18 U.S.C. § 2422, 2423 (1999)). Code positive if the perpetrator has one or more arrests/charges for sex crimes involving a male child victim).

[Variable Name: HXJUVSEX]

- (6) **Does the perpetrator have a history of committing sexual offenses as a juvenile?**

Circle: Yes No Unable to determine

("Juvenile" is defined to be an individual who has not yet reached their 18th birthday at the time of the offense, with persons aged 18 years or older being defined as adults (18 U.S.C. § 2422, 2423 (1999)). Code positive if the offender has one or more sexual offense arrests/charges meeting this age criterion).

[Summary Variable Name: PARATOTL - will be calculated by computer]

Based upon available file information and evidence, does the perpetrator exhibit any of the following paraphilia-related interests?

(Code from police reports (especially documentation of the offender's personal items, such as items seized in a search warrant of his home), criminal histories, psychological/psychiatric

records, and offender/witness statements. Examine the adult and child sexual offenses endorsed in Questions #3 and #4 above, coding positive any of the corresponding paraphilia categories below).

According to the DSM IV (1994), a paraphilia encompasses recurrent, intense sexual urges, fantasies, or behaviors generally involving nonhuman objects, the suffering or humiliation of the individual and his/her partner or children or other nonconsenting individuals (pp. 522-523). "Paraphilia-related interests" include the various paraphilia categories described in the DSM-IV (1994), such as: pedophilia (sexual behavior involving prepubescent children, generally aged 13 years or younger (DSM IV, 1994)), exhibitionism (exposing one's genitals to a stranger in public - e.g., indecent exposure), fetishism (aroused by nonliving objects, such as underwear, shoes, etc.--code positive if the offender has collected fetish items such as women's underwear, bras, stockings, shoes, boots, or other clothing; if evidence suggests that the offender masturbates while holding, rubbing, or smelling a fetish item; or if evidence suggests that the offender asks a sexual partner to wear a fetish item during sexual encounters. Do not code positive if the fetish is limited to clothing the offender uses in cross-dressing. In this case, code positive for transvestic fetishism (p. 526)), frotteurism (inappropriate rubbing or touching of nonconsenting persons), sexual sadism (becoming sexually aroused by inflicting actual psychological and/or physical suffering on a victim - e.g., torture, mutilation, strangulation, beating, electrical shocks, stabbing, humiliation, etc.--code positive if the offender engaged in this behavior with the victim or other persons), sexual masochism (act of being humiliated, bound, or otherwise made to suffer--code positive if the offender engaged in this behavior with the victim or other persons), transvestic fetishism (aroused by engaging in cross-dressing), voyeurism ("peeping," or watching an unsuspecting person who is naked, disrobing, or having sex), and those listed under the "not otherwise specified" category, including telephone scatologia (obscene phone calls), necrophilia (sex with deceased individuals--code positive if offender engaged in this behavior with the victim's body), and zoophilia (sex with animals).

[Variable Name: PEDOPHIL]				
(7) Pedophilia	Yes	No	Unable to determine	
[Variable Name: EXHIBIT]				
(8) Exhibitionism	Yes	No	Unable to determine	
[Variable Name: FETISH]				
(9) Fetishism	Yes	No	Unable to determine	
[Variable Name: FROTTEUR]				
(10) Frotteurism	Yes	No	Unable to determine	
[Variable Name: SADISM]				
(11) Sexual Sadism	Yes	No	Unable to determine	
[Variable Name: MASOCHSM]				
(12) Sexual Masochism	Yes	No	Unable to determine	
[Variable Name: TRFETISH]				
(13) Transvestic Fetishism	Yes	No	Unable to determine	

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[Variable Name: VOYEUR]			
(14) Voyeurism	Yes	No	Unable to determine
[Variable Name: TELESCAT]			
(15) Telephone Scatalogia	Yes	No	Unable to determine
[Variable Name: NECROPHL]			
(16) Necrophilia	Yes	No	Unable to determine
[Variable Name: ZOOPHIL]			
(17) Zoophilia	Yes	No	Unable to determine

Notes:

[Variable Name: NUMVICTS]

(18) Record the total number of the perpetrator's sex offense victims (both adults and children), excluding the prostitute homicide victim currently under study (consult criminal history and police reports). Enter "0" if no victims and "99" if unable to determine:

Total number of sex offense victims: _____

("Total number of sex offense victims" is defined to encompass the total number of identified victims from police reports for all of the offender's sex-related arrests/charges and excluding all convictions, listed in Questions #3 and #4 above, including rape, sexual assault, pedophilia/child molestation, other paraphilia-related arrests, such as exhibitionism, voyeurism, frottage, burglaries involving the theft of fetish items, and sexual sadism). **Note:** For each offense, which might include multiple arrests/charges, count each individual victim only once so as to avoid erroneously inflating the total number of victims:

Example: In 1984 the offender was arrested and subsequently convicted for molesting an 8 year old boy. In 1986 he was arrested on four charges, endangering the welfare of a minor and child molestation, two counts each for the two 9 year-old male victims he assaulted. He was subsequently convicted on all counts. In 1995 he was arrested for the attempted abduction of a 22 year old female. In 1997 he was arrested and convicted for the murder of the 49 year old female prostitute victim currently under study. In this case the total number of sex offense victims is "4" (the 8 year-old boy, the two 9 year-old males, and the 22 year old female). **Note:** The 49 year-old prostitute victim was excluded from the count because her death constitutes the index offense, which has also been omitted from the aforementioned items addressing adult-, child-, and paraphilia-related sexual offenses.

[Variable Name: VICTTYPE]

(19) Does the offender have sexual offenses involving both adult and child victims excluding the prostitute homicide victim currently under study?

Circle: Yes No Unable to determine

("Children" are defined to be victims who have not yet reached their 18th birthday at the time of

the offense (18 U.S.C. § 2422, 2423 (1999)). Adults are defined to be victims who are 18 years of age or older at the time of the offense. Code positive if Questions #3 and #4 have been endorsed above, reflecting both adult and child sexual offense convictions).

[Variable Name: STRANGER]

(20) Does the offender have sexual offenses involving stranger victims, excluding the prostitute homicide victim currently under study?

Circle: Yes No Unable to determine

(A "stranger" is "someone who ha[s] no real relationship with the offender prior to the offense (less than that of an acquaintance)" using a definition provided by Hanson (1997, p. 6)).

[Summary Variable Name: SOTYPES - will be calculated by computer]

(21) How many different types of sexual offenses has the offender committed (check all categories that apply):

(Code positive for "sexual offenses involving adult victims," "sexual offenses involving child victims," and "paraphilia-related offenses" if adult, child, and paraphilia-related sexual offense arrests/charges, respectively, have been documented in Questions #3 and #4 above).

"Paraphilia-related offenses (excluding pedophilia)" include any arrests/charges for sexual offenses stemming from the offender's paraphiliac interests, documented in Questions #8 through #17 above, excluding pedophilia, which is accounted for in the "sexual offenses involving child victims" category. According to the DSM IV (1994), a paraphilia encompasses recurrent, intense sexual urges, fantasies, or behaviors generally involving nonhuman objects, the suffering or humiliation of the individual and his/her partner or children or other nonconsenting individuals (pp. 522-523). In this regard, using the legal inclusion criteria described by Hanson (1997) and Quinsey, Rice, & Harris (1995), "paraphilia-related offenses" includes arrests/charges for DSM IV paraphilias, such as exhibitionism (exposing one's genitals to a stranger in public - e.g., indecent exposure), frotteurism (inappropriate rubbing or touching of nonconsenting persons), voyeurism ("peeping," or watching an unsuspecting person who is naked, disrobing, or having sex), burglaries involving the theft of fetish items (e.g., stealing nonliving items, such as underwear, which may be sexually arousing, fulfill a sexual urge, and/or be part of a sexual fantasy), and sexual sadism (becoming sexually aroused by inflicting actual psychological and/or physical suffering on a victim - e.g., torture, mutilation, strangulation, beating, electrical shocks, stabbing, humiliation, etc.). Other relevant paraphilias listed under the DSM IV's "not otherwise specified" category include telephone scatalogia (making obscene phone calls), necrophilia (having sex with deceased individuals), and zoophilia (having sex with animals).

[Variable Name: ADVICT]

_____ sexual offenses involving adult victims (e.g., rape, sexual assault, and attempts of these offenses)

[Variable Name: CHLDVICT]

_____ sexual offenses involving child victims (e.g., pedophilia-related offenses, child molestation, child rape, exposure of genitals to children, and attempts of these offenses)

[Variable Name: PARATYPE]

_____ paraphilia-related offenses (e.g., voyeurism, exhibitionism, and attempts of these offenses, excluding pedophilia)

[Variable Name: RELATION]

(22) Victim's Relationship to Offender (choose one):

(Code from VICAP (1998) Form, Item #53, police reports, and offender and witness statements)

_____ related (As defined by Hanson (1997), "related" includes current and former spouses (both legally married and common-law relationships) (p. 31); the "full range of biological and step relations," (p. 31), namely, "those family members who are too closely related to be married" (p. 6), including parents, siblings, biological children, grandchildren, nieces, nephews, cousins, and in-laws (pp. 6, 31); and cases involving the victim/offender living together as family members (e.g., foster child/parent) (p. 31)).

_____ knew each other/acquainted ("Knew each other/acquainted" includes unmarried, current/former dating relationships, friendships, being neighbors, co-worker relationships, employee/employer relationships (to include male pimp/female prostitute relationship), customer relationships (i.e., in this case, defined to be at least one encounter between the perpetrator and victim prior to the fatal one under study), and other forms of acquaintance relationships).

_____ stranger ("Stranger," as defined by Hanson (1997), is defined to be "someone who had no real relationship with the offender prior to the offense (less than that of an acquaintance)" (p. 31)).

_____ unable to determine

[Variable Name: PERPAGE]

(23) Record the perpetrator's age at the time he killed the victim. Enter "99" if unable to determine:

(Code from VICAP (1998) Form, Item # 43a or from available reports)

Perpetrator's Age at Time of Murder: _____

[Variable Name: PERPRACE]

(24) What is the race of the perpetrator?

(Code from VICAP (1998) Form, Item # 41 or from police reports)

_____ African-American/Black	_____ Asian/Oriental
_____ Caucasian	_____ Hispanic
_____ Native American/Alaskan Native	_____ Unable to determine
_____ Other (list) _____	

[Variable Name: MASTATUS]

(25) Indicate the perpetrator's marital status and living situation at the time of the homicide (choose one):

(Code from police reports and offender and witness statements)

("Single" is defined to include persons who are never married, divorced, or widowed.

"Separated" includes those persons separated legally, by choice, or due to marital problems (Bureau of Labor Statistics, 2000).

_____ married/common law wife

_____ single (never married, divorced, widowed), living with female or male partner/significant other

_____ single (never married, divorced, widowed), living alone (includes having own apartment in house, building)

_____ single (never married, divorced, widowed), living with parents or family members

_____ single (never married, divorced, widowed), living with friend(s)/acquaintance(s)

- _____ separated (legally, by choice, or due to marital problems), living with female or male partner/significant other
- _____ separated (legally, by choice, or due to marital problems), living alone (includes having own apartment in house, building)
- _____ separated (legally, by choice, or due to marital problems), living with parents or family members
- _____ separated (legally, by choice, or due to marital problems), living with friend(s)/acquaintance(s)
- _____ unable to determine

[Variable Name: PHOMLESS]

(26) Was the perpetrator homeless at the time of the homicide?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Homeless" is defined to be residing on the street, residing in a homeless shelter/boarding home, travelling by freight train/sleeping in rail yards, providing sexual services in a crack house in exchange for the opportunity to live there, or otherwise having inadequate or nonexistent financial and/or welfare support to live in one's own dwelling).

[Variable Name: ADDRNUM]

(27) Including the last known address (excluding current place of incarceration), record the number locations (both between areas and within an area) the offender has resided in during the five (5) years prior to the date of arrest. Enter "99" if unable to determine:

(Code from VICAP (1998) Form, Item #50 as well as police reports, probation/parole records, and offender and witness statements)

Number of locations resided in during the five (5) years prior to arrest date: _____

Example: For instance, the offender, who lives in Las Vegas, NV, is arrested on July 17, 1997 by the Las Vegas Police Department. The investigation reveals that the offender moved to the Las Vegas address in May, 1997 after murdering a prostitute in Reno, NV, where he previously lived. The offender admitted that he left Reno, fearing that he would be caught by the police. In 1995, the offender lived in Cheyenne, WY prior to moving to Reno in 1996. Before this, he lived in Lincoln, NE between 1985 and 1995. In this case, the offender has three (3) documented moves occurring between July, 1997 and the previous five (5) years (from July, 1992). Specifically, the offender moved from Lincoln to Cheyenne in 1995; from Cheyenne to Reno in 1996; and from Reno to Las Vegas in May, 1997.

[Variable Name: EVADEPD]

(28) Is there evidence that the offender changed addresses/moved to evade law enforcement detection; to escape arrest; and/or to avoid actual or perceived law enforcement pressure?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(Code positive if evidence exists, suggesting that the offender changed his address/moved after committing the homicide under study (or another murder) to evade police detection; to escape

arrest; and/or to otherwise avoid actual or perceived law enforcement pressure, as described by Ressler et al. (1988)).

[Variable Name: PERPJOB]

(29) What is the perpetrator's principal occupation at the time of the homicide? (Choose one):

(Code from VICAP (1998) Form, Item #'s 51 and 52, police reports, and offender and witness statements)

("Principal occupation" is defined to be that particular work activity - either licit or illicit - to which the offender dedicates the most time and/or which produces the greatest amount of personal income for the offender. For instance, in the case of an offender who has a low-paying cover job, but who earns considerable income illegally dealing drugs, one would endorse "involved in drug trafficking" as the offender's principal occupation. In cases where an offender has involvement in multiple illicit activities (e.g., a pimp who also deals drugs) where income and time commitment are unknown, try to select the activity involving the most responsibility (i.e., supervising others, making decisions for a group, etc.). **Note: In all cases, if the offender is the victim's pimp, code positive for this item, as it most accurately represents the homicide's intimate nature.**

_____ Involved in drug trafficking (e.g., self-employed drug distributor, working for drug dealer, manufacturing drugs, gang member, etc.)

_____ Pimp (for victim)

_____ Pimp (not for victim)

_____ Involved in criminal activity other than drug trafficking and prostitution (e.g., robbery, racketeering, extortion, illegal weapons sales, stolen automobiles/merchandise, counterfeiting, smuggling goods, financial crimes, etc.)

_____ Unemployed

_____ Professional (e.g., lawyer, doctor, accountant)

_____ Skilled (e.g., electrician, plumber, painter, truck driver)

_____ Unskilled (e.g., laborer, janitor, trash collector, piecework)

_____ Military

_____ Police/Fire

_____ Taxi Driver

_____ Other (list): _____

_____ Unable to determine

[Variable Name: TRAVELER]

(30) Was the perpetrator a traveler or tourist in the victim's area at the time of the homicide?

Circle: Yes No Unable to determine

(A "traveler" or "tourist" is defined to be a nonresident of the victim's area, who is there for reasons of business (e.g., attending a convention, meeting with a business client), recreation, or who is passing through/transiting the area to another destination (e.g., truck driver, military personnel) at the time of the homicide).

Notes:

[Variable Name: PERPDRUG]

(31) Is the perpetrator a known or suspected drug user (excluding alcohol)?

(Code from VICAP (1998) Form, Item #52, police reports, toxicology reports, and offender and witness statements)

Circle: Yes No Unable to determine

("Known or suspected drug use" is defined to be documentation of the offender's drug habit through such evidence as arrests for drug possession and/or possession of drug-related paraphernalia; toxicology and police reports; the offender's own admission of a drug addiction; corroboration from interviewed witnesses, including knowledge that the offender partakes in drug binges (i.e., extended periods of drug use), engages in frequent purchases for self-use, and frequents areas (e.g., crack houses) where drugs are being ingested).

[Variable Name: PPOSSCHG]

(32) List the number of the perpetrator's arrests/charges for drug possession and/or possession of drug-related paraphernalia, if any. Exclude all convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine:

Number of possession arrests/charges: _____

[Variable Name: PDISTCHG]

(33) List the number of the perpetrator's arrests/charges for drug distribution and/or manufacture, if any. Exclude all convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine:

Number of distribution and/or manufacture arrests/charges: _____

[Variable Name: POORWORK]

(34) Does the offender have an unsteady employment record?

(Code from VICAP (1998) Form, Item #51 and file documentation, such as probation and parole records)

(Using criteria described by Hare (1991), code positive for "unsteady employment record" if the offender's file documentation, such as probation and parole reports, evidences a pattern of irresponsible work behavior. This includes changing or quitting jobs and/or being terminated from employment for such reasons as poor attendance, careless or sloppy work performance below ability level, misbehavior, and insubordination).

Circle: Yes No Unable to determine

[Variable Name: NUMJOBS]

(35) Beginning with and including the job held by the offender at the time of arrest, record the total number of jobs held by the offender during the previous four (4) years. Enter "0" if no jobs and "99" if unable to determine. Exclude jobs held while incarcerated for the homicide under study:

(Code from VICAP (1998) Form, Item #51 and file documentation, such as probation and parole records)

Number of jobs held by offender: _____

Example: *The offender was arrested in May, 1996 for the murder of a 21 year-old prostitute. At this time, he was employed as a dock worker in Seattle. Prior to this, the offender worked as a warehouse watchman from February, 1994 to May, 1995. He worked as a construction laborer from June, 1991 to July, 1992. Before June, 1991, records indicate that he worked in a fish processing plant. In this case, the offender has worked three (3) jobs in the four (4) years prior to the time of arrest (beginning in May, 1992), to include the position held at the time of arrest. The June, 1991 job is excluded because it falls outside of the four-year time interval of interest.*

[Variable Name: AUTOUSE]

(36) Did the offender use a vehicle in the commission of the crime?

(Code from VICAP (1998) Form, Item #91a and police reports)

("Using a vehicle" encompasses any utilization of a vehicle by the perpetrator during the encounter, abduction, murder, and/or body disposal phases of the crime).

Circle: Yes No Unable to determine

[Variable Name: AUTODESC]

(37) What is the description of the vehicle?

(Code from VICAP (1998) Form, Item #91f and police reports)

_____ newer/late model

(A "newer/late model" is defined to be a vehicle with a manufacture date which is the same as the year of the victim's death or up to a maximum of 3 calendar years prior to the year of death. For instance, for a victim killed in 1999, "newer/late model" vehicles would encompass the years 1999, 1998, 1997, and 1996).

_____ older model

(An "older model" is defined to be a vehicle with a manufacture date 4 or more years prior to the year of the victim's death. For instance, for a victim killed in 1985, "older model" vehicles would have manufacture years prior to and including 1981).

_____ not applicable

_____ unable to determine

[Variable Name: AUTOCOND]

(38) What is the condition of the vehicle?

(Code from VICAP (1998) Form, Item #91k and police reports)

_____ WELL-MAINTAINED

(A "well-maintained" vehicle is one that looks "new" or "sharp." Such a vehicle might have a shiny, washed appearance, be polished or waxed, have little or no visible rust or exterior damage, and have a clean interior).

_____ POORLY MAINTAINED

(A "poorly maintained" vehicle is one that appears "beat up," possibly exhibiting rust, peeling paint, missing or dangling parts, patched or unpainted exterior portions, unrepaired accident damage, faded paint, and a ripped or dirty interior).

_____ NEITHER WELL-MAINTAINED NOR POORLY MAINTAINED

(Vehicles in this category are defined to be nondescript, possibly evidencing "average wear-and-tear" and appearing neither new nor old to an observer).

_____ not applicable

_____ unable to determine

Record the perpetrator's Psychopathy Check List (PCL-R; Hare, 1991) item, adjusted, and total sum scores:

(Conduct review of the perpetrator's file; complete the PCL-R form; enter the corresponding item scores ("0," "1," "2," "99 = X,") and record the adjusted and total sum scores:

	<u>Circle Score for Each Item:</u>			
[Variable Name: GLIBNESS] (39) Glibness/Superficial Charm	0	1	2	X
[Variable Name: GRANDIOS] (40) Grandiose Sense of Self Worth	0	1	2	X
[Variable Name: STIMULAT] (41) Need for Stimulation/Proneness to Boredom	0	1	2	X
[Variable Name: LYING] (42) Pathological Lying	0	1	2	X
[Variable Name: CONNING] (43) Conning/Manipulative	0	1	2	X
[Variable Name: REMORSE] (44) Lack of Remorse or Guilt	0	1	2	X
[Variable Name: LOAFFECT] (45) Shallow Affect	0	1	2	X
[Variable Name: CALLOUS] (46) Callous/Lack of Empathy	0	1	2	X
[Variable Name: PARASIT] (47) Parasitic Lifestyle	0	1	2	X
[Variable Name: POORCTRL] (48) Poor Behavioral Controls	0	1	2	X
[Variable Name: PROMISCU] (49) Promiscuous Sexual Behavior	0	1	2	X
[Variable Name: HXOFFPROB] (50) Early Behavioral Problems	0	1	2	X
[Variable Name: LACKGOAL] (51) Lack of Realistic, Long-term Goals	0	1	2	X
[Variable Name: IMPULSIV] (52) Impulsivity	0	1	2	X
[Variable Name: IRRESPON] (53) Irresponsibility	0	1	2	X
[Variable Name: FAILACPT] (54) Failure to Accept Responsibility for Own Actions	0	1	2	X

	Victim I.D.# _____			
	Perpetrator I.D.# _____			
[Variable Name: HIMARRGE] (55) Many Short-term Marital Relationships	0	1	2	X
[Variable Name: JUVDELIN] (56) Juvenile Delinquency	0	1	2	X
[Variable Name: REVOCAT] (57) Revocation of Conditional Release	0	1	2	X
[Variable Name: VERSATIL] (58) Criminal Versatility	0	1	2	X
[Variable Name: PCLFACT1] (59) Factor 1 Adjusted Sum Score: (enter "99" if unable to determine or invalid profile)				_____
[Variable Name: PCLFACT2] (60) Factor 2 Adjusted Sum Score: (enter "99" if unable to determine or invalid profile)				_____
[Variable Name: PCLTOTAL] (61) Total Adjusted Sum Score: (enter "99" if unable to determine or invalid profile)				_____

For the following series of questions, you will be asked to record arrest/charge totals by crime category, excluding all convictions. Unless otherwise specified, count adult and juvenile offenses. *For those crimes involving multiple, legally documented arrests/charges across crime categories (e.g., a drunken offender who commits a robbery, pistol-whips, and then rapes an adult female victim), record each of the various arrest charges in their appropriate category (e.g., using the above hypothetical example, alcohol-related, robbery, and sexual assault charges would be counted among the "nonsex offense arrests/charges," "sexual offense arrests/charges," "nonsexual violent offense arrests/charges," "property offense arrests/charges," and "arrests/charges involving alcohol" categories, respectively).*

[Variable Name: NONSXCHG]
(62) Record the number of the perpetrator's nonsex offense arrests/charges, excluding any associated with the prostitute homicide under examination as well as all convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine: _____

("Nonsex offense arrests/charges" encompass all other arrests/charges for nonsex crimes, to include probation/parole violations, committed by the offender. However, do count those nonsex offenses that are committed along with sexual and other types of offenses. For instance, in the hypothetical case of an offender who burglarizes a home, surprises a female inhabitant, and then sexually assaults her, one would include the breaking-and-entering and robbery charges as "nonsex offenses").

[Variable Name: VIOLNCHG]

(63) Record the number of the perpetrator's nonsexual violent offense arrests/charges, excluding any associated with the prostitute homicide under examination as well as all convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine: _____

("Violent offense arrests/charges" will be defined as per Hanson and Bussiere (1998), to encompass all nonsexual offense arrests/charges involving a violent component, including homicides, robberies, assaults, bar fights, terroristic threats, etc.). Additionally, do count those nonsexual violent arrests/charges that are committed along with sexual and other types of offenses. For instance, in the case of an offender who robs a female victim at gunpoint, pistol-whips her, and then rapes her, one would exclude the rape charge, but would count charges for armed robbery, assault and battery with a dangerous weapon, etc.).

[Variable Name: JUVNSOFF]

(64) Does the offender have a juvenile nonsexual offense history?

Circle: Yes No Unable to determine

("Juvenile" is defined to be an individual who has not yet reached their 18th birthday at the time of the offense, with persons aged 18 years or older being defined as adults (18 U.S.C. § 2422, 2423 (1999)). Code positive if the offender has one or more officially documented arrests/charges, violent and/or nonviolent, for juvenile delinquency, committed below the age of 18 years. Exclude all sexual crimes committed as a juvenile).

[Variable Name: PROPERTY]

(65) Record the number of the perpetrator's property offense arrests/charges, excluding any associated with the prostitute homicide under examination as well as all convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine: _____

("Property offense arrests/charges," as defined by De Sola (1982), include arrests/charges for crimes such as grand theft auto, burglary, larceny, etc. Include those property offenses co-occurring with all other categories of offenses. For instance, in the case of arson committed to eliminate a non-prostitute homicide victim's body, one would count the arson charge as a "property offense").

[Variable Name: ETOHCHRG]

(66) Record the number of the perpetrator's arrests/charges involving alcohol, excluding any associated with the prostitute homicide under examination as well as all convictions (consult criminal history). Enter "0" if no arrests/charges and "99" if unable to determine: _____

("Arrests/charges involving alcohol" include arrests/charges for driving-while-intoxicated (DWI), driving-under-the-influence (DUI), drunk-driving accidents, alcohol-related domestic violence charges, public drinking incidents, and any other alcohol-related arrests/charges. Additionally, include those alcohol-related offenses co-occurring with all other categories of offenses. For instance, in the hypothetical case of an offender who is arrested for assaulting his wife while intoxicated, one would count any alcohol-related charges).

Victim I.D.# _____
Perpetrator I.D.# _____

[Variable Name: PCODEINE]

(75) Codeine (morphine precursor) Yes No Unable to determine

[Variable Name: PHEROIN]

(76) Heroin Yes No Unable to determine

[Variable Name: PMORPHIN]

(77) Morphine (heroin and codeine metabolite)
Yes No Unable to determine

DEPRESSANTS:

[Variable Name: PETHOH]

(78) Ethanol (Alcohol) Yes No Unable to determine

[Variable Name: PBARBITU]

(79) Barbituates and Other Sedative Hypnotics (e.g., amobarbital (Amytal); phenobarbital (Luminal); pentobarbital (Nembutal); secobarbital (Seconal); glutethimide (Doriden); methaqualone (Quaalude; Mandrax) Yes No Unable to determine

[Variable Name: PBENZODIA]

(80) Benzodiazepines and Other Antianxiety Agents (e.g., alprazolam (Xanax); diazepam (Valium); chlordiazepoxide (Librium); lorazepam (Ativan); Buspirone (BuSpar –a non-benzodiazepine) Yes No Unable to determine

[Variable Name: PSCHEDL1]

(81) Other Illicit Schedule I drugs Yes No Unable to determine

("Other illicit Schedule I drugs" includes all other drugs of abuse, excluding those above, listed under "Schedule I" of the Controlled Substances Act. These are drugs with a high potential for abuse; with no approved medical use in the United States; and having a "lack of accepted safety for use...under medical supervision (Controlled Substances Act, 2000, p. 6). Other examples of Schedule I drugs include opiates, opiate derivatives (other than heroin, morphine, and codeine), hallucinogens (e.g., LSD, mescaline, peyote, marijuana, PCP, psilocybin, MDA, MDMA/XTC/ Ecstasy, GHB, DMT, hashish, tetrahydrocannabinol), and methaqualone (Quallude). Please refer to the provided NIDA "Commonly Abused Drugs" and Controlled Substances Act handouts for lists of Schedule I drugs.

[Variable Name: POTRSCH]

(82) Other Schedule II, III, & IV drugs Yes No Unable to determine

("Other Schedule II, III, & IV drugs" includes drugs of abuse, excluding those above, listed under "Schedules II, III, & IV" of the Controlled Substances Act. Schedule II drugs have a high potential for abuse; have an accepted medical use in treatment or medical use with severe restrictions; and their abuse may lead to severe psychological and physical dependence (Controlled Substances Act, 2000, p. 6). Schedule II drugs are only available by an unrefillable prescription and require an order form (NIDA, 2000, p. 3). Other Schedule II drugs include methamphetamine, opium, and opiates (e.g., fentanyl, methadone). Schedule III drugs have less abuse potential than those listed under Schedules I and II; have an accepted medical use in

treatment in the United States; and abuse may lead to moderate/low physical dependence or high psychological dependence (Controlled Substances Act, 2000, pp. 6-7). Examples of Schedule III drugs include stimulants (e.g., amphetamine, methylphenidate (Ritalin)), depressants (e.g., barbituric acid, glutethimide), nalorphine, and anabolic steroids. Schedule IV drugs have a low abuse potential as compared to the drugs listed under Schedule III; have an accepted medical use in treatment in the United States; and their abuse may lead to "limited physical dependence or psychological dependence" as compared to the drugs in Schedule III (Controlled Substances Act, 2000, p. 7). Schedule IV drugs include barbital, chloral hydrate, and phenobarbital. Please refer to the provided NIDA "Commonly Abused Drugs" and Controlled Substances Act handouts for lists of Schedule II, III, and IV drugs.

[Variable Name: PHXETOH]

(83) Does the offender have a history of alcohol abuse?

(Code from file review)

Circle: Yes No Unable to determine

(Code positive for "history of alcohol abuse" if there exists documentation in the perpetrator's file of consistent or problematic drinking over the course of his lifetime, such as involvement in Alcoholics Anonymous, alcohol-related hospitalizations, a history of alcohol-related arrests/charges (see Question #66 above), evidence gleaned from medical, psychological, and police records, the offender's own admission of this problem, and statements from witnesses).

[Variable Name: PHXDRUGS]

(84) Does the offender have a history of drug abuse other than alcohol?

(Code from file review)

Circle: Yes No Unable to determine

(Code positive for "history of drug abuse other than alcohol" if there exists documentation in the perpetrator's file of the abuse of illicit substances and/or the abuse/misuse of licit substances (e.g., pain medication, benzodiazepines) over the course of his lifetime. Evidence of a drug abuse history might include involvement in Narcotics Anonymous and drug treatment programs, being a methadone recipient, drug-related hospitalizations (e.g., overdoses and rehabilitation), a history of drug-related possession arrests (see Question #32 above), evidence gleaned from medical, psychological, and police records, the offender's own admission of this problem, and statements from witnesses).

[Variable Name: FRQSTROL]

(85) Did the offender frequent known prostitution stroll areas?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(A "stroll area" is defined to be a geographic vice area, known by both customers and law enforcement officials, where street prostitutes work or, literally, "walk" (French, 1993). The stroll area, according to French (1993), is usually located one block away from a major road. It may be situated in a "red light district," a low income area, a high crime area, etc.).

[Variable Name: FRQNSTRLL]

(86) Did the offender frequent prostitutes working in nonstroll/neighborhood areas?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(A "nonstroll/neighborhood area," according to the FBI, is a residential location - likely

proximate to drug distribution and usage sources, such as crack houses - where prostitutes work and "hang out," servicing mostly foot traffic customers. This location is not an established vice or stroll area known to both customers and the police. It is hypothesized that the victim's affinity for this particular neighborhood work area is due to the ready availability of illicit drugs).

[Variable Name: FREQCRAK]

(87) Did the offender frequent crack houses/drug dens for sex? (This involves actually engaging in sexual activity within these buildings).

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

[Variable Name: REGCUSTM]

(88) Was the offender a regular customer of the victim?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Regular customer" is defined to be someone who solicited the victim for sexual services on at least two different occasions. If this criterion is unable to be determined, code positive for "regular customer" if the offender was known by the victim by name; was someone the victim talked about with peers; or, especially, was someone with whom the victim loosened established prostitute-customer boundaries, such as engaging in sex with this individual without a condom, kissing him, or providing usually taboo sexual services, such as anal intercourse).

[Variable Name: OTRPROST]

(89) In addition to the victim, did the offender solicit other prostitutes for sexual services during his solicitation visits (i.e., because he desired "variety" during his encounters)?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

[Variable Name: ACTINGOUT]

(90) Does evidence indicate that the offender engaged in acting-out behaviors with other prostitutes on previous occasions, resulting in his being identified/remembered as a violent, sexually aggressive, and/or abusive customer, before murdering the victim under study?

(Code from police reports and offender and witness interviews, especially accounts of other prostitutes)

Circle: Yes No Unable to determine

("Acting out behaviors" encompass acts of physical (e.g., punching, slapping, hitting, kicking, strangling), sexual (e.g., attempted rape, making attempts to have kinky sex (e.g., anal sex, sex while attempting to strangle victim), and/or verbal (e.g., degrading the prostitute, humiliating her, yelling, threatening her with harm) aggression and/or abuse that have occurred with at least one other female prostitute victim. These violent, abusive, and sexually aggressive behaviors are not part of any agreed-upon contract between the prostitute and the offender. In actual prostitute homicide cases, some of these women have escaped from this violent interaction and have reported the perpetrator's aggressive actions).

Precrime Actions/Planning of Offense:

[Variable Name: STALKING]

(91) Did the offender "cruise for the victim" in a vehicle or otherwise stalk her before the homicide?

(Code from VICAP (1998) Form, Item #54 "By Surprise" Section, police reports, and offender and witness statements)

Circle: Yes No Unable to determine

("Cruise for the victim" is defined to be the offender's means of victim selection using a vehicle, which may involve driving around until he finds someone who satisfies his selection criteria (e.g., victim is alone, appears vulnerable, has certain physical characteristics, matches his fantasy, etc.) (Ressler et al., 1988). Similarly, "stalking" refers to the offender seeking out, selecting, and following his victim by foot prior to the homicide. Ressler et al. (1988) have also described this behavior by some homicide offenders they studied as "hunting" for potential victims).

[Variable Name: KNOWAREA]

(92) Did the offender bring the victim to a preselected area?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(A "preselected area" is defined to be a location previously examined and chosen by the perpetrator to facilitate his crime commission, possibly, but not always, a place familiar to him. At this location the offender would attack and, possibly, murder the victim. Additionally, the victim's body might also be disposed of at this same site).

[Variable Name: RESTRAIN]

(93) Did the offender restrain the victim during the offense?

(Code from VICAP (1998) Form, Item #72a or police and autopsy reports and offender statements)

Circle: Yes No Unable to determine

("Restraints" include ropes, wire, twine, leather thongs, clothing, handcuffs, thumbcuffs, pantyhose, tape, chains, etc.)

[Variable Name: TOOKTIES]

(94) The evidence suggests that the restraints were.....(check one):

(Code from VICAP (1998) Form, Item #72b or police reports and offender statements):

- _____ brought by the offender
- _____ opportunity items found by the offender at the crime scene
- _____ items were both brought and found by the offender
- _____ not applicable
- _____ unable to determine

[Variable Name: EXCESTIE]

(95) Were the bindings used to restrain the victim excessive?

(Code from VICAP (1991) Form, Item #145; VICAP (1998) Form, Narrative Section; police and autopsy reports; and crime scene photos)

Circle: Yes No Not Applicable Unable to determine

("Excessive" is defined to be much more restraining than would be necessary to control the victim's body movements. Bound hands and/or feet are not excessive, as they serve the function to prohibit the movement of the hands and/or feet. The excessive use of restraints has been described by the FBI as a "visual experience" (M. A. Hiltz & W. D. Lord, personal communication, June 19, 2000), where an examination of the crime scene photographs prompts an obvious, visceral reaction that the restraints binding the victim "are excessive," defined here to be anything beyond their functional use described above).

[Variable Name: OTHRPLAN]

(96) Did the offender engage in other planning activities?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Other planning activities" include evidence that the offender studied police procedures, collected/studied weapons, created torture devices/kits, altered his vehicles to facilitate abduction, wore gloves during the offense, possessed burial materials such as limestone, a shovel, etc. (Ressler et al., 1988)).

[Variable Name: PRIORACT]

(97) Did the offender commit a criminal/violent offense in the days prior to the homicide?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(Code positive if the offender committed any sexual, violent, or property (e.g., theft, burglary, etc.) offense - including arrests/charges and reports of incidents committed by the offender for which he was not arrested or investigated - within a period of seven (7) days prior to committing the homicide (Ressler et al., 1988)).

Prostitute Homicide Questionnaire (PHQ)

Jonathan A. Dudek, M.A. and Christine Maguth Nezu, Ph.D., ABPP © 2000

Situational/Interactional Factors

[Summary Variable Name: STRESSOR – will be calculated by computer]

Was the offender subjected to any of the following precipitating emotional stressors prior to the homicidal encounter with the victim under study? Answer all questions, and for positively endorsed items, estimate the initial onset of the stressor using the time intervals provided.

(Code from police reports and offender and witness statements)

(“Precipitating emotional stressors,” using descriptions provided by Hall (1996) and Ressler et al. (1988), are defined to be events or situations which may occur immediately prior to the homicide, generating negative emotions or affect within the offender (e.g., make him feel angry, vengeful, anxious, depressed, etc.). Ressler et al. (1988) report that these stressors may also be comprised of ongoing events or situations (e.g., work pressure and demands, divorce proceedings, etc.) as well as past events or situations that continue to generate negative affect in the perpetrator (e.g., anger toward an employer after being fired three months ago). These precipitating personal stressors will be cited by the offender as having contributed to his homicidal behavior toward the victim. Exclude any stressors/triggers that occur during the actual offender-victim interaction, as these are examined in subsequent questions).

***Example:** The offender murdered the prostitute victim under study on August 10, 1995. His confession indicates that he had a “short fuse” at the time, having argued with a male friend about borrowed money earlier that day. The offender also admitted to having heroin withdrawal symptoms (e.g., feeling irritable and having sense of general malaise) on August 10th, having run out of money to buy drugs earlier that day. Lastly, the offender complained that a leg injury he had sustained as a result of a gunshot in May, 1992 had been “flaring up” on the day of the homicide, further “pissing him off.” In this situation, the rater should code positive for “prior conflict with male” with an onset of “0 to 24 hours.” The withdrawal symptoms should be coded and listed under “other (describe),” also with an onset of “0 to 24 hours.” The gunshot would should be coded under “physical injury” with an onset of “>6 months.”*

[Variable Name: CNFLTVIC]

(1) prior conflict with victim 0 to 24 hrs >1 and ≤ 3 days >3 and ≤7 days
 >7 days and ≤ 1 month >1 month and ≤ 3 months >3 months and ≤ 6 months
 >6 months No Unable to determine

[Variable Name: CNFLTOTR]

(2) prior conflict with female other than victim 0 to 24 hrs >1 and ≤ 3 days
 >3 and ≤7 days >7 days and ≤ 1 month >1 month and ≤ 3 months
 >3 months and ≤ 6 months >6 months No Unable to determine

[Variable Name: CNFLTMLE]

(3) prior conflict with male 0 to 24 hrs >1 and ≤ 3 days >3 and ≤7 days

Victim I.D.# _____
Perpetrator I.D.# _____

___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: CNFLTPAR]

(4) **parental conflict** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: PTNRPROB]

(5) **marital problems/partner problems** ___ 0 to 24 hrs ___ >1 and ≤ 3 days
___ >3 and ≤ 7 days ___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months
___ >3 months and ≤ 6 months ___ >6 months ___ No ___ Unable to determine

[Variable Name: WORKPROB]

(6) **employment problems** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: CLDBIRTH]

(7) **childbirth** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: PHINJURY]

(8) **physical injury** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: SIGDEATH]

(9) **death of significant person** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: LEGALPRB]

(10) **legal problems** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: MONEYPRB]

(11) **financial problems** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: OTRSTRES]

(12) **other** ___ 0 to 24 hrs ___ >1 and ≤ 3 days ___ >3 and ≤ 7 days
___ >7 days and ≤ 1 month ___ >1 month and ≤ 3 months ___ >3 months and ≤ 6 months
___ >6 months ___ No ___ Unable to determine

[Variable Name: OTRSTRDE]

(13) Please describe the other precipitating emotional stressor: _____

[Variable Name: AROUSAL]

(14) Was the offender in a positive state of arousal prior to committing the homicide?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Positive state of arousal" includes feeling excited, feeling "good," feeling sexually aroused or "turned on," and feeling "pumped-up" (i.e., adrenaline rush). This state has been described by Ressler et al., 1988).

[Variable Name: BOTHDRUG]

(15) Were both the offender and victim ingesting drugs, other than alcohol, at the time of the encounter? (Refer to Victim Characteristics Form, Questions 3 – 14 and Perpetrator Characteristics Form, Questions 68 – 82 for assistance):

(Code positive if evidence exists from such resources as autopsy and police reports and offender and witness statements that both the victim and the offender were each ingesting drugs during their interaction (e.g., during a sex-for-drug exchange in a crack house)).

Circle: Yes No Unable to determine

[Variable Name: BOTHEROH]

(16) Were both the offender and victim ingesting alcohol at the time of the encounter? (Refer to Victim Characteristics Form, Questions 3 – 14 and Perpetrator Characteristics Form, Questions 68 – 82 for assistance):

(Code positive if evidence exists from such resources as autopsy and police reports and offender and witness statements that both the victim and the offender were each ingesting alcohol during their interaction).

Circle: Yes No Unable to determine

[Variable Name: PHYSIOSE]

(17) Was the homicide precipitated by circumstances resulting from the physiological side effects of drug (especially crack cocaine) and/or alcohol use, namely erectile dysfunction, the inability to ejaculate, and decreased sexual interest?

(Code from police and autopsy reports and offender and witness statements).

Circle: Yes No Unable to determine

("Circumstances," as described in Ratner (1993), might include the offender blaming the prostitute for his problems; the prostitute becoming angry over lengthy, vigorous sex; and the prostitute having decreased sexual interest and wanting to be alone, angering the male).

[Variable Name: VDRUGSE]

(18) Was the homicide precipitated by the behavioral side effects of drug (especially crack cocaine) and/or alcohol use on the victim?

(Code from police reports and offender and witness statements).

Circle: Yes No Unable to determine

("Behavioral side effects," as described in Ratner (1993), include disinhibition, aggression, paranoia, and hostility).

[Variable Name: PDRUGSE]

(19) Was the homicide precipitated by the behavioral side effects of drug (especially crack cocaine) and/or alcohol use on the offender?

(Code from police reports and offender and witness statements).

Circle: Yes No Unable to determine

("Behavioral side effects," as described in Ratner (1993), include disinhibition, aggression, paranoia, hostility).

[Variable Name: ARGUCNDM]

(20) Was the homicide precipitated by an argument related to condom use?

(Code from police reports and offender and witness statements).

Circle: Yes No Unable to determine

(Such "arguments" might include the offender insisting on not wearing condom and the prostitute refusing the request or the offender attempting to remove condom during the sex act).

[Variable Name: ARGUDEAL]

(21) Was the homicide precipitated by an argument over what the offender desired and what services the prostitute was willing to perform?

(Code from police reports and offender statements).

Circle: Yes No Unable to determine

(Such "arguments" might result from an offender requesting a form of "kinky" sex, which the prostitute refuses, or from attempts to modify the contract. For instance, during an agreed-upon act of oral sex, the offender requests vaginal sex, which the prostitute only agrees to perform for an added cost, angering him).

[Variable Name: PRIORARG]

(22) Was the homicide precipitated by a prior argument between the prostitute victim and the offender, with the victim returning to her work or "stroll" area, only to be attacked later by a vengeful offender?

(Code from police reports and offender statements).

Circle: Yes No Unable to determine

[Variable Name: SEXABUSE]

(23) Did the offender abuse the victim sexually and/or physically during a sex-for-drug exchange occurring in or around a crack house/drug den, resulting in her death?

(Code from police reports and offender statements).

Circle: Yes No Unable to determine

(The literature (e.g., Ratner, 1993) describes this form of sexual and physical degradation and abuse as a commonplace occurrence in crack houses. Specifically, the offender feels entitled to abuse the prostitute, who is desperate to support her addiction and who will perform any degrading act to obtain drugs or money to buy drugs. For instance, the victim might be forced to perform perverse sex acts or to service numerous male customers).

[Variable Name: SEXABDES]

(24) If "Yes," describe the abuse inflicted upon the prostitute victim: _____

[Variable Name: RESIST]

(25) Did the offender's behavior escalate due to the victim's active resistance?

(Code from police reports and offender statements. If discrepancies exist between the police and offender statements, code using the police report data. This assumes that the offender is more likely to distort the incident, with criminal investigators having a more objective role).

Circle: Yes No Unable to determine

("Active resistance" is defined to be a combative response by the victim, attempts to escape, etc. (Ressler et al., 1988)).

[Variable Name: COMPLNCE]

(26) Did the offender's behavior escalate due to the victim's compliance or passive resistance?

(Code from police reports and offender statements. If discrepancies exist between the police and offender statements, code using the police report data. This assumes that the offender is more likely to distort the incident, with criminal investigators having a more objective role).

Circle: Yes No Unable to determine

("Compliance" in this case pertains to the offender becoming more aggressive pursuant to the victim's obeying his threats and requests. "Passive resistance" might involve the prostitute victim negotiating with the killer, attempting to diffuse the situation by "playing up to him," treating him better, etc. (de Graaf et al., 1995; Ressler et al., 1988)).

[Variable Name: NFANTASY]

(27) Did the offender's behavior escalate because the victim's behavior did not match his fantasy, resulting in death?

(Code from police reports and offender statements).

Circle: Yes No Unable to determine

(In this case, the victim is killed because her responses are not consistent with the killer's deviant fantasies, angering him (Ressler et al., 1988)).

[Variable Name: YFANTASY]

(28) Did the offender's behavior escalate because the victim's behavior was congruent with his fantasy, resulting in death?

(Code from police reports and offender statements).

Circle: Yes No Unable to determine

(In this case, the victim's behavior matches the offender's death fantasy; as such, her death is inevitable (Ressler et al., 1988)).

[Variable Name: SEXROLE]

(29) Did the offender's behavior escalate due to the perceived violation of his own rigid sex role stereotypes?

(Code from police reports and offender statements).

Circle: Yes No Unable to determine

(These "violations of sex role stereotypes" might include the following situations: 1). The offender perceives a provocation by the female victim and escalates (e.g., the prostitute asserts control during the negotiation, angering the offender, who believes this woman "does not know her place"); and 2). The offender believes he can violate the prostitute sexually in any way he pleases, since he has paid for her services, making demands for acts not in the contract. The prostitute may demand more money, while the offender may refuse to pay (Barnard, 1993; Miller & Schwartz, 1995).

Sadistic Fantasy Life:

[Variable Name: SADFNTSY]

(30) Does the offender admit to having sexually sadistic fantasies?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(A "sexually sadistic fantasy," using Prentky et al.'s (1989) definition, is a cognition or daydream involving sadistic and/or sexually violent actions such as murder, rape, torture, pain, humiliation, and/or domination of a victim).

Indicate whether or not there exists any evidence of tangible items and/or behaviors with sexual and/or violent themes, suggesting the presence of an active sexually sadistic fantasy life by the offender? (Respond to all questions):

(Code from VICAP form, where possible, as well as police reports, and offender and witness statements)

[Variable Name: TROPHIES]

(31) possession of trophies/souvenirs

(Code from VICAP (1998) Form, Item #79, police reports, and offender statements)

Circle: Yes No Unable to determine

("Trophies and souvenirs" are items taken from the victim as mementos (souvenirs) or as reminders of the offender's conquest (trophies), as explained by Ressler et al. (1988). These items, which may include photographs of the victim (exclude those taken by the offender, which are included in the last item), jewelry, undergarments, clothing, a driver's license, and body parts, are kept by the offender for reasons other than their monetary value. For instance, they may serve as salient reinforcers of the offender's sexually sadistic fantasies and memories of the event. They may also be tangible evidence of a paraphilia, such as fetishism.)

[Variable Name: PORNOGRA]

(32) possession/use of pornographic media (includes violent and nonviolent forms) and/or solicitation of pornographic establishments

Circle: Yes No Unable to determine

("Pornographic media" includes violent and nonviolent adult magazines, including detective magazines; videotapes/DVD; adult internet web sites; adult television channels; and calls to telephone sex lines. Code positive if there is documented evidence that the offender possesses, or has utilized, these pornographic media. "Soliciting pornographic establishments" includes visiting strip clubs, adult movie theatres, peep shows, adult bookstores, and any other establishments for the purposes of observing or engaging in sexual activity. Code positive if the offender has visited any of these establishments).

[Variable Name: MASTRBTN]

(33) compulsive masturbation to sexually sadistic fantasies

(Code from offender/witness statements, police reports, and psychiatric/psychological records)

Circle: Yes No Unable to determine

(A "sexually sadistic fantasy," using Prentky et al.'s (1989) definition is a cognition or daydream involving sadistic and/or sexually violent actions such as murder, rape, torture, pain, humiliation, and/or domination of a victim. Code positive if there exists any documented evidence that the offender has masturbated to sexually sadistic fantasies).

[Variable Name: BONDAGE]

(34) possession/use of bondage materials

Circle: Yes No Unable to determine

("Bondage," as described by Geberth (1996), is a "masochistic involvement with ligatures, restraints, blindfolds, gags, hoods, or restrictive containers" (p. 838). Other indicators of bondage include whips, chains, leather outfits, etc. used in sadomasochistic sexual practices. According to the DSM IV (1994), sexual masochism, a paraphilia (generally defined to be recurrent, intense sexual urges, fantasies, or behaviors generally involving nonhuman objects, the suffering or humiliation of the individual and his/her partner or children or other nonconsenting individuals (pp. 522-523)), involves being humiliated, bound, or otherwise made to suffer). For additional assistance, refer to the "sexual masochism" item of the Perpetrator Characteristics Form, Question #12, referring to the reports used to code this item positive, if applicable. Code positive if available information suggests that the offender possessed and/or utilized bondage materials for sadomasochistic sex play with a consenting partner. Also, code this item positive as well as "possession of torture devices/kits," listed below, if the offender possessed/used bondage materials as part of a torture kit).

[Variable Name: HASWEAPN]

(35) possession/use of weapons

(Code from VICAP (1998) Form, Item #89)

Circle: Yes No Unable to determine

(Warren et al. (1996, p. 973) found that 75% of their sadistic serial murderer sample (n=20) had "violent theme collections," to include the possession of various types of weapons).

[Variable Name: PARAPHER]

(36) possession/use of police paraphernalia (e.g., handcuffs, mace, badge, uniform, etc.)

(Code from VICAP (1998) Form, Item #54)

Circle: Yes No Unable to determine

[Variable Name: TORTKITS]

(37) possession/use of torture devices/kits (include photographs, videotapes, audiotapes, etc. made by the offender during the course of the homicide)

Circle: Yes No Unable to determine

("Torture devices/kits" include items used by the offender during the homicide under study or items otherwise belonging to him for the purposes of torture. Torture is defined to be any perimortem activity (i.e., committed while the victim is alive) that is intentionally conducted to inflict physical and emotional pain on the victim, such as whipping, burning, cutting, slicing, pulling out hair, removing body parts, biting, asphyxiation to near death, and threatening to kill the victim through verbal and/or physical means (Ressler et al., 1985b). Torture is said to reinforce a sexual sadist's arousal during an attack (Ressler et al., 1985b) and also distances the killer from his victim (Holmes & Holmes, 1996). Torture devices/kits encompass physical means of inflicting pain (e.g., pliers, pins, whips, knives, cigarettes, ligatures, etc.) as well as emotional means of inflicting pain (e.g., tape recording/videotaping/photographing victim). As mentioned above, code this item positive if bondage materials comprise part of the offender's torture kit. Also, for additional assistance, refer to the "sexual sadism" item of the Perpetrator Characteristics Form, Question #11, referring to the reports used to code this item positive, if

applicable).

[Variable Name: SADIACTS]

(38) commission of sexually sadistic acts against prostitutes and others (e.g., partner, spouse)

Circle: Yes No Unable to determine

("Sexually sadistic acts" are defined to be acts of physical, sexual, and/or emotional abuse and torture committed by the offender. Hazelwood, Warren, and Dietz (1993) report that these acts may be documented in filed incident reports of domestic violence against partners or spouses. Similarly, the offender's criminal offense history might document sexually sadistic assaults against prostitute victims).

[Variable Name: SADIAGES]

(39) Describe the items endorsed above:

[Variable Name: FNTSYACT]

(40) Has the offender ever engaged in any criminal actions in public, suggesting or reflecting the acting out of his fantasies?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

(These "criminal actions," or "behavioral try-outs," as described by MacCulloch et al. (1983), might include arrests/charges for sexual offenses and paraphilias such as rape, attempted rape, exhibitionism/indecent exposure, voyeurism, frotteurism, attempted sexual assault/indecent assault, and attempted abduction; thefts of cars, house keys, and fetish burglaries; robberies; assaults; drunk driving; drunk and disorderly charges; and possession of weapons.

For the purposes of this question, code positive if the offender has a criminal record reflecting arrests/charges for any sexual offenses, including DSM IV (1994) paraphilias (e.g., voyeurism, exhibitionism, frotteurism, and fetish burglaries (e.g., stealing underwear)) (See Perpetrator Characteristics Form, Question #'s 3, 4, and 7 - 17). Also code positive if evidence exists (e.g., offender and witness interviews) that the offender engaged in sexual offending behavior but was not arrested. For more ambiguous crimes, such as attempted abduction, drunk driving, possession of weapons, robberies, etc. listed above, only code positive if there exists file evidence, such as offender statements, indicating that these offenses were enacted in support/furtherance of the offender's fantasies).

[Variable Name: KINKYSEX]

(41) Does evidence exist suggesting that the offender made requests for perverse, "kinky" sex from the victim and/or from other prostitutes?

Circle: Yes No Unable to determine

("Perverse, 'kinky' sex requests" are defined to be requests for sexual services which extend beyond the prostitute's "normal repertoire" namely, those services she is comfortable in providing on a regular basis. Green et al. (1993) and McKeganey and Bernard (1992) describe conventional sexual services requested by customers and provided by Glasgow, Scotland

prostitutes, including oral and vaginal sex and masturbation. Inner-city females in the Harlem section of New York City most frequently provided oral and vaginal sex in exchange for drugs and money to purchase drugs (El-Bassel et al., 1997). Using oral and vaginal sex and masturbation as "accepted" forms of sexual services, requests beyond this "normal repertoire" might include anal sex, group sex, engaging in voyeurism, and other requests for "kinky" sex (e.g., engaging in sadomasochistic activities, defecating/urinating on customer, providing soiled clothing to customer, and other paraphiliac activities) (Green et al., 1993)).

[Variable Name: ASKFORSX]

(42) Did the offender approach/solicit the prostitute victim for sexual services prior to committing the homicide?

(Code from VICAP (1998) Form, Item #53 "Customer/Client" designation, police reports, and offender and witness statements. Code positive if evidence exists, suggesting that the offender approached the prostitute victim with the intent of engaging in sexual activity with her, irrespective of his motivation to commit or not to commit murder.)

Circle: Yes No Unable to determine

[Variable Name: SELECT]

(43) What was the principal reason the offender selected the female prostitute to be his next victim? (choose one):

(Code from police reports and offender statements)

("Principal reason" is defined to be the most salient/important factor, influencing the perpetrator's decision to select the prostitute under study to be his next victim. If records are ambiguous, then select the most frequently cited reason from the available documentation.)

- _____ physical attributes (e.g., hair color, attractiveness, type of dress, etc.)
- _____ victim was alone (i.e., increasing the likelihood of a successful abduction/attack due to the victim's isolation and the absence of observers)
- _____ victim was vulnerable due to influence of drugs and/or alcohol (See Victim Characteristics Form, Question #'s 3-14)
- _____ victim was psychologically vulnerable (e.g., victim appeared distraught or depressed at time of encounter, which the offender believed would make her "an easy target")
- _____ victim played role in offender's sexually sadistic fantasy (See Questions #27 and #28)
- _____ victim symbolic of someone in offender's past (e.g., a former mate, his mother, etc.)
- _____ victim symbolizes a manifestation of a past conflict (e.g., offender is murdering women resembling those who once refused to date him)
- _____ "mission-oriented" offender despises prostitutes as a group, believing they are "unladylike" and "dirty" and wants to "rid society of them," believing they should be punished violently, as described by Holmes and De Burger (1988).
- _____ no real reason (i.e., opportunity victim, at wrong place at wrong time)
- _____ prostitute was not preselected by offender to be a victim/homicide was unplanned and occurred pursuant to the offender soliciting the prostitute and engaging in sexual activity (e.g., during a sexual transaction occurring in a stroll area, the offender becomes enraged with the prostitute when she refuses to perform a requested sexual act and then strangles her to death).
- _____ unable to determine
- _____ other reason (describe) _____

[Variable Name: SOLICIT]

(44). What is the principal reason the offender solicited the prostitute victim for sexual services (choose one)?

(Code from police reports and offender statements)

("Principal reason" is defined to be the most salient/important factor, influencing the perpetrator's decision to solicit the prostitute under study for sexual services. If records are ambiguous, then select the most frequently cited reason from the available documentation).

_____ offender has high level of sexual arousal ("High sexual arousal" might encompass the offender feeling frequently "horny" or "turned on"; compulsive masturbation and/or the use of pornographic media/pornographic establishments to reduce sexual tension; sexual promiscuity, manifested by his being a frequent visitor/customer to prostitution stroll area) (See Question #14; Perpetrator Characteristics Form Question #'s 85, 86, 87, 88, 89 and PCL-R Item, entitled "Promiscuous Sexual Behavior," Question #49)

_____ offender desires arousal reduction without intimacy (i.e., wants to use the sexual encounter to reduce his sexual arousal only, having no desire to form a close, meaningful relationship)

_____ offender desires intimacy (i.e., wants to use the sexual encounter with the prostitute as a way of feeling "close" to her in a meaningful way)

_____ offender wants to relieve stress/tension (i.e., wants to use sexual encounter as a means of stress reduction. See Question #'s 1 - 12)

_____ offender wants to gain sexual experience (e.g., may find soliciting a prostitute a "safe," impersonal, and way to learn about sex where he will not be criticized)

_____ thrill of visiting a prostitute (e.g., finds this illegal, risky form of sexual encounter to be exciting)

_____ lonely (i.e., desires the prostitute's company)

_____ reduced sex drive in partner at home (i.e., uses sexual encounter as means of "replacing" partner and thereby satisfying his sexual needs)

_____ partner refuses to perform certain sex acts (i.e., believes prostitute will perform certain sex acts that his partner will not – e.g., sadomasochism, perverse sexual acts, paraphiliac activities, etc.)

_____ has no partner (i.e., perceives prostitute to be a potential mate)

_____ victim was not solicited for sexual services by the offender (i.e., victim was selected by the offender for other reasons – e.g., victim killed in blitz-style assault by a "mission-oriented" offender who wants to kill prostitutes because he believes they are disgraceful to society; victim is stalked and abducted by an organized type offender, etc.).

_____ unable to determine

_____ other reason (describe) _____

Victim I.D.# _____
Perpetrator I.D.# _____

[Variable Name: MTRGENIT]

(8) **genitalia** Yes No Unable to determine

[Variable Name: MTRANUS]

(9) **anus** Yes No Unable to determine

[Variable Name: MTROTHER]

(10) **other** Yes No Unable to determine

(11) **If "Yes," please describe the "other" trauma:** _____

[Variable Name: OVERKILL]

(12) **Does the victim's body evidence overkill?**

Circle: Yes No Unable to determine

(Code from VICAP (1998) Form, Item #80 and autopsy report)

("Overkill" is defined to be injury inflicted beyond that necessary for death. Code positive if VICAP (1998) Form, Item #80 indicates the presence of "Additional Trauma" to the victim. Code positive if the victim's autopsy report documents the presence of "secondary injuries," which are those additional injuries inflicted upon the victim by the offender, excluding the fatal wound or wounds. Also, code positive if VICAP (1998) Form, Item #83 "Extreme" designation is endorsed in the case of blunt force trauma).

[Summary Variable Name: NUMWOUND - will be calculated by computer]

Indicate the number of secondary injuries by type, where possible. Enter "99" if unable to determine:

(Code from VICAP (1998) Form, Item #80, "Number of Wounds" Section and autopsy report)

(As stated above, "secondary injuries" are those additional injuries inflicted upon the victim by the offender, excluding the fatal wound or wounds).

[Variable Name: GUNSHOT]

(13) _____ **gunshot wounds**

[Variable Name: STABWNDS]

(14) _____ **stab wounds** (Involve the "penetration of a pointed instrument into the depth of the body, causing a wound that is deeper than its length on the skin" (Spitz & Fisher, 1993, p. 252).

[Variable Name: CUTWNDS]

(15) _____ **cutting (incise) wounds** (These occur when "a sharp-edged object is drawn over the skin with sufficient pressure to produce an injury that is longer than it is deep..." (Spitz & Fisher, 1993, p. 252).

[Variable Name: BLUNTFCE]

(16) _____ **blunt force trauma wounds** (These are wounds caused by a blunt impact which may crush, shear, and tear tissue, and include contusions (bruises), abrasions, and lacerations. Contusions (bruises) are wounds characterized by bleeding into surrounding tissues (Spitz & Fisher, 1993, p. 199). Abrasions involve the scraping and removal of superficial skin layers (p. 206), and encompass grazes (e.g., when bullets lightly scrape the body), scratches (caused by a sharp edges, fingernails, etc.), and brush burns (rubbing against a rough surface, such as being dragged on the ground) (p. 210). Abrasions further

include rope burns, trauma caused by handcuffs, and injuries from tying and binding (i.e., use of restraints) (p. 211). "A laceration is a tear produced by blunt trauma" (e.g., hammer, bottle, pistol-whipping) (p. 216). Within this overall category also include wounds caused by whipping, kicking/stomping, punching, crushing, as well as internal and skeletal injuries (e.g., bone and skull fractures) caused by blunt force trauma (pp. 217, 231, and 235).

[Variable Name: BURNS]

(17) _____ burns

[Variable Name: BITES]

(18) _____ bite marks

[Variable Name: OTRWOUND]

(19) _____ other wound(s) (calculate sum of other documented wounds)

[Variable Name: OTHWNDESC]

(20) Please describe "other" wounds: _____

Premortem and Postmortem Activities:

Indicate all forms of sexual assault and victimization inflicted upon the victim prior to death (respond to all questions):

(Code from VICAP (1998) Form, Item #87b, autopsy and police reports, and offender interviews. Using the VICAP Form, code those forms of sexual assault not endorsed as "No" unless the other file materials indicate otherwise)

[Variable Name: ORALPONV]

(21) **Offender performed oral sex on victim**

Circle: Yes No Unable to determine

[Variable Name: VAGNRAPE]

(22) **Victim vaginally raped by the offender**

Circle: Yes No Unable to determine

[Variable Name: ANALRAPE]

(23) **Victim anally raped by the offender**

Circle: Yes No Unable to determine

[Variable Name: ORALVONP]

(24) **Victim forced to perform oral sex on perpetrator**

Circle: Yes No Unable to determine

[Variable Name: VOTRACTS]

(25) **Victim forced to perform other sexual acts (e.g., masturbation and/or paraphiliac activities, such as sadomasochistic acts)**

Circle: Yes No Unable to determine

Describe the "other sexual acts": _____

Was semen identified in any of the victim's body cavities?
(Code from VICAP (1998) Form, Item #88 and autopsy report)

[Variable Name: SEMENVAG]

(26) in vagina Yes _____ No _____ Unable to determine _____

[Variable Name: SEMENANU]

(27) in anus Yes _____ No _____ Unable to determine _____

[Variable Name: SEMENMOU]

(28) in mouth Yes _____ No _____ Unable to determine _____

[Variable Name: OTHREJAC]

(29) **Is there evidence of other ejaculation at the crime scene (choose one)?**

(Code from VICAP (1998) Form, Item #88 or police and autopsy reports and offender interviews)

- _____ on body of victim
- _____ elsewhere at the crime scene
- _____ both on body of victim and elsewhere at the crime scene
- _____ no evidence of other ejaculation at crime scene
- _____ unable to determine

[Variable Name: SODOMIZE]

(30) **Indicate whether or not the victim was sodomized with foreign objects in the mouth, anus, vagina, and/or other locations (choose one):**

(Code from VICAP (1998) Form, Item #87c and police and autopsy reports)

- _____ vagina
- _____ anus
- _____ mouth
- _____ other location
- _____ multiple (two or more) locations (includes vagina, anus, mouth, and/or other areas)
- _____ victim not sodomized
- _____ unable to determine

[Variable Name: SODOMDES]

(31) **If "Yes" to any in Question #30, describe:** _____

(32) **The objects used to sodomize the victim were...(choose one):**

(Code from VICAP (1998) Form, Item #87c and police and autopsy reports)

- _____ discovered (i.e., left by the offender) in the victim's body
- _____ not found (i.e., removed by the offender) in the victim's body when it was discovered
- _____ victim was not sodomized with foreign objects
- _____ unable to determine

[Variable Name: VTORTURE]

(33) **Was the victim tortured prior to death?**

(Code from VICAP (1998) Form, Item #85 or autopsy and police reports and offender statements)

Circle: Yes _____ No _____ Unable to determine _____

("Torture" is defined as any perimortem activity (i.e., committed while the victim is alive) that is intentionally conducted to inflict physical and emotional pain on the victim, such as whipping, burning, cutting, slicing, pulling out hair, removing body parts, biting, asphyxiation to near death, and threatening to kill the victim through verbal and/or physical means (Ressler et al., 1985b). Torture is said to reinforce a sexual sadist's arousal during an attack (Ressler et al., 1985b) and also distances the killer from his victim (Holmes & Holmes, 1996).

[Variable Name: MUTILATE]

(34) Was the victim's body mutilated after death?

(Code from VICAP (1998) Form, Item #'s 84a, 85, and 86, autopsy and police reports, and offender statements)

Circle: Yes No Unable to determine

("Mutilation" includes biting, slashing, cutting of breasts, buttocks, vagina, face, dismemberment, removal of sexual organs, evisceration, and cannibalism/vampirism).

[Variable Name: MUTILDES]

(35) If "Yes" to Question #34, describe: _____

[Variable Name: SEXWBODY]

(36) Did the offender engage in necrophilia (vaginal, oral, anal, and/or other postmortem sexual assault) with the corpse?

(Code from VICAP (1998) Form, Item #87b or from autopsy and police reports, and offender statements)

Circle: Yes No Unable to determine

[Variable Name: RITUALS]

(37) Did the offender exhibit/engage in intentional or unusual ritualistic activity at the crime scene?

(Code from VICAP (1998) Form, Item #67 or from police reports and offender statements)

Circle: Yes No Unable to determine

("Ritualistic activity" includes urination and/or defecation, creating rock formations, burning candles, dead animals, and other bizarre activities observed at the crime scene.)

[Variable Name: RITULDES]

(38) If "Yes" to Question #37, describe: _____

[Variable Name: DEPERSON]

(39) Did the offender engage in depersonalization of the victim during the assault or after committing the homicide?

(Code from VICAP (1998) Form, Item #'s 71 and 75, autopsy and police reports, and offender statements)

Circle: Yes No Unable to determine

("Depersonalization" serves to distance the offender from the victim and is also described to be a functional form of mutilation, which may be ante- or postmortem, whereby the offender intentionally tries to conceal the victim's identity. Manifestations of depersonalization include

mutilation of the face, covering or blindfolding the face, and flipping the victim onto her stomach (Holmes & Holmes, 1996; Ressler et al., 1988)).

[Variable Name: DEPERDES]

(40) If "Yes" to Question #39, describe:

[Variable Name: DELAYID]

(41) Did the offender disfigure the body in an attempt to prevent or delay the identification of the victim?

(Code from VICAP (1998) Form, Item #'s 85 and 86 or from autopsy and police reports and offender statements)

Circle: Yes No Unable to determine

("Disfiguration" in this context includes cutting off the victim's head, feet, and/or hands, burning the body, and other activities intended to conceal the victim's identity).

Indicate whether or not the offender removed body parts and/or disemboweled the victim (respond to all categories):

(Code from VICAP (1998) Form, Item #'s 86a and 86b or autopsy and police report and offender statements)

[Variable Name: HEAD]

(42) Head (includes removal of eye(s), ear(s), face, scalp, nose, and/or teeth)

Circle: Yes No Unable to determine

[Variable Name: BREAST]

(43) Breast(s) (includes removal of entire breast(s), nipple(s), and/or breast portion/excised tissue)

Circle: Yes No Unable to determine

[Variable Name: GENITAL]

(44) Genitalia

Circle: Yes No Unable to determine

[Variable Name: EXTREMIT]

(45) Extremities (includes hand(s), foot/feet, arm(s), leg(s), toe(s), and/or finger(s))

Circle: Yes No Unable to determine

[Variable Name: INTORGAN]

(46) Internal Organs

Circle: Yes No Unable to determine

[Variable Name: OTRPARTS]

(47) Other (includes anus)

Circle: Yes No Unable to determine

[Variable Name: CANNIBAL]

(48) Did the offender engage in cannibalism (consumption of flesh) and/or vampirism (consumption of blood) with the victim's body?

(Code from VICAP (1998) Form, Item #85 or from autopsy and police reports and offender statements)

Circle: Yes No Unable to determine

[Variable Name: OTRASSLT]

(49) Did the offender engage in any other unusual assault means on the victim's body?

(Code from VICAP (1998) Form, Item #85 or from autopsy and police reports and offender statements)

Circle: Yes No Unable to determine

("Other unusual assault means" may include running over the victim's body with a vehicle; exploring, probing, and/or mutilating the victim's wounds and/or body cavities; and other strange attacks on the corpse).

[Variable Name: OTRASDES]

(50) If "Yes," to Question #49, describe: _____

[Variable Name: CARVING]

(51) Did the offender write or carve on the victim's body?

(Code from VICAP (1998) Form, Item #66 or from autopsy and police reports and offender statements)

Circle: Yes No Unable to determine

[Variable Name: CARVDESC]

(52) If "Yes," to Question #51, describe: _____

[Variable Name: DRAWING]

(53) Did the offender engage in writing or drawing elsewhere at the crime scene?

(Code from VICAP (1998) Form, Item #65 or from police reports and offender statements)

Circle: Yes No Unable to determine

[Variable Name: DRAWDESC]

(54) If "Yes," to Question #53, describe: _____

[Variable Name: TAMPERED]

(55) Does available information suggest that the offender attempted to destroy or remove crime scene evidence?

(Code from VICAP (1998) Form, Item #64 or from police and autopsy reports and offender statements)

Circle: Yes No Unable to determine

("Destruction or removal of crime scene evidence" might include removing or burning the victim's clothes and other identifying information from the crime scene, cleaning up blood, removing the murder weapon, and transporting the victim's body from the murder site to another location).

Weapon(s) used by the offender in this homicide (respond to all questions):
 (Code from VICAP (1998) Form, Item #89b or from autopsy and police reports and offender statements)

[Variable Name: FIREARM]			
(56) firearm	Yes	No	Unable to determine
[Variable Name: CUTWEAPN]			
(57) stabbing or cutting weapon	Yes	No	Unable to determine
[Variable Name: BLUDGEON]			
(58) bludgeon (e.g., rock, brick, etc.) or club	Yes	No	Unable to determine
[Variable Name: LIGATURE]			
(59) ligature (e.g., rope, wire, etc.)	Yes	No	Unable to determine
[Variable Name: HANDFEET]			
(60) hands or feet	Yes	No	Unable to determine
[Variable Name: OTRWEAPN]			
(61) other	Yes	No	Unable to determine
[Variable Name: OTWPNDES]			
(62) Please describe "other" weapon:	_____		

[Variable Name: WEAPNTYP]
(63) The murder weapons indicated above were..... (choose one):
 (Code from VICAP (1998) Form, Item #89b or from autopsy and police reports and offender statements)

- _____ weapon(s) of opportunity (i.e., found by offender at or near the crime scene)
- _____ weapon(s) of choice (i.e., preselected and brought by the offender to the crime scene)
- _____ both weapon(s) of opportunity and weapon(s) of choice
- _____ not applicable (code positive if offender used only "hands or feet" as weapons)
- _____ unable to determine

[Variable Name: WEAPNLOC]
(64) The assault (murder) weapons used in the homicide were..... (choose one):
 (Code from VICAP (1998) Form, Item #89b or from police reports)

- _____ Recovered at crime scene
- _____ Recovered elsewhere
- _____ Not recovered
- _____ Not applicable (code positive if offender used only "hands or feet" as weapons)
- _____ Unable to determine

Prostitute Homicide Questionnaire (PHQ)

Jonathan A. Dudek, M.A. and Christine Maguth Nezu, Ph.D., ABPP © 2000

Body Disposal

Body Recovery (Disposal) Site (refers to the location where the victim's body was discovered):

[Variable Name: DESCRBRS]

(1) Description of general body recovery (disposal) site (check one):

(Code from VICAP (1998) Form, Item #61, police reports, and crime scene photos)

- rural urban
 suburban unable to determine

[Variable Name: NEIGHBRS]

(2) Neighborhood of body recovery (disposal) site is generally (check one):

(Code from VICAP (1998) Form, Item #61, police reports, and crime scene photos)

- business/industrial/commercial
 farm/agricultural
 residential
 uninhabited/wilderness
 unable to determine

[Variable Name: BRSPLACE]

(3) Body recovery (disposal) site was (select one response that most accurately and specifically depicts the description of the body recovery site):

(Code from VICAP (1998) Form, Item #'s 61 and 62 and supplemental data from police reports and crime scene photos)

- a residence (includes homes, apartments, etc.)
 hotel/motel
 at/near school or playground
 retail shopping district
 public street
 vacant building
 alley
 known crack house/drug den
 in an established vice area (known stroll area, red light district, etc.)
 neighborhood/nonstroll area
(A "neighborhood/nonstroll area," according to the FBI, is a residential, nonstroll location - proximate to drug distribution and usage sources, such as crack houses - where prostitutes work and "hang out," servicing mostly foot traffic customers. It is hypothesized that the victim's affinity for this particular area is due to the ready availability of illicit drugs).
 densely wooded area (includes wooded parks)
 open field

- _____ discovered in water (pond, lake, river, stream, culvert, etc.)
- _____ in vehicle
- _____ on public transportation
- _____ other (describe) _____
- _____ unable to determine

Murder Site (refers to the location where victim was killed by the offender):

[Variable Name: BRSSAME]

(4) Are the body recovery (disposal) site and the murder site the same?

(Code from VICAP (1998) Form, Item #'s 60 and 61 as well as police reports and offender statements)

Circle: Yes No Unable to determine

[Variable Name: DESCRMS]

(5) Description of murder site (check one):

(Code from VICAP (1998) Form, Item #60, police reports, and crime scene photos)

- _____ rural _____ urban
- _____ suburban _____ unable to determine

[Variable Name: NEIGHMS]

(6) Neighborhood of murder site is generally (check one):

(Code from VICAP (1998) Form, Item #60, police reports, and crime scene photos)

- _____ business/industrial/commercial
- _____ farm/agricultural
- _____ residential
- _____ uninhabited/wilderness
- _____ unable to determine

[Variable Name: MSPLACE]

(7) Murder site was (select one response that most accurately and specifically depicts the description of the murder site):

(Code from VICAP (1998) Form, Item #'s 60 and 62 and supplemental data from police reports and crime scene photos)

- _____ a residence (includes homes, apartments, etc.)
- _____ hotel/motel
- _____ at/near school or playground
- _____ retail shopping district
- _____ public street
- _____ vacant building
- _____ alley
- _____ known crack house/drug den
- _____ in an established vice area (known stroll area, red light district, etc.)
- _____ neighborhood/nonstroll area

(A "neighborhood/nonstroll area," according to the FBI, is a residential, nonstroll location - proximate to drug distribution and usage sources, such as crack houses - where prostitutes work and "hang out," servicing mostly foot traffic customers. It is hypothesized that the victim's affinity for this particular area is due to the ready

- _____ availability of illicit drugs).
- _____ densely wooded area (includes wooded parks)
- _____ open field
- _____ body of water (pond, lake, river, stream, culvert, etc.)
- _____ in vehicle
- _____ on public transportation
- _____ other (describe) _____
- _____ unable to determine

Initial Contact Site (refers to the location where the offender met the victim):

[Variable Name: ICSSAME]

(8) Are the initial contact site and the murder site the same?

(Code from VICAP (1998) Form, Item #'s 59 and 60 as well as police reports and offender statements)

Circle: Yes No Unable to determine

[Variable Name: DESCRICS]

(9) Description of initial contact site (check one):

(Code from VICAP (1998) Form, Item #59, police reports, and crime scene photos)

- _____ rural _____ urban
- _____ suburban _____ unable to determine

[Variable Name: NEIGHICS]

(10) Neighborhood of initial contact site is generally (check one):

(Code from VICAP (1998) Form, Item #59, police reports, and crime scene photos)

- _____ business/industrial/commercial
- _____ farm/agricultural
- _____ residential
- _____ uninhabited/wilderness
- _____ unable to determine

[Variable Name: ICSPLACE]

(11) Initial contact site was (select one response that most accurately and specifically depicts the description of the initial contact site):

(Code from VICAP (1998) Form, Item #'s 59 and 62 and supplemental data from police reports and crime scene photos)

- _____ a residence (includes homes, apartments, etc.)
- _____ hotel/motel
- _____ at/near school or playground
- _____ retail shopping district
- _____ public street
- _____ vacant building
- _____ alley
- _____ known crack house/drug den
- _____ in an established vice area (known stroll area, red light district, etc.)
- _____ neighborhood/nonstroll area
(A "neighborhood/nonstroll area," according to the FBI, is a residential, nonstroll

location - proximate to drug distribution and usage sources, such as crack houses - where prostitutes work and "hang out," servicing mostly foot traffic customers. It is hypothesized that the victim's affinity for this particular area is due to the ready availability of illicit drugs).

- densely wooded area (includes wooded parks)
- open field
- body of water (pond, lake, river, stream, culvert, etc.)
- in vehicle
- on public transportation
- other (describe) _____
- unable to determine

Victim's Last Known Location (refers to the location where the victim was last seen alive):

[Variable Name: LKLSAME]

(12) Was the victim's last known location the same as the initial contact site?

(Code from VICAP (1998) Form, Item #'s 58 and 59 as well as police reports and offender statements)

Circle: Yes No Unable to determine

[Variable Name: DESCRLKL]

(13) Description of victim's last known location (check one):

(Code from VICAP (1998) Form, Item #58, police reports, and crime scene photos)

- rural urban
- suburban unable to determine

[Variable Name: NEIGHLKL]

(14) Neighborhood of victim's last known location is generally (check one):

(Code from VICAP (1998) Form, Item #58, police reports, and crime scene photos)

- business/industrial/commercial
- farm/agricultural
- residential
- uninhabited/wilderness
- unable to determine

[Variable Name: LKLPLACE]

(15) Victim's last known location was (select one response that most accurately and specifically depicts the description of the victim's last known location):

(Code from VICAP (1998) Form, Item #'s 58 and 62 and supplemental data from police reports and crime scene photos)

- a residence (includes homes, apartments, etc.)
- hotel/motel
- at/near school or playground
- retail shopping district
- public street
- vacant building
- alley
- known crack house/drug den

- _____ in an established vice area (known stroll area, red light district, etc.)
- _____ neighborhood/nonstroll area
(A "neighborhood/nonstroll area," according to the FBI, is a residential, nonstroll location - proximate to drug distribution and usage sources, such as crack houses - where prostitutes work and "hang out," servicing mostly foot traffic customers. It is hypothesized that the victim's affinity for this particular area is due to the ready availability of illicit drugs).
- _____ densely wooded area (includes wooded parks)
- _____ open field
- _____ body of water (pond, lake, river, stream, culvert, etc.)
- _____ in vehicle
- _____ on public transportation
- _____ other (describe) _____
- _____ unable to determine

[Variable Name: MOVEBODY]

(16) Does the evidence indicate that the offender moved the corpse from the death (murder) site to the body disposal (recovery) site?

(Code from VICAP (1998) Form, Item #'s 57, 60 and 61, autopsy and police reports, and offender statements)

Circle: Yes No Unable to determine

[Variable Name: LEFTBODY]

(17) How was the body disposed of (choose one)?

(Code from VICAP (1998) Form, Item #'s 68 and 69, police reports, and offender statements)

- _____ openly displayed, or otherwise placed, to ensure discovery (Code from VICAP (1998) Form, Item #'s 68 and 69. In this case, the offender has engaged in conscious action and risk to ensure that the body will be discovered by other persons, or even specific individuals. The offender takes a risk to place/move the victim's remains where people will find them. The body may be intentionally positioned postmortem (see VICAP (1998) Form, Item #'s 68 and 69) by the offender in a manner designed to shock and humiliate others, while degrading the victim. Openly displaying the body in this manner requires substantially more effort than dumping the body in a location where others will discover it (W. D. Lord, personal communication, June 14, 2000). For instance, the discovery of a victim's nude body next to a hiking trail would not meet criteria for this item. However, if the perpetrator propped the victim's body up against a tree in a sexually degrading manner next to the trail, then this item would be coded positive, since this latter instance reflects careful planning to shock those persons walking on the path).
- _____ concealed, hidden, or otherwise placed, to prevent discovery (Code from VICAP (1998) Form, Item #68. Code positive if the offender has taken steps to prevent the discovery of the victim's body (e.g., buried, covered, hidden, discarded in water, placed in a container, scattered body parts)).
- _____ without apparent concern as to whether or not it was discovered (Code from VICAP (1998) Form, Item #68. In this case, the offender discards the victim's body without concern, much like "dumping the trash." Victims who are killed and whose bodies are left in place at the murder site (unless they are intentionally displayed/positioned to ensure discovery) are coded in this category, along with bodies dumped with little

concern about whether or not they will be discovered (e.g., a single homicide offender kills a prostitute in a fit of rage, panics, and then flees the murder scene; an organized offender dumps a victim's body in a culvert next to the highway)).
_____ unable to determine

[Variable Name: HOWFOUND]

(18) How was the body discovered? Select one response that most accurately and specifically describes how the body was found:

(Code from VICAP (1998) Form, Item #71 and from police and autopsy reports)

- _____ buried
- _____ covered
- _____ wrapped
- _____ weighted, in body of water (pond, lake, river, stream, etc.)
- _____ not weighted, in body of water (pond, lake, river, stream, etc.)
- _____ in a building
- _____ in a container (box, dumpster, refrigerator, drainage pipe, etc.)
- _____ in a vehicle
- _____ scattered (body parts)
- _____ other (describe) _____

[Variable Name: HOWDRESS]

(19) Describe how the body was clothed when discovered at the disposal site (check one):

(Code from VICAP (1998) Form, Item #76 and from police and autopsy reports)

- _____ fully clothed
- _____ partially undressed (defined to include victim being nude from waist-up; breasts/chest exposed; nude from waist down; genital area exposed; nude with sock(s) and/or shoe(s) (VICAP, 1998, p. 19))
- _____ completely nude
- _____ unable to determine
- _____ other (describe) _____

[Variable Name: DISPCLTH]

(20) Describe the disposition of the clothing (which was not on the victim) recovered at the disposal site (select one):

(Code from VICAP (1991) Form, Item #155; VICAP (1998) Form, Narrative Section; police and autopsy reports; and crime scene photos)

- _____ piled neatly
- _____ scattered
- _____ hidden
- _____ not applicable
- _____ unable to determine

[Variable Name: BODYRITU]

(21) Is there evidence that the offender engaged in ritualistic activity with the victim's body?

(Code from VICAP (1998) Form, Item #77, police and autopsy reports, and offender statements)

Circle: Yes No Unable to determine

("Ritualistic activity" in this context includes actions described by Ressler et al. (1988),

including redressing the victim, washing wounds, bandaging wounds, etc.).

[Variable Name: BRITDESC]

(22) If "Yes," to Question #21, describe: _____

Geographic Profiling Variables:

Using the Internet link provided, enter the most specific address information that is available for each criterion (i.e., address/location of initial encounter site, residential addresses, and address/location of body disposal (recovery) site), calculating approximate distances for the following. If the requested sites are the same location, enter "0" for the distance. Enter "9999" if unable to determine:

[Variable Name: PRESICS]

(23) Calculate, in miles and tenths of miles, the approximate the distance between the offender's residence and the best estimate of the initial contact site (i.e., where the perpetrator initially encountered the victim prior to committing the homicide). Use the exact address of the initial contact site if known. Otherwise, determine the best address/location estimate (i.e., an approximate street address) of where the prostitute victim most frequently strolled for customers, if in a vice area, or otherwise "hung out" to service customers (e.g., a residential address if in a neighborhood/nonstroll area, the address of a bar or hotel frequented by the victim to solicit customers, etc.): _____

[Variable Name: PRESBDS]

(24) Estimated distance between the offender's residence and the body disposal site in miles and tenths of miles: _____

[Variable Name: VRESBDS]

(25) Estimated distance between the victim's residence and the body disposal site in miles and tenths of miles: _____

[Variable Name: ICSBDSDX]

(26) Calculate, in miles and tenths of miles, the approximate distance between the best estimate of the initial contact site (i.e., where the perpetrator initially encountered the victim prior to committing the homicide) and the body disposal site. Use the exact address of the initial contact site if known. Otherwise, determine the best address/location estimate (i.e., an approximate street address) of where the prostitute victim most frequently strolled for customers, if in a vice area, or otherwise "hung out" to service customers (e.g., a residential address if in a neighborhood/nonstroll area, the address of a bar or hotel frequented by the victim to solicit customers, etc.): _____

[Variable Name: KNOWSICS]

(27) Is the perpetrator familiar with the initial contact site?

(Code "Yes" if you have previously coded that the offender is a frequent visitor to the prostitute victim's work location, such as a stroll area, neighborhood/nonstroll area, or crack house (see Perpetrator Characteristics Form, Questions #'s 85-88). Otherwise, code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

[Variable Name: KNOWSMS]

(28) Is the perpetrator familiar with the murder (death) site?

(Code "Yes" if you have positively coded Perpetrator Characteristics Form, Question #92, having evidence that the offender brought the victim to a preselected murder area. Otherwise, code from police reports and offender and witness statements).

Circle: Yes No Unable to determine

[Variable Name: KNOWSBDS]

(29) Is the perpetrator familiar with the disposal site?

(Code "Yes" if you have positively coded Perpetrator Characteristics Form, Question #92, having evidence that the offender brought the victim to a preselected body disposal area. Otherwise, code from police reports and offender and witness statements).

Circle: Yes No Unable to determine

Does the evidence suggest that the offender spent time with the victim's body.....(respond to all questions):

(Code from police reports and offender and witness statements)

[Variable Name: TIMEBFOR]

(30) before taking it to the disposal site (code as "Not Applicable" if the murder site and the body disposal site are the same—see Question #4)

Circle: Yes No Not Applicable Unable to determine

[Variable Name: TIMEDRNG]

(31) during the body disposal process (i.e., moving the corpse from the murder site to the disposal location and/or spending time with the body before leaving the disposal site(or the murder site if the body was also disposed of there—see Question #4)

Circle: Yes No Unable to determine

Postcrime Behavior:

[Variable Name: TOOKCLTH]

(32) Does evidence suggest that the offender took and kept any articles of the victim's clothing?

(Code from VICAP (1998) Form, Item #79b as well as police reports and offender and witness statements)

Circle: Yes No Unable to determine

[Variable Name: TKCLDESC]

(33) If "Yes" to Question #32, describe: _____

[Variable Name: KEEPITEM]

(34) Does evidence suggest that the offender took and kept personal items from the victim other than clothing?

(Code from VICAP (1998) Form, Item #79b, police reports, and offender and witness statements)

Circle: Yes No Unable to determine

("Personal items" might include jewelry, pictures, a driver's license, and body parts (Ressler et al., 1988))

[Variable Name: RETURNED]

(35) Is there evidence indicating that the offender returned to the disposal site?

(Code from VICAP (1998) Form, Item #70, police reports, and offender and witness statements)

(Reasons for "returning to the disposal site" include to perpetuate the offender's fantasy, to have sex with the corpse, to mutilate the corpse, to commit another homicide, and to monitor police progress (Ressler et al., 1988)).

Circle: Yes No Unable to determine

[Variable Name: SAWDISCV]

(36) Is there evidence that the offender observed the body discovery?

(Code from police reports and offender and witness statements):

Circle: Yes No Unable to determine

("Observing the body discovery," as described by Ressler et al. (1988), might include the offender acting as a bystander at the crime scene, leading police to the body deceptively, leading police to the body after confessing to the crime, and telephoning or writing to the police, informing them of the body's location).

[Variable Name: INDIRECT]

(37) Is there evidence that the offender participated in the investigation indirectly, or privately?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Indirect participation," as described by Ressler et al. (1988), includes such activities as keeping press clippings, following stories in the news media, and maintaining a diary).

[Variable Name: DIRECTLY]

(38) Is there evidence that the offender participated in the investigation directly?

(Code from police reports and offender and witness statements)

Circle: Yes No Unable to determine

("Direct participation" as reported by Ressler et al. (1988), includes behaviors such as sending letters to the police and/or the media, leaving clues for the police, "hanging out" in areas frequented by the police, such as bars, and telephoning the police and/or the media).

Appendix B

Percentage of Agreement Calculations Between Raters Across Select Variables By Form

Classification Form		Rater Pairing					
		Experimenter – Rater 1		Experimenter – Rater 2		Rater 1 – Rater 2	
Variable Name	Variable Description	# hits / # cases	%	# hits / # cases	%	# hits / # cases	%
CATEGORY	Homicide Category	9 / 9	100	9 / 9	100	9 / 9	100
452 MOTIVE	Homicide Motive	7 / 9	78	9 / 9	100	7 / 9	78
Victim Characteristics Form							
BZEPRES	Benzoylcegonine Present	7 / 9	78	8 / 9	89	8 / 9	89
BZELEVL	Benzoylcegonine Level	9 / 9	100	9 / 9	100	9 / 9	100
ETOHLEVL	Ethanol (Alcohol) Level	8 / 9	89	9 / 9	100	8 / 9	89
MORPPRES	Morphine Present	6 / 9	67	8 / 9	89	7 / 9	78

Appendix B (Continued)

MORPLEVL	Morphine Level	8 / 9	89	9 / 9	100	8 / 9	89
CODEPRES	Codeine Present	7 / 9	78	8 / 9	89	9 / 9	100
CODELEVL	Codeine Level	9 / 9	100	9 / 9	100	9 / 9	100
SCH1PRES	Schedule I Drug Present	7 / 9	78	8 / 9	89	8 / 9	78
OSCHPRES	Schedule II, III, IV Drug Present	7 / 9	78	8 / 9	89	6 / 9	67
SEXSRVCS	Sexual Services Provided	7 / 9	78	3 / 9	33	2 / 9	22
CRIMAREA	Works in High Crime Area	4 / 9	44	3 / 9	33	8 / 9	89
453 SEXPLACE	Sexual Encounter Location	7 / 9	78	8 / 9	89	8 / 9	89
VDISTCHG	# of Drug Distribution Charges	9 / 9	100	8 / 9	89	8 / 9	89
VHYGIENE	Poor Victim Hygiene	4 / 9	44	6 / 9	67	5 / 9	56
VICEDATE	First Vice Arrest Date	9 / 9	100	9 / 9	100	9 / 9	100
NOCONDOM	No Condom Use	6 / 9	67	7 / 9	78	6 / 9	67
FORGOUSE	Willing to Forgo Condom Use	9 / 9	100	8 / 9	89	8 / 9	89
NOCHECK	Fails to Check Customer Hygiene	9 / 9	100	9 / 9	100	9 / 9	100
ANYSEX	Any Sex Act for Money or Drugs	8 / 9	89	9 / 9	100	9 / 9	100

Appendix B (Continued)

FREAKING	Engaging in Perverse Sex Acts	6 / 9	67	5 / 9	56	8 / 9	89
HXOFVICT	History of Victimization	8 / 9	89	8 / 9	89	8 / 9	89
Perpetrator Characteristics Form							
PADLTSEX	# Prior Adult Sex Offenses	6 / 9	67	8 / 9	89	6 / 9	67
PCHLDSEX	# Prior Child Sex Offenses	7 / 9	78	9 / 9	100	9 / 9	100
HXJUVSEX	Juvenile Sex Offense History	9 / 9	100	9 / 9	100	9 / 9	100
454 PEDOPHIL	Pedophilia	6 / 9	67	7 / 9	78	7 / 9	78
EXHIBIT	Exhibitionism	7 / 9	78	7 / 9	78	7 / 9	78
FROTTEUR	Frotteurism	7 / 9	78	7 / 9	78	7 / 9	78
SADISM	Sadism	2 / 9	22	1 / 9	11	7 / 9	78
TRFETISH	Transvestic Fetishism	8 / 9	89	8 / 9	89	7 / 9	78
TELESCAT	Telephone Scatalogia	8 / 9	89	8 / 9	89	7 / 9	78
VICTTYPE	Adult/Child Sex Offense Victims	7 / 9	78	9 / 9	100	7 / 9	78
MASTATUS	Perpetrator's Marital Status	7 / 9	78	7 / 9	78	7 / 9	78

Appendix B (Continued)

PHOMLESS	Homeless	9 / 9	100	9 / 9	100	9 / 9	100
ADDRNUM	# of Prior Addresses	2 / 9	22	1 / 9	11	7 / 9	78
EVADEPD	Moved to Avoid Police Detection	7 / 9	78	7 / 9	78	9 / 9	100
TRAVELER	Traveler or Tourist	8 / 9	89	8 / 9	89	9 / 9	100
PPOSSCHG	# of Drug Possession Charges	8 / 9	89	9 / 9	100	8 / 9	89
POORWORK	Poor Work History	8 / 9	89	3 / 9	33	2 / 9	22
NUMJOBS	# of Prior Jobs	3 / 9	33	3 / 9	33	9 / 9	100
455 AUTODESC	Description of Vehicle	9 / 9	100	9 / 9	100	9 / 9	100
VEHICOND	Condition of Vehicle	3 / 9	33	8 / 9	89	3 / 9	33
GRANDIOS	PCL-R Grandiosity	2 / 5	40	3 / 5	60	2 / 5	40
STIMULAT	PCL-R Need for Stimulation	3 / 5	60	2 / 5	40	4 / 5	80
LYING	PCL-R Pathological Lying	2 / 5	40	1 / 5	20	4 / 5	80
REMORSE	PCL-R Lack of Remorse	3 / 5	60	5 / 5	100	3 / 5	60
LOAFFECT	PCL-R Shallow Affect	2 / 5	40	2 / 5	40	2 / 5	40
POORCTRL	PCL-R Poor Behavioral Controls	2 / 5	40	3 / 5	60	3 / 5	60

Appendix B (Continued)

PROMISCU	PCL-R Promiscuity	2 / 5	40	2 / 5	40	3 / 5	60
LACKGOAL	PCL-R Lack of Long-Term Goals	2 / 5	40	2 / 5	40	2 / 5	40
REVOCAT	PCL-R Revocation of Release	2 / 5	40	4 / 5	80	3 / 5	60
NONSXCHG	# of Nonsexual Offense Charges	6 / 9	67	6 / 9	67	7 / 9	78
VIOLNCHG	# of Nonsexual Violent Charges	6 / 9	67	7 / 9	78	6 / 9	67
JUVNSOFF	Juvenile Nonsex Offense History	9 / 9	100	9 / 9	100	9 / 9	100
DOMESTIC	# Domestic Violence Charges	8 / 9	89	9 / 9	100	8 / 9	89
456 PAMPHETA	Amphetamine	7 / 9	78	8 / 9	89	6 / 9	67
PMETHAMP	Methamphetamine	7 / 9	78	8 / 9	89	6 / 9	67
PAMPVARS	Amphetamine Variants	7 / 9	78	8 / 9	89	6 / 9	67
PLSD	Lysergic Acid Diethylamide	7 / 9	78	8 / 9	89	6 / 9	67
PPCP	Phencyclidine	7 / 9	78	8 / 9	89	6 / 9	67
PCODEINE	Codeine	7 / 9	78	8 / 9	89	6 / 9	67
PHEROIN	Heroin	7 / 9	78	8 / 9	89	6 / 9	67
PMORPHIN	Morphine	7 / 9	78	8 / 9	89	6 / 9	67

Appendix B (Continued)

	PBENZODI	Benzodiazepines	7 / 9	78	8 / 9	89	6 / 9	67
	POTHRSCH	Schedule II, III, and IV Drugs	7 / 9	78	8 / 9	89	6 / 9	67
	OTRPROST	Solicited Other Prostitutes	7 / 9	78	7 / 9	78	6 / 9	67
	STALKING	"Cruised" for Victim in Vehicle	7 / 9	78	8 / 9	89	8 / 9	89
	KNOWAREA	Took Victim to Preselected Area	8 / 9	89	8 / 9	89	9 / 9	100
	RESTRAIN	Perpetrator Used Restraints	9 / 9	100	5 / 9	56	5 / 9	56
	EXCESTIE	Restraints Were Excessive	8 / 9	89	4 / 9	44	5 / 9	56
457	OTHRPLAN	Engaged in Other Planning	2 / 9	22	8 / 9	89	2 / 9	22

Situational-Interactional Factors Form

	CNFLTML2	Prior Conflict With Male	5 / 9	56	2 / 9	22	4 / 9	44
	CNFLTPA2	Parental Conflict	7 / 9	78	2 / 9	22	2 / 9	22
	PTNRPRO2	Marital/Partner Problems	7 / 9	78	7 / 9	78	5 / 9	56
	WORKPROB	Employment Problems	4 / 9	44	4 / 9	44	7 / 9	78
	SIGDEATH	Death of Significant Person	8 / 9	89	2 / 9	22	1 / 9	11

Appendix B (Continued)

PHYSIOSE	Physiological Drug Side Effects	5 / 9	56	3 / 9	33	2 / 9	22
VDRUGSE	Drug Side Effects on Victim	6 / 9	67	4 / 9	44	3 / 9	33
PDRUGSE	Drug Side Effects on Perpetrator	5 / 9	56	4 / 9	44	2 / 9	22
PRIORARG	Prior Victim-Offender Argument	9 / 9	100	9 / 9	100	9 / 9	100
SEXABDES	Describe Victim's Sexual Abuse	9 / 9	100	9 / 9	100	9 / 9	100
COMPLNCE	Escalation Due to Compliance	2 / 9	22	4 / 9	44	7 / 9	78
YFANTASY	Victim Behavior Matches Fantasy	3 / 9	33	2 / 9	22	6 / 9	67
458 SEXROLE	Violation of Sex Role Stereotypes	2 / 9	22	3 / 9	33	6 / 9	67
TROPHIES	Possession of Trophies/Souvenirs	0 / 9	0	3 / 9	33	4 / 9	44
BONDAGE	Possession of Bondage Materials	6 / 9	67	3 / 9	33	0 / 9	0
TORTKITS	Possession of Torture Devices	6 / 9	67	2 / 9	22	2 / 9	22
SADIACTS	Sadistic Acts Against Others	1 / 9	11	1 / 9	11	7 / 9	78
SADIADES	Description of Sadistic Acts	6 / 9	67	6 / 9	67	9 / 9	100
FNTSYACT	Crimes Reflect Sexual Fantasies	5 / 9	56	8 / 9	89	5 / 9	56
ASKFORSX	Solicited Victim for Sex	8 / 9	89	8 / 9	89	9 / 9	100

Appendix B (Continued)

SELECT	Reason for Selecting Victim	2 / 9	22	2 / 9	22	2 / 9	22
SOLICIT	Reason for Soliciting Victim	1 / 9	11	5 / 9	56	1 / 9	11
Crime Scene Variables Form							
CAUSEDTH	Victim's Cause of Death	8 / 9	89	7 / 9	78	8 / 9	89
MTRHEAD	Major Trauma – Head/Neck Area	9 / 9	100	8 / 9	89	8 / 9	89
MTRARMS	Major Trauma – Arms	9 / 9	100	3 / 9	33	3 / 9	33
429 STABWINDS	# of Stab Wounds	8 / 9	89	5 / 9	56	6 / 9	67
BLUNTFCE	# Blunt Force Trauma Wounds	7 / 9	78	4 / 9	44	4 / 9	44
BURNS	# of Burns	9 / 9	100	9 / 9	100	9 / 9	100
OTRWOUND	# of Other Wounds	9 / 9	100	6 / 9	67	6 / 9	67
OTWNDESC	Description of Other Wounds	9 / 9	100	7 / 9	78	7 / 9	78
ORALPONV	Oral Sex – Offender on Victim	8 / 9	89	8 / 9	89	9 / 9	100
VAGNRAPE	Vaginal Sex With Victim	3 / 9	33	4 / 9	44	7 / 9	78
ANALRAPE	Anal Sex With Victim	5 / 9	56	6 / 9	67	5 / 9	56

Appendix B (Continued)

SEMENVAG	Semen Recovered From Vagina	6 / 9	67	7 / 9	78	6 / 9	67
SEMENMOU	Semen Recovered From Mouth	6 / 9	67	5 / 9	56	6 / 9	67
OTHREJAC	Other Ejaculation at Crime Scene	7 / 9	78	4 / 9	44	6 / 9	67
SODOMDES	Describe Foreign Object Sodomy	8 / 9	89	9 / 9	100	8 / 9	89
VTORTURE	Victim Tortured	8 / 9	89	9 / 9	100	8 / 9	89
MUTILATE	Victim's Body Mutilated	9 / 9	100	9 / 9	100	9 / 9	100
MUTILDES	Description of Mutilation	9 / 9	100	9 / 9	100	9 / 9	100
460 SEXWBODY	Offender Engaged in Necrophilia	5 / 9	56	4 / 9	44	6 / 9	67
RITUALS	Performed Rituals at Crime Scene	3 / 9	33	2 / 9	22	7 / 9	78
RITULDES	Describe Crime Scene Rituals	3 / 9	33	3 / 9	33	9 / 9	100
DELAYID	Disfigured Body to Prevent I.D.	9 / 9	100	9 / 9	100	9 / 9	100
BREAST	Removed/Disfigured Breast	9 / 9	100	9 / 9	100	9 / 9	100
OTRPARTS	Disfigured Other Body Parts	9 / 9	100	9 / 9	100	9 / 9	100
OTRASSLT	Unusual Assault on Body	3 / 9	33	8 / 9	89	4 / 9	44
CARVING	Writing/Carving on Body	9 / 9	100	9 / 9	100	9 / 9	100

Appendix B (Continued)

DRAWING	Writing/Drawing at Crime Scene	9 / 9	100	8 / 9	89	8 / 9	89
FIREARM	Used Firearm	9 / 9	100	9 / 9	100	9 / 9	100
CUTWEAPN	Used Stabbing/Cutting Weapon	9 / 9	100	9 / 9	100	9 / 9	100
BLUDGEON	Used Bludgeon	8 / 9	89	9 / 9	100	8 / 9	89
HANDFEET	Used Hands/Feet	9 / 9	100	6 / 9	67	6 / 9	67
OTRWEAPN	Used Other Weapon	9 / 9	100	8 / 9	89	8 / 9	89

Body Disposal Form

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DESCRBRS	Body Disposal Site Description	9 / 9	100	9 / 9	100	9 / 9	100
NEIGHBRS	Body Disposal Site Neighborhood	9 / 9	100	9 / 9	100	9 / 9	100
DESCRMS	Murder Site Description	9 / 9	100	9 / 9	100	9 / 9	100
NEIGHMS	Murder Site Neighborhood	8 / 9	89	9 / 9	100	8 / 9	89
DESCRICS	Encounter Site Description	5 / 9	56	4 / 9	44	7 / 9	78
NEIGHICS	Encounter Site Neighborhood	8 / 9	89	7 / 9	78	6 / 9	67
ICSPLACE	Specific Encounter Site Location	7 / 9	78	8 / 9	89	6 / 9	67

Appendix B (Continued)

LKLPLACE	Specific Last Known Location	2 / 9	22	6 / 9	67	2 / 9	22
HOWDRESS	How Victim's Body Was Clothed	8 / 9	89	7 / 9	78	8 / 9	89
BODYRITU	Ritualistic Activity With Body	3 / 9	33	9 / 9	100	3 / 9	33
BRITDESC	Describe Rituals With Body	4 / 9	44	9 / 9	100	4 / 9	44
PRESBDS	Killer's Home to Disposal Site	3 / 9	33	4 / 9	44	2 / 9	22
VRESBDS	Victim's Home to Disposal Site	7 / 9	78	7 / 9	78	6 / 9	67
KNOWSBDS	Killer Familiar With Disposal Site	8 / 9	89	3 / 9	33	3 / 9	33
462 TIMEBFOR	Stayed With Body Pre-Disposal	6 / 9	67	7 / 9	78	5 / 9	56
TIMEDRNG	Stayed With Body at Disposal	2 / 9	22	7 / 9	78	2 / 9	22
TKCLDESC	Description of Clothing Removal	6 / 9	67	5 / 9	56	8 / 9	89
KEEPITEM	Took/Kept Items from Victim	7 / 9	78	3 / 9	33	3 / 9	33
SAWDISCV	Killer Observed Body Discovery	7 / 9	78	4 / 9	44	3 / 9	33

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