

Examining the Criminal Histories of Homicide Offenders:  
A Comparison of Single-Victim and Serial Homicide and the Link between Prior  
Offending and Homicide Crime Scene Behaviors

by

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A dissertation submitted to the Graduate Faculty in Criminal Justice in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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## Abstract

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Advisor: C. Gabrielle Salfati, Ph.D.

This study was undertaken to test the assumptions of early behavioral typologies of homicide and serial homicide, which proposed that individuals committing similar homicides would have committed similar prior offenses. Additionally, due to the lack of empirical studies directly comparing single-victim and serial homicide offenders, these offenders were directly compared in the current study in terms of their criminal histories and homicide crime scene behaviors. The broad aim of this was not only to refine any true differences and similarities between single and serial homicide offenders' criminal histories, but also to explore whether an empirical link between prior offending and current crime scene actions could be established. If there is an underlying psychology to offender characteristics and crime scene actions as assumed in offender profiling, offenders should demonstrate thematic consistency between their prior crimes and current homicide behaviors and, therefore, investigators would be able to use such information to refine suspect lists in investigations.

Four theoretical frameworks of potential patterns in offender criminal history were proposed and tested on a sample of 122 single-victim offenders and 9 serial offenders using Smallest Space Analysis. Using an approach that focuses on the co-occurrence of offenses across the sample of offenders, the results demonstrated that both single and serial offenders' criminal histories could be best conceptualized according to a framework of criminal specialization. Although single and

serial offenders' criminal histories did not differ in terms of the degree of specialization as originally proposed, they did differ in terms of the type of offending specialization they demonstrated.

Once this framework was developed, the crime scene behaviors of both groups of offenders were examined and a thematic division was evident between behaviors that were hostile versus cognitive. Moreover, within this framework, offenders fell along a continuum of behaviors from highly impulsive (single-victim) to more controlled (serial) actions. However, only a small proportion of serial offenders demonstrated thematic consistency between criminal history and current homicide behaviors in the manner assumed by early profiling research. Overall, the results caution against using criminal history to profile single-victim and serial homicide offenders.

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## Disclaimer

Serial homicide cases were drawn from closed, fully adjudicated state and local cases that were contributed from law enforcement agencies from around the country for the purpose of research. All identifiers, including names of victims, suspects, offenders, officers, departments and correctional agencies, are removed. Only aggregate data are reported on.

The authors would like to express their gratitude to the FBI's Behavioral Science Unit for coordinating access to the serial homicide data used in this study. The author's opinions, statements and conclusions should not be considered an endorsement by the FBI for any policy, program or service.

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# **CHAPTER 1: EXAMINING THE CRIMINAL HISTORIES OF HOMICIDE OFFENDERS: A COMPARISON OF SINGLE-VICTIM AND SERIAL HOMICIDE AND THE LINK BETWEEN PRIOR OFFENDING AND HOMICIDE CRIME SCENE BEHAVIORS**

## **1 INTRODUCTION**

Early attempts to profile those who commit homicide and serial homicide tended to focus on the “probable psychopathology or personality type of the offender” (Hakkanen, Lindlof, & Santtila, 2004, p. 17) and are increasingly criticized for their lack of reliability, validity, and utility (e.g., Alison, Smith, Eastman, & Rainbow, 2003; Godwin, 2002; Kocsis, 2003; Kocsis, Hayes, & Irwin, 2002; Pinizzotto & Finkel, 1990). Empirical studies that provide reliable and tested information pertaining to homicide and serial homicide, and other violent offenses, in terms of profiling applications have only recently been undertaken and nearly all such studies have been conducted by a small group of researchers in the field of Investigative Psychology (e.g., Alison, Bennell, Mokros, & Ormerod, 2002; Beauregard & Proulx, 2002; Canter & Wentink, 2004; Canter, Alison, Alison, & Wentink, 2004; Godwin, 2000; Lundrigan & Canter, 2001; Salfati, 2000; Salfati, 2003; Salfati & Bateman, 2005; Salfati & Taylor, 2006; Santtila, Hakkanen, Canter, & Elfgrén, 2003; Snook, Zito, Bennell, & Taylor, 2005). Establishing an empirical foundation for links between offender characteristics and crime scene actions would open up the field of offender profiling to empirical scrutiny and provide more reliable information to investigators and criminal justice practitioners (Canter, 2000).

Though research in this field is steadily increasing, empirical studies have focused largely on aspects of serial homicide pertaining to the spatial behavior of offenders (e.g., Lundrigan & Canter, 2001; Rossmo, 1993; Snook, Canter, & Bennell, 2002), themes – psychological or

theoretical constructs underlying groups of variables – in crime scene behavior and their relation to offender characteristics (e.g., Godwin, 2000; Kocsis, Cooksey, & Irwin, 2002a; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003), or consistency in crime scene actions across a series of homicides (e.g., Bateman & Salfati, 2007; Salfati & Bateman, 2005). Other core aspects of homicide and serial homicide have not been the primary focus of research, including offender criminal history and its link to behaviors committed at the homicide crime scene.

Furthermore, while both homicide and serial homicide have been studied separately in detail (e.g., Block & Christakos, 1995; Decker, 1993; Decker, 1996; Hickey, 2006; Maxson, Gordon, & Klein, 1985; Messner & Tardiff, 1985; Salfati & Bateman, 2005; Salfati & Canter, 1999; Wolfgang, 1958), there are few studies that undertake a direct comparison of single-victim and serial homicide in order to more clearly delineate the differences and similarities between these offenders. There have been *no* studies to date that attempt to determine if discernable patterns exist between the prior offenses of single and serial homicide offenders and if such patterns could be linked to patterns in crime scene behaviors. Knowledge of the criminal history of an offender and how it relates to crime scene actions would allow investigators to better identify a viable pool of suspects through searches of existing databases (i.e., probation, parole, sex offender registries, etc.) (Lavigne & Groff, 2001). By comparing serial and single homicide, the identification of specific homicide crime scene actions could feasibly be used by investigators to differentiate serial from single homicide crime scenes early in an investigation and adjust further efforts accordingly.

Therefore, the present study will examine the criminal histories of single and serial homicide offenders in order to determine if there are significant differences in prior offending patterns between these offenders and if these offenses can be conceptualized within the context

of a specific thematic framework. Furthermore, it will be examined if the themes evident in offenders' criminal history are reflected in the actions committed at the homicide crime scene(s). The current study will not only contribute to the existing literature on differentiating these offenders, but it is also hoped that this study will contribute to a neglected topic in the criminal justice literature in terms of overall offending patterns among homicide offenders and empirical validation of specific tenets of offender profiling, which, at its core, seeks to enhance investigative techniques used by criminal justice practitioners.

## **1.1 LITERATURE REVIEW**

### **1.1.1 Early Approaches to Offender Profiling**

Early research on offender profiling, particularly that focusing on serial homicide offenders, was derived mostly from small-scale studies (e.g., Brittain, 1970; Ressler, Douglas, & Burgess, 1995; Warren, Hazelwood, & Dietz, 1996) that used unrepresentative samples and the autobiographical accounts of experienced homicide investigators (e.g., Douglas & Olshaker, 1995; Keppel & Birnes, 1997; Ressler & Shachtman, 1992). These early studies attempted to classify homicide offenders into rigid typologies according to their crime scene behaviors and the relation of these behaviors to the offender's personal characteristics to develop psychological profiles.

Only recently have the assumptions derived from this body of work begun to be tested using the same scientific and empirical approaches common to other areas of psychology and the behavioral sciences (Canter, 2003). By employing the process of inductive reasoning, in which multiple studies are conducted on large, representative samples of offenders testing hypotheses about the actual occurrence or co-occurrence of specific, objective crime scene actions can inferences be drawn that are useful to investigators (Canter & Youngs, 2003). This approach

attempts to identify empirically established and reliable relationships set forth in what is referred to as the “A to C equation” in which “A are the Actions related to the crime and C are the Characteristics of typical offenders for such crimes” (Canter & Youngs, 2003, p. 187). Establishing an empirical foundation for some of the A to C deductions previously emphasized in offender profiling would open up the field as a whole to empirical scrutiny and ultimately provide more reliable information to investigators (Canter, 2000).

### Linking Crime Scene Actions and Offender Characteristics in Early Research

Research focusing on actions committed by an offender at the crime scene and the likely characteristics of the offenders has used a variety of approaches. Both typologies provided by Holmes and Holmes (2002) and Ressler et al. (1995) proposed clear links between certain crime scene actions and offender characteristics; however, the typologies have been criticized for not clearly documenting the data used to support their propositions and using biased samples (see Alison [2005] for a discussion). Other studies have relied on statistical methods that identify relationships between a single crime scene action and single offender characteristic. For example, Wolfgang (1958) identified significant relationships between the gender of the offender and a number of crime scene actions, including location, weapon used, and severity of attack. However, using single item-to-item correlations such as this ignores the more complex relationships that may depend on other variables or situational factors (Salfati, 2003). The methodological problems inherent in these studies (see Canter and Wentink [2004] for a discussion) has opened the door to more detailed empirical research seeking to link crime scene behaviors to offender characteristics. Produced primarily by researchers within the field of Investigative Psychology (IP), the majority of these studies employ multi-dimensional scaling (MDS) analysis that allows the researcher to consider the relationship of every variable to all

others through the identification of themes – psychological or theoretical patterns underlying a group of individual variables or behaviors (Salfati, 2003). This body of research has found that it is possible to identify statistically significant predictors of offender characteristics from crime scene actions in burglary (e.g., Santtila, Ritvanen, & Mokros, 2003), rape and serial rape (e.g., Hakkanen, Lindlof, et al., 2004; Kocsis et al., 2002a), single-victim homicide (e.g., Salfati, 2000; Santtila, Hakkanen, et al., 2003), and serial homicide (e.g., Bateman & Salfati, 2007; Godwin, 2000; Salfati & Bateman, 2005).

These studies have produced some support for the idea that conclusions regarding an offender's background can be drawn from their crime scene actions. However, criminal history does not receive more than tangential attention in these studies, despite the fact that it may be a particularly useful piece of background information to investigators. The current study seeks to contribute to this effort by identifying empirically derived relationships between an offender's criminal history and actions committed at the homicide crime scene(s) using a thematic approach, while comparing single and serial homicide throughout. The primary aim of this study is to not only contribute to the overall knowledge base regarding homicide and serial homicide, but to provide tested and reliable constructs that investigators can draw upon in prioritizing suspects based on prior criminal offending. However, in order to hypothesize patterns in prior offending, a brief review of the literature regarding the general nature of single-victim and serial homicide is provided.

### **1.1.2 Single-Victim Homicide**

Homicide has long been a subject of intense interest among psychologists, criminologists, and practitioners, yet, only a few studies have attempted to ascertain the fundamental characteristics of the “average” homicide event (e.g., Decker, 1993; Decker, 1996; Messner &

Tardiff, 1985; Wolfgang, 1958). Much of the research in this area has instead focused on violent behavior in general (e.g., Toch, 1992) or on a very specific sub-type of homicide, such as domestic homicide (e.g., Avakame, 1998; Bixenstine, 1996; Block & Christakos, 1995; Johnson & Hotton, 2003) or sexual homicide (e.g., Ressler et al., 1995; Schlesinger, 2004) rather than examining homicide as whole.

The picture of the ‘average’ homicide is largely drawn from national statistics and a sample of well-known studies. Perhaps the most renowned of these studies was conducted nearly fifty years ago, but is still cited today (e.g., Hickey, 2006; Salfati, 2003; Salfati & Canter, 1999; Schlesinger, 2004; Serran & Firestone, 2004). Wolfgang (1958) examined 588 cases of criminal homicide in Philadelphia and provided an exhaustive examination of the nature of homicide. According to his findings, the average homicide offender was male (82%), in their twenties, and African American (75%). The average homicide victim was also male (76%), 3.2 years older than the average offender, and African American (73%). Furthermore, the typical manner of death was stabbing (39%), followed closely by shooting (33%), was almost equally likely to occur outside the home (49%) as in the home (51%), involved alcohol (alcohol present in both victim and offender in 44% of cases), contained two to five acts of violence (30%), and occurred in the course of some sort of altercation, such as a verbal dispute (37%). More than two-thirds of all homicides involved a victim and offender who were “primary contacts” (i.e., family, intimate partner, paramour, close friend) (Wolfgang, 1958, p. 207). Wolfgang’s findings provided one of the first comprehensive pictures of the average homicide event and offender. Of particular note – considering that Wolfgang himself acknowledged that many “scholars in criminology...contend that the typical person who commits criminal homicide is a first offender” (p. 168) – was his finding that more than two-thirds of his sample (64%) had a criminal record,

usually for an offense against a person (66%). This study provides a stable historical base for the hypothesis that a significant proportion of single-victim homicide offenders have a criminal record prior to the homicide.

Many of Wolfgang's (1958) findings have held over time and are reflected in current homicide statistics. Current national homicide statistics demonstrate that the typical homicide event involves a male victim (77%) and male offender (90%), who are relatively young (i.e., one-third of victims and one-half of offenders are under the age of twenty-five), an African American offender (52%), the crime is intra-racial (86% of White victims are killed by White offenders and 94% of Black victims were killed by Black offenders) (Bureau of Justice Statistics (BJS), 2006), and the weapon used is a firearm (70%) (Federal Bureau of Investigation (FBI), 2004). General trends indicate that female victims are significantly more likely to be murdered by a current or former intimate partner, while males are more likely to be murdered by an acquaintance or friend (BJS, 2006) and about one-quarter of homicides involved a stranger victim-offender relationship (FBI, 2004). Of those cases in which the offender and victim are known to one another, there is some evidence to suggest that the intensity of the relationship may not be as strong as commonly assumed. For example, Decker (1993) found that 46% of all homicides in his sample involved "acquaintances" opposed to more intimately connected individuals. The circumstances of the homicide are unknown in more than one-third of reported cases, with approximately 23% of homicides being committed in the course of another felony (i.e., robbery, rape, burglary, etc.), 44% of homicides occurring during the course of an argument, and 13% during a fight or gang conflict (FBI, 2004). A closer look at several of the various sub-types of homicide commonly studied separately presents a more detailed picture.

National statistics give an overall picture of the ‘average’ homicide event, but much of the research in the homicide literature was not undertaken with the intention of applying this knowledge directly to police investigations of homicide. What is still needed are additional studies that attempt to provide empirically established relationships between the characteristics of an offender (e.g., criminal history, demographic characteristics, etc.) and the physical actions committed at the crime scene (e.g., homicide location, weapon used, wounding patterns, post-mortem behaviors, etc.) that can be directly applied by investigators. Studies that establish patterns in prior offending and their relation to homicide crime scene actions could be of significant use due to the specificity and practical utility of such information. This is perhaps even more so in investigations of serial homicide in which the quick identification of the potential offender is essential in preventing future deaths. An examination of the general nature of serial homicide will provide a foundation for the development of potential theoretical points of difference between single and serial homicide offenders, including their criminal history.

### **1.1.3 Serial Homicide**

Much of the serial homicide literature and many of the assumptions made regarding serial murder are derived from early studies conducted by a handful of researchers and practitioners who were attempting to develop typologies of serial homicide offenders (e.g., Holmes & Holmes, 2002; Keppel & Walter, 1999; Ressler et al., 1995). These typologies typically assumed that groups of crime scene actions revealed certain offender characteristics and personality traits and therefore, offenders could be grouped into one of several types. For example, Ressler et al. (1995) provided one of the first and most well-known typologies of serial homicide that classifies offenders into either organized or disorganized types based on the characteristics of the crime scene. However, this study was exploratory, based on a small sample

of select offenders, and empirical studies have failed to support the dichotomy (Canter et al., 2004). Essentially, profiles based on the FBI's early work began to appear in popular media with predictable regularity (see Canter and Youngs [2003] for a discussion of the 'Hollywood Effect' of early offender profiling literature) before sufficient empirical research had been conducted to back up the assertions contained in the model. Similarly, Holmes and Holmes (2002) proposed a typology with four types of serial offenders; however, the authors did not provide detailed methodological information or identifiable empirical support for their conclusions. This typology has not held-up to empirical scrutiny either (Canter & Wentink, 2004). To date, the typology provided by Keppel and Walter (1999) remains untested by empirical research.

Both historical and contemporary examinations of serial homicide have suggested that serial murder is predominantly a crime committed by White males (e.g., Godwin, 2000; Ressler et al., 1995; Warren et al., 1996). However, it has been argued by some that this may simply be a product of biased sampling, largely arising from restrictive definitions. Another explanation proposed by Jenkins (1993) argues that Black serial murderers may be under-counted because the crime is largely intra-racial and police may not as aggressively investigate murders where the victims are minorities. Additionally, female offenders are frequently excluded from examinations of serial homicide. This may be due to the fact that most serial offenders are male (e.g., 83% cited by Hickey [2006]) but may also arise from the fact that women who kill multiple victims either typically do so for profit (i.e., "Black Widows") or target victims in their care for attention or to attain feelings of power (i.e., hospital workers who kill their patients), while male offenders are typically cited as having a sexual motive (Ferguson, White, Cherry, Lorenz, & Bhimani, 2003). While multiple authors have attributed a sexual element to some cases of serial homicide (e.g., Brittain, 1970; Cook & Hinman, 1996; Douglas & Olshaker, 1995; Holmes &

Holmes, 2002; Ressler & Shachtman, 1992; Ressler et al., 1995; Schlesinger, 2004; Warren et al., 1996), there are problems with automatically ascribing a sexual motive to all cases of serial homicide. Due to difficulties with defining serial homicide in general and in determining what crime scene behaviors constitute a sexual component, little empirical research is available demonstrating a clear sexual element in all serial homicide cases. For example, should only overt sexual behaviors be counted or can covert behaviors manifest in such actions as excessive wounding to the victim; if the latter is included in the definition, it is difficult to objectively identify and empirically measure. Because research conducted on large samples of serial homicide offenders that empirically examines a potential sexual element is rare, it would be premature to mandate a sexual motivation to all cases of serial homicide at this point. This, however, is a hypothesis that can be subjected to empirical scrutiny and it is possible that a subgroup of offenders within the current study may be identified as having an objective sexual element.

Unfortunately, basic descriptive statistics of the general demographic characteristics of serial murderers are relatively rare compared to those available for single-victim homicide and those that do exist vary. This can be attributed to the lack of an agreed upon definition of serial homicide and from the fact that serial homicide itself is a rare phenomenon and no national statistics are kept. However, there are a few studies using large samples of cases that can provide a general picture of serial homicide. Hickey (2006) examined 367 cases of serial homicide involving 431 offenders. Briefly, Hickey suggests that approximately 83% of serial murderers are male, young with an average age of 28 years, Caucasian (72%), typically murder strangers (71%) versus acquaintances or family (11%), are of average intelligence employed in a blue-collar occupation, and rarely kill more than ten victims, though he provides no identifiable

statistics for these latter conclusions. Godwin (2000) examined a sample of 107 U.S. serial murderers and found that offenders have an average age of 30 years (28% were between 26 and 31), 62% target strangers only, 95% are male, 82% were White, 67% were employed, 59% were married, 56% did not complete high school, 28% had received some type of treatment for a mental health problem, and 27% had served in the military.

The studies by Hickey (2006) and Godwin (2000) are two examples of comprehensive examinations of a large sample of serial murderers in terms of the general population make-up of serial homicide offenders, similar in depth and scope to that of Wolfgang's (1958) study of single-victim homicide. However, descriptions of serial homicide and offenders usually vary according to the definition employed, making generalizations across samples of serial homicide offenders difficult (Ferguson et al., 2003).

The fact that serial homicide has been hampered by difficulties in defining the crime itself and that single-victim homicide is usually examined according to a specific sub-type (e.g., felony homicide, gang-related homicide, domestic/spousal homicide, etc.), may be reasons why direct comparisons of serial and single-victim homicide are rare. Due to the lack of direct empirical comparisons, the degree to which these offenders/offenses truly differ is not clear and assumptions that attempt to differentiate these offenders according to their crime scene behavior or characteristics, such as criminal history, are unlikely to have sound empirical backing. Research that identifies points of difference or similarity in the prior offending of these two types of offenders could be used to differentiate their criminal trajectories and yield a deeper understanding of the overall criminality of homicide offenders.

### **1.1.4 Offender Criminal History**

Most studies in the offender profiling literature that have examined offenders' criminal histories do not give it primary focus and do not consider homicide within the context of overall patterns of criminality. Yet, historical and contemporary studies show that the proposition that homicide offenders are unlikely to have committed prior offenses is largely false in both single (e.g., Santtila, Hakkanen, et al., 2003; Santtila, Runtti, & Mokros, 2004; Soothill, Francis, Ackerley & Fligelstone, 2002; Wolfgang, 1958) and serial homicide (e.g., Arndt, Hietpas & Kim, 2004; Godwin, 2000; Hickey, 2006; Holmes & Holmes, 2002). Closer examination of an offender's overall criminality will aid in the development of testable theoretical frameworks that can be further refined to more clearly outline how this information could be used in homicide investigations.

#### *1.1.4.1 Criminal History among Serial Homicide Offenders*

The serial homicide literature demonstrates that there is some disagreement as to what types of offenses are likely to be prevalent, though a significant proportion of offenders do in fact have a criminal record and prevalence rates have been established at 51% by Arndt et al. (2004) and 68% by Hickey (2006). Furthermore, Godwin (2000) found that more than 60% of his sample had prior convictions for burglary, theft, or robbery, with only about one-quarter exhibiting prior violent offenses. Similar patterns were found by Hickey (2006) with 45% committing prior property crimes, 38% committing sex offenses, and 8% committing assault. While the disagreement in the rates of these prior offenses may simply be a product of the samples used or offense definitions, there seems to be a greater likelihood of property or theft-related offenses appearing in the criminal background of serial homicide offenders.

In the two studies to date that directly compare the criminal histories of single-victim and multiple-victim homicide offenders, Wright, Pratt, and Delisi (2008) make note of an assumption in the literature that multiple homicide offenders, in essence, specialize in murder and do not commit other types of criminal activity that would have brought them into view of investigations. However, their own results refute this notion. Similarly, Delisi and Scherer (2006) found that approximately 30% of their sample of multiple homicide offenders not only had a criminal record, but were in fact habitual offenders and offenders “with prior rape convictions, misdemeanor convictions, more extensive prison histories, and current involvement in rape and burglary are more likely to kill multiple victims” (p. 367). Only 38% of multiple homicide offenders had no prior arrests (Delisi & Scherer, 2006). While providing some help in terms of direct comparisons of multiple to single homicide offenders, both of the studies by Delisi and Scherer (2006) and Wright et al. (2008) examined *multiple* homicide offenders – including single events with two victims (i.e., double homicide events). These studies did not examine serial homicide, where more than two victims are usually required by definition (see Ferguson et al. [2003] for a discussion of definitional issues pertaining to serial homicide) and used only a few select measures of criminal offending. Using an approach that focuses on how offenses co-occur across a sample may be better able to identify true offending patterns across the totality of offenders’ prior crimes for serial and single offenders. Still, the literature on serial homicide presented in this section provides a basis of comparison to single-victim offenders who have been studied more extensively.

#### *1.1.4.2 Criminal History among Single Homicide Offenders*

Counter to the notion that the average homicide involves a first-time offender, the prevalence rates for criminal history among these offenders have been established at 30% by

Santtila et al. (2004) among homicides in Finland, 68% by Soothill et al. (2002) among homicides in the U.K., 23%, by Copes, Kerley, and Carroll (2002), 43% by Cook, Ludwig, and Braga (2005), 57% by Broidy, Daday, Crandall, Sklar, and Jost (2006), and 64% by Wolfgang (1958) among homicides in the U.S. Of those offenders with a criminal history in Wolfgang's (1958) sample, 66% had a prior record for crimes against person (48% for aggravated assault) and 34% had a criminal history for other types of offenses (9% for property offenses). Recent research has reaffirmed the likelihood that a homicide offender is likely to have committed previous crimes, but similar to the literature pertaining to serial homicide, there seems to be a greater proportion of prior property or theft-related offenses as opposed to violent offenses, which is in disagreement with the findings of Wolfgang (1958). For example, Soothill et al. (2002) found that among homicide offenders with a criminal record, 72% had prior convictions for theft and handling stolen goods, 61% for burglary, 57% for a violent offense, 20% for robbery, and 5% for sex offenses. However, it is important to note that more than half the sample provided by Soothill et al. (2002) had a prior record for a violent offense, compared to only 25% of the sample of serial homicide offenders provided by Godwin (2000) and 8% in Hickey's (2006) sample. This demonstrates that single-victim offenders may be more likely to have a recorded history of violence compared to serial offenders and it is such comparisons between these offenders that are important to the current study.

Enough research exists demonstrating that there is a significant likelihood that single and serial homicide offenders have a prior criminal history. However, little empirical research exists that attempts to specifically determine what patterns, if any, exist in the criminal histories of single and serial homicide offenders and the differences between them. For this reason, such an examination is being undertaken in the project proposed here. Taking the above findings into

consideration, it is expected that trends similar to those identified in previous studies will emerge in the criminal histories of offenders in the current study. However, if the aim is to differentiate between different patterns or themes in the criminal histories of single and serial offenders, it is important to determine the degree to which offenders tend to commit similar types of offenses across their offending career prior to the homicide – the degree of criminal specialization.

#### *1.1.4.3 Criminal Specialization*

There seems to be a consensus in much of the general criminological literature suggesting that there is a core sub-set of offenses in which most offenders are involved, supporting the notion that most offenders are generalists (e.g., Britt, 1994; Klein, 1984; Parkinson, Shrimpton, Oates, Swanston, & O'Toole, 2004; Simon, 1997; Youngs, Canter, & Cooper, 2004). For example, in a meta-analysis of thirty-three studies of specialization among juvenile offenders, twenty-one studies were supportive of generality in offending, eight provided mixed support, and four demonstrated evidence of specialization (Klein, 1984). In contrast to the generalist model, Francis, Soothill, and Fligelstone (2004) found that older males tended to show increased specialization with age and considerable specialization across all age groups of female offenders. However, these studies examine criminal offending as a whole and do not consider specialization in prior criminal activity among offenders currently under arrest for a certain crime, such as homicide. Moreover, most studies of specialization rely on legal classifications or labels for offenses and overlook the potential themes that underlie different types of offenses that may indicate specialization.

The focus on the legal classifications of criminal offenses in most studies of specialization may help to explain the findings of some authors showing that specialization in offending is rare (e.g., Britt, 1994; Farrington, Snyder, & Finnegan, 1988; Simon, 1997).

Focusing on the legal classification of offenses (e.g., the UCR definition of the offense) accepts “a restricted perspective for examining patterns in offenders’ behavior and may consequently overlook important similarities and differences” across legally defined criminal offenses that may be linked through psychological or criminological constructs (Salfati & Taylor, 2006, p. 107). For instance, Soothill et al. (2002) examined the prior criminal histories of homicide offenders and found that offenders with certain offenses (i.e., criminal damage, other wounding, robbery, arson, theft from automated machines, wounding/endangering life, absconding from lawful custody, kidnapping, manslaughter, blackmail, soliciting by a man, adulteration of food or drugs) in their criminal history had a significantly greater likelihood of committing a homicide. At the same time other offenses were associated with a decreased risk of committing a homicide (i.e., other theft, shoplifting, receiving, fraud, theft from vehicles, drug offenses, attempting to pervert course of justice) (Soothill et al., 2002). Examining the separate legal classifications of the offenses fails to exhibit any degree of specialization. However, a closer examination of potential themes underlying these offenses suggests that single-victim homicide offenders in their sample may demonstrate a greater likelihood of specialization in thematically related offenses pertaining to violence (against person or property) or antisocial activities (e.g., criminal damage, soliciting by a man, etc.) and less likely to demonstrate specialization in thematically related offenses pertaining to deception or dishonesty (e.g., fraud, attempting to pervert course of justice, etc.). Viewing specialization along thematic lines should not be interpreted to mean that offenders only specialize if they have the same legally classified offense in their criminal history (e.g., breaking and entering versus grand larceny, etc.). Instead, offenders can be said to specialize if the bulk of their prior offenses tend to concentrate around a group of similarly themed crimes (i.e., crimes that demonstrate exploitation versus aggression versus antisocial

acts, etc.). By the same token, generalization in prior offending does not refer to only different legally classified offenses, but that the groups of offenses do not share a common underlying theme. If specialization can be reflected in themes underlying disparate offenses, links could be made between homicide and overall patterns of prior criminal offending and offenders could be grouped according to these themes and the similarities and differences between single-victim and serial offenders could be made clearer.

### **1.1.5 The Thematic Approach to Crime Scene Analysis**

Early attempts to examine single and particularly, serial homicide resulted in classification systems that attempted to sort offenders based on individual crime scene behaviors or proposed offender characteristics without taking into account the prevalence of these behaviors or the relationships between them (e.g., the classification systems provided by Holmes and Holmes [2002], Keppel and Walter [1999], and Ressler et al. [1995]). Studies with a stronger empirical design have also been criticized as portraying only a limited view of criminal behavior and its relation to offender characteristics. For example, Davies, Wittebrood, and Jackson (1997) examined a number of crime scene actions in rape and offender characteristics using bivariate measures, or item-to-item correlations in which a single crime scene action is linked to a single offender characteristic. Using this method, the authors were able to identify simple relationships, such as rape offenders who took precautions not to leave fingerprints were four times more likely to have a previous conviction for burglary (Davies et al., 1997). While results such as these provide a basic understanding of how crime scene actions relate to offender characteristics, item-to-item correlations fail to account for relationships between the remaining variables or any type of situational influence; this approach does not account for the fact that an

offender may not display a specific behavior at each incident, but may employ a different behavior that is thematically similar (Salfati, 2003).

The thematic approach to offender profiling attempts to overcome these problems. A thematic framework explicitly identifies patterns among variables that are tied together by an underlying theoretical link – a theme (Salfati, 2003). To identify themes in crime scene behaviors and offender characteristics, studies typically use multi-dimensional scaling (MDS) procedures for analyses that allow the researcher to consider each variable in relation to all other variables, something not possible using item-to-item correlations. In relation specifically to offender profiling, most studies employing a thematic approach have come from within the field of Investigative Psychology rather than from the general psychological or criminal justice literature (Canter, 1994). However, MDS procedures have been used and validated in other areas of research outside of criminal behavior, such as educational (e.g., Maslovaty, Marshall, & Alkin, 2001), psychiatric (e.g., Schultze-Lutter, Steinmeyer, Ruhrmann, & Klosterkötter, 2008), personality (e.g., Zak, 1982), and advertising research (e.g., Hetsroni, 2000), as well as research on social attributions (e.g., Wilson & Mackenzie, 2000).

Studies of crime scene behavior have provided substantial support for the notion that offenders may be more appropriately conceptualized across thematic frameworks as opposed to rigid typologies or dichotomies. Human behavior rarely falls into discrete and distinct categories and some typologies demonstrate an overlap of behaviors between types (e.g., Holmes & Holmes, 2002; Ressler et al., 1995) and, therefore, cannot effectively sort offenders into the proposed classifications (Canter et al., 2004; Canter & Wentink, 2004). Conversely, the thematic approach to examining crime scene behaviors begins with the premise that the offender may demonstrate behaviors characteristic of several themes “but should primarily fall under only one

main theme” (Salfati & Bateman, 2005, p. 135). This is important because it accounts for gradations in the degree to which a given offender will fall under a given theme.

A growing body of research provides evidence for the theoretical and empirical validity of the thematic approach in identifying themes that theoretically tie together distinct crime scene behaviors in single and serial homicide (e.g., Canter & Heritage, 1990; Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, & Santtila, 2004; Salfati & Bateman, 2005; Santtila, Hakkanen, et al., 2003; Youngs et al., 2004). Therefore, the thematic approach may be an appropriate methodology for examining patterns in the prior offending of homicide offenders and linking prior offending to actions committed at the subsequent homicide crime scene(s). Yet, no studies could be located that examined whether offenses committed prior to a homicide or homicide series follow any sort of pattern in which different offenses can be viewed within the context of their underlying themes, as opposed to exclusive focus on the legal classifications of offenses. It is theoretically possible to combine different offenses into groups “so that one offense category correspond[s] to one underlying theoretical construct” (Farrington et al., 1988, p. 482). Therefore, identifying themes in offenders’ prior offenses would allow for a better conceptualization of criminal history among single and serial homicide offenders by accounting for potential relationships between different criminal offenses, such as those that are likely or unlikely to co-occur in an offender’s record. A previous section examined overall patterns in the prior offending of single and serial offenders and the major differences between single and serial offenders. The following sections will focus specifically on theoretical differences and similarities between single and serial offenders and the potential themes that may be evident in their prior offending.

#### *1.1.5.1. Single-Victim Homicide: Impulsive Crime*

Previous sections have identified multiple studies that demonstrate that single-victim homicide usually arises from an interpersonal dispute or is an aggressive reaction to a specific situation that occurs between two individuals known to one another. Collectively, this indicates that the average single-victim homicide is highly impulsive or situational and is committed by individuals who may display a history of reacting aggressively to adverse situations or conflicts. In other words, these individuals may have established aggressive scripts built through previous experiences and social interactions that are stored in the individual's "memory and are used as guides for behavior and social problem solving" in the future; the more an individual relies on aggression in their interpersonal and situational experiences, the more ingrained these aggressive responses become and the more easily they are retrieved in future situations (Salfati, 2003, p. 491). Therefore, single-victim homicide offenders may have an impulsive nature across multiple areas of their lives including their criminal history and a theme emphasizing impulsivity and aggression may most accurately conceptualize these offenders' criminal histories and differentiate them from serial homicide offenders.

#### *1.1.5.2 Serial Homicide: Exploitative Crime*

Uniting many of the commonly cited components of serial homicide – the targeting of strangers, possible predatory nature of their homicides, and possible sexual elements, combined with the fact that serial offenders' criminal histories tend to show a prevalence of property crimes over other types of offenses (e.g., Godwin, 2000; Hickey, 2006) – is an underlying theme of exploitation of both people and property aimed at satisfying an ulterior motive or need of the offender. The predatory nature of serial homicide and targeting of strangers may simply be reflections of the means by which offenders rationally choose to satisfy their needs by

minimizing the risk of detection and maintaining control of their crimes. In other words, a controlled and exploitative theme in the criminal histories of serial homicide offenders could be linked to the rational choice perspective provided by Cornish and Clarke (1986) in the sense that offenders' choices may be guided by the attainment of ulterior motives in their offending (i.e., money, property, sex, etc.) and attempt to control the relative risks through predation and targeting of strangers. This suggests that serial homicide may best be viewed as less impulsive than single-victim homicide, with a higher degree of planning and control exhibited in their current homicides and a higher degree of specialization in their prior offenses that may be more focused on material or tangible benefits obtainable through the crime.

Despite the lack of studies directly comparing single and serial homicide, the bulk of the literature examining these offenders/offenses in isolation shows some overlap among serial and single homicide offenders on certain factors and thematic patterns present in both serial and single homicide offenses, highlighting potential points of similarity.

#### *1.1.5.3 Points of Similarity: The Expressive/Instrumental Framework*

Feshbach (1964) differentiated between two types of human aggression – hostile (expressive) and instrumental aggression. Instrumental aggression “is directed toward the achievement of nonaggressive goals, and *hostile* aggression...[in which] the goal response is injury to some object” or person (Feshbach, 1964, p. 258). This idea of expressive and instrumental aggression has been used by psychologists and criminologists to differentiate aggressive responses that are aimed at an ulterior goal for personal gain and aggressive responses that are more impulsive or destructive (Toch, 1992). Numerous other authors have further examined this framework, or slight variations, in samples of homicide offenders (e.g., Last & Fritzon, 2005; Salfati, 2000; Salfati, 2003; Salfati & Canter, 1999; Salfati & Dupont, 2006;

Salfati & Haratsis, 2001; Santtila, Hakkanen, et al., 2003) finding that crime scene actions can be distinguished according to the instrumental/expressive themes, as can offender characteristics. In the only application of the expressive/instrumental thematic framework to serial homicide, Salfati and Bateman (2005) found that 64% of the sample examined could be classified according to the themes of expressiveness or instrumentality.

Since the expressive/instrumental thematic framework has been applied and held in examinations of both single and serial homicide, it is possible that offenders may demonstrate a criminal history reflective of these themes. However, it has been discussed previously that there are noted points of difference between single and serial homicide offenders and these may indicate a need for further refinement of the model in its application to the criminal histories of serial and single homicide offenders. A model that allows for some gradations in prior offending between the degree of instrumental and expressive offenses in an offenders' record could provide a better conceptualization of offender criminal history. Therefore, it may be that there is some overlap between offender types on certain measures and this overlap between single and serial offenders may represent sub-groups of offenders, which will be explored in the current study.

### **1.1.6 Predicted Thematic Emphasis in the Criminal Histories of Homicide Offenders**

This section outlines four specific frameworks that essentially present different ways to examine the same general thematic concepts and where the primary difference between cases is where their emphasis lies within these frameworks to allow for the best conceptualization of single and serial offenders. Determining which one, if any, of these frameworks conceptualizes the criminal history of offenders is the primary aim of the current study.

### *1.1.6.1 Degree of Impulsivity*

The criminal histories of single and serial homicide offenders may occur along a continuum of impulsivity, marked by high impulsivity (characterized by prior aggressive and antisocial crimes) in single-victim offenders and low impulsivity (characterized by exploitative crimes) in serial homicide offenders.

Many of the common demographic, descriptive, and temporal characteristics of the typical homicide can be viewed within the context of Routine Activities Theory (RAT), originally proposed by Cohen and Felson (1979). For example, Messner and Tardiff (1985) found that individuals “who lead lives that are centered around the home are precisely those who are most likely to be victimized at home and to be killed by family members” (p. 262), such as unemployed individuals, the very young or very old, and women. In accordance with the literature and statistics indicating that the average single-victim homicide arises out of an adverse situation between a victim and offender known to one another, the offender’s impulsivity may prime them to react aggressively in situations and with individuals that arise out of the course of their routine activities. Collectively, this suggests an overall highly impulsive nature that may manifest as prior aggressive/violent or antisocial crimes.

Conversely, the exploitative theme underlying many aspects of serial murder – specifically, the prevalence of prior property offenses, over-representation of strangers among their victims, and possible predatory nature – may indicate that their actions are aimed at achieving an ulterior goal. Therefore, the criminal histories of serial homicide offenders may cluster at the low end of a continuum of impulsivity.

### *1.1.6.2 Degree of Specialization*

The criminal histories of serial and single offenders will occur on a continuum from generalized – with an expected cluster of single offenders – to more specialized – with an expected cluster of serial offenders.

In short, the literature discussed previously indicates that single-victim homicide is largely impulsive or expressive in nature. If this is reflective of an overall behavioral style of impulsivity or low self-control, it is a logical assumption that these offenders will have a higher degree of generalization in their criminal history. Conversely, much of the literature suggests that serial homicide and the criminal histories of serial offenders are characterized by exploitation of both people and objects, particularly evident in the higher prevalence of property related crimes. Because this theme unites multiple aspects of serial homicide, offenders may show a higher degree of specialization in offenses that reflect this exploitative theme, although the offenses may have different legal classifications. Therefore, serial and single homicide offenders may be differentiated according to the degree of generality versus specialization demonstrated in their prior offending, with a higher degree of specialization among serial offenders.

### *1.1.6.3 Opposing Themes*

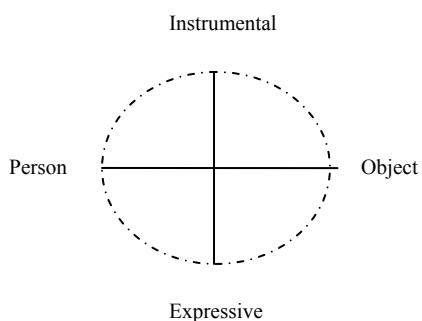
The criminal histories of serial and single homicide offenders may follow different overall themes of prior offending. Single homicide offenders would demonstrate themes of violent, opportunistic, or antisocial offenses. Serial offenders would demonstrate themes of exploitation (characterized by sexual and theft-related offenses) or dishonesty.

Given the differences that exist on important measures, single and serial homicide offenders may be best examined within the context of themes that emphasize their significant

points of difference. However, such a model would have to allow for some overlap; this is not problematic using the thematic approach because it allows for offenders to have characteristics of multiple themes though they fall primarily under one (Salfati & Bateman, 2005). Focusing on the differences in the victim-offender relationships and more situational/impulsive aspect of single homicide and more controlled/exploitative nature of serial homicide as distinct and important differences between these offenders, it is proposed that single-victim homicide offenders will demonstrate an overall theme of impulsivity, with concentrations of offenses that reflect either an antisocial theme (e.g., solicitation, drug/alcohol offenses, disorder/damaging, arson, etc.), a violent theme (e.g., assault, domestic homicide, etc.), or an opportunistic theme (e.g., theft-related behaviors). Conversely, the overall theme expected to be present in the criminal histories of serial homicide offenders is one of exploitation in which both people and property are a means to gratify an ulterior motive, demonstrating concentrations according to dishonest (e.g., fraud, handling stolen goods, forgery, etc.), property, and sexual offenses. Following this model, offenders will concentrate under the greater themes of impulsivity (single-victim) and exploitation (serial), but if some overlap is present it will be more likely to occur among theft-related and property offenses due to the likelihood of these offenses appearing in the criminal histories of both types of offenders (e.g., Godwin, 2000; Hickey, 2006; Santtila, Hakkanen, et al., 2003; Soothill et al., 2002) – possibly indicating a sub-group of offenders – and less likely to occur among antisocial, violent, or dishonest offenses. Furthermore, sexual and theft-related offenses, if present, will co-occur in both groups. Therefore, the most reliable discriminators in the criminal histories of serial and single homicide offenders may be crimes that have a violent (single), antisocial (single), or dishonest theme (serial).

#### 1.1.6.4 A Circumplex Model

Both serial and single homicide offenders' criminal histories would generally follow the expressive/instrumental framework discussed previously, but may differ according to the degree to which crimes are person oriented or object oriented, as in a circumplex model that would allow for gradations within the overall framework. The circumplex model is depicted in the figure below.



**Figure 1.1.1: The circumplex model.**

Up to this point, the thematic approach has been the focus of the proposed frameworks. However, previous studies employing this approach that examined the expressive/instrumental framework in both single-victim (Salfati, 2000; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003) and serial homicide (Salfati & Bateman, 2005) have demonstrated that, on average, about 62-65% of offenders could be classified as falling into one of the dominant themes. This suggests that the expressive/instrumental framework may need to be modified to account for a higher proportion of offenders. This could be accomplished through a framework that takes into account gradations between thematic foci as in a continuum and the circumplex model is such a framework. The boundary lines imposed in the above figure are simply reference points that highlight the overall model and do not indicate discrete types or thematic boundaries. Behaviors

or variables do not change suddenly as one moves from one region to the next; instead, there will be an area of overlap where variables take on the qualities of both (Porter & Alison, 2006a). “In this way, the relationship between the variables forms a continuous structure that can be described in terms of the degree of dimensions present in each variable.” (Porter & Alison, 2006a, p. 339) Therefore, the circumplex model combines the thematic and continuum frameworks to possibly provide a better overall conceptualization of offender criminal history. Although empirical studies using the circumplex model in the offender profiling literature are rare, this model has been applied to examinations of group robbery (Porter & Alison, 2006a).

Essentially, the circumplex, depicted in the above figure, is a continuum and offenders can fall anywhere along the circle, allowing for an overlap in different themes, yet offenders will still concentrate in a given area that principally defines them – a primary advantage of the circumplex model (Porter & Alison, 2006a). Therefore, in the present model serial and single homicide offenders could both fall into expressive or instrumental themes, but be differentiated according to the degree to which those offenses were more strongly person or object oriented.

Given the impulsive and situational nature of single-victim homicide, the criminal histories of these offenders may fall primarily in the expressive dimension reflecting this overall nature in which the offender is more prone to act aggressively due to reliance on aggressive scripts. Furthermore, the prior offenses of single-victim offenders may orient towards person-centered offenses to a greater degree. Similarly, the criminal histories of serial homicide offenders may be differentiated according to an expressive or instrumental focus, but may concentrate around the adjacent themes in a different manner.

The exploitative nature of serial homicide in which either a physical person or physical object is being treated as a means through which the offender can attain an ulterior goal suggests

that even though serial homicide offenders have been found to follow the expressive/instrumental thematic framework, their prior offenses may be more object oriented in which there is a prevalence of property or theft-related offenses and sexual offenses, all aimed at gratifying their own needs for sex or money. According to the circumplex model, serial homicide offenders would be expected to fall predominantly in the instrumental region, reflecting a controlled, predatory and exploitative nature; however, whether an offender falls strongly in the instrumental region or within the expressive region, it is expected that both will cluster much closer to offenses that are object oriented as opposed to person oriented.

### **1.1.7 Linking Themes in Criminal History to Current Homicide Crime Scene**

Once thematic patterns have been established in the criminal histories of single and serial homicide offenders, the behaviors occurring at the current homicide crime scene should be examined in order to complete the thematic link between characteristics of an offender and their crime scene behavior. Offenders with similarly themed criminal histories may be an indication of similar experiences and similar goals or drives, and this may be reflected in similar actions being committed at the crime scene. Essentially, whichever of the above frameworks is best supported by the analyses, offenders who can be allocated to a dominant theme in their criminal background should demonstrate thematic consistency in crime scene behaviors and be allocated to the same crime scene theme. For example, those committing predominantly violent offenses in their background would commit more hostile/violent actions at the subsequent crime scene.

Adding crime scene actions into the equation will help to confirm and build upon the themes identified in offenders' criminal histories to gain a more complete picture of the differences and similarities between single and serial homicide offenders in a way that has not been done to date. Therefore, the ultimate contribution of this research would be to eventually

extend the results beyond their contribution to the academic literature and provide investigators with reliable and actionable information on homicide and serial homicide that can be applied to ongoing investigations to produce a viable suspect list using criminal history as a discriminator.

## **1.2 OVERALL AIMS OF THE CURRENT STUDY**

Due to the varying prevalence rates in the literature regarding the likelihood of a criminal record among single-victim and serial homicide offenders, the first aim of this study is to determine the likelihood of an official criminal record among both of these groups. It is hypothesized that a large proportion of both serial and single-victim homicide offenders will have a criminal history. Secondly, it will be determined if there is any uniformity or identifiable patterns in prior offending and if the identified patterns are different for serial and single-victim offenders. It is hypothesized that four patterns are possible:

- *Degree of Impulsivity* – The criminal histories of single and serial homicide offenders may occur along a continuum of impulsivity, marked by high impulsivity (characterized by prior aggressive and antisocial crimes) among single-victim offenders and low impulsivity (characterized by exploitative crimes) among serial homicide.
- *Degree of Specialization* – The criminal histories of serial and single offenders will occur on a continuum from generalized – with an expected cluster of single offenders – to more specialized – with an expected cluster of serial offenders.
- *Opposing Themes* – The criminal histories of serial and single homicide offenders may follow different overall themes of prior offending. Single homicide offenders would demonstrate themes of violent, opportunistic, or antisocial offenses. Serial offenders would largely demonstrate themes of exploitation or dishonesty.

- *The Circumplex Model* – Both serial and single homicide offenders’ criminal histories would generally follow the expressive/instrumental framework, but may differ according to the degree to which crimes are person oriented (single) or object oriented (serial).

These sub-hypotheses are based on the literature summarized in the behavioral themes section of this proposal. Although this study is largely exploratory and no similar studies have been conducted to date, each of the four thematic frameworks is theoretically supported by the literature. Therefore, this study will consider each framework in the context of the analyses to determine which provides the best means of grouping offenders based on criminal history.

The final aim of the study is to determine if offenders with similarly themed criminal histories – according to a thematic framework that best conceptualizes criminal history – commit similar behaviors at the subsequent homicide crime scene(s).

## **1.3 METHODS**

### **1.3.1 Data Samples and Selection Criteria**

Single-victim and serial homicide cases were drawn from separate sources. Cases were selected according to specific definitional criteria for each offender type (see section 1.3.4). Cases were not matched according to demographic data due to disparity in racial and gender distribution in single-victim versus serial homicide. Also, it was not possible to randomly select cases due to the rarity of serial homicide and lack of access to a large data population for either homicide type.

Single-victim homicide cases were drawn from the Cincinnati Police Department. Only cases of criminal homicide involving a single offender and single victim were included in the sample. No cases were excluded for reasons of motivating factors – thereby, allowing for the

inclusion of cases of felony homicide, domestic homicide, sexual homicide, etc. – in order to attain a comprehensive sample of single-victim homicide. In addition, a single city was used in order to facilitate data collection, particularly because access to full criminal background records was necessary for the present study. Although this resulted in a purely urban homicide sample from a single city, the homicides selected do not substantially differ from nationwide homicide data (see Chapter 2).

The single-victim sample was taken from cases occurring in Cincinnati beginning in 2006 and continuing backward from this date until a sufficient sample of cases (minimum of 100 cases) meeting the definitional criteria of the study was drawn (see section 1.3.4). This process yielded an initial sample of 137 single-victim homicide cases (see Chapter 2 for complete sample description).

Serial homicide cases were drawn from closed, fully adjudicated state and local cases that were contributed from law enforcement agencies from around the country for the purpose of research. All identifiers, including names of victims, suspects, offenders, officers, departments, correctional agencies, are removed. Only aggregate data are reported on.

Cases were selected according to the definitional criteria outlined in section 1.3.4. All cases meeting these selection criteria were included in the analysis. This resulted in an initial sample of seventeen serial homicide offenders responsible for a total of 97 victims (see Chapter 4 for a complete description of this sample). Only 17 cases met the required criteria for the study and additional cases had to be excluded due to the presence of more than one offender, less than three victims, lack of information regarding prior offending, or insufficient case information.

Although serial homicide is a rare event and it would be difficult to succinctly describe a ‘typical’ serial homicide offender, 17 is an admittedly small sample size and limits the

generalizability of any findings of the present study involving the serial homicide sample. The present study sample was compared to larger, more representative samples used by Salfati and Bateman (2005) and Godwin (2000) and these comparisons are depicted in Table 1.3.1.

**Table 1.3.1: Demographic comparison of serial study sample to other serial homicide samples**

	Study Sample	Salfati & Bateman (2005)	Godwin (2000)
Victims	N = 97	N = 69	N = 728
Male	21%	48%	32%
Female	79%	52%	67%
White	54%	71%	80%
Black	37%	17%	16%
Mean Age	25	28	-- <sup>a</sup>
Offenders	N = 17	N = 23	N = 107
Male	94%	100%	95%
Female	6%	0%	5%
White	47%	61%	82%
Black	47%	35%	16%
Mean Age at Time of 1 <sup>st</sup> homicide	28	32	30

a. The average age of victims was not provided by Godwin (2000), however, it was stated that 67% were between 18 and 50 years old.

As seen in Table 1.3.1, variation on demographic factors of serial homicide offenders and victims is not unusual, however, general trends remained stable (i.e., more male offenders than female, more female victims than male, more White offenders and victims than minority races, etc.). Still, the small number of serial offenders used in the current study and the fact that cases could not be drawn randomly means that the sample may be unrepresentative. Any results should be taken with some degree of caution pending replication on a larger sample before generalizing to serial homicide and serial homicide offenders.

### 1.3.2 Methodology and Variables

This study will employ multi-dimensional scaling (MDS) analyses to test the central aims of the study. These procedures are rooted in Facet Theory. Facet theory owes much of its origins

and continued use to the work of Louis Guttman and his colleagues during the 1940s (Canter, 1985) and Guttman's idea that in behavioral research, one needs to carefully conceptualize and clearly define the concepts under examination, only then proceeding to the development of methodology and statistical analyses (Guttman & Greenbaum, 1998). The central component of facet theory is the facet, which is a "set of attributes (variables) that together represent underlying conceptual and semantic components within a content universe...To be effective, the elements [components] of each facet must be mutually exclusive, and different facets must be conceptually distinct from each other" (Guttman & Greenbaum, 1998, p. 17).

Smallest Space Analysis (SSA) and Multidimensional Scalogram Analysis (MSA) are both powerful types of facet-analysis procedures that have been shown to be particularly useful in research in the behavioral sciences (Canter, 1985) and have more recently been applied specifically to studies of crime scene behavior in the areas of investigative psychology and offender profiling (e.g., Canter, 2000; Godwin, 2000; Hakkanen, Lindlof, et al., 2004; Kocsis, Cooksey, & Irwin, 2002b; Salfati & Bateman, 2005; Salfati & Taylor, 2006; Santtila, Hakkanen, et al., 2003; Santtila et al., 2004). SSA and MSA are described in the analyses section of this proposal.

### **1.3.3 The Homicide Profiling Index**

The variables for this study are contained in the Homicide Profiling Index<sup>®</sup> (HPI<sup>®</sup>) (Salfati, 2005). Essentially, the HPI is a coding dictionary developed specifically for use with homicide case files and contains more than 200 variables pertaining to a range of items: nature of the case, offender characteristics, crime scene actions, victimology, and offender motivation. Early versions of the HPI have shown inter-rater reliability ratings as high as 89% (Salfati,

2005). The HPI has since been further refined to allow for higher reliability scores. The most up-to-date version of the HPI will be used in the current study.

The intention is to collect sufficient information on a variety of variables to test the aims outlined above, as well as to create a comprehensive database that may be used in future studies. For this reason, data will be collected on all variables contained in the HPI, though not all variables will be used in the analyses for this study.

According to MDS analysis, the thematic frameworks (e.g., impulsivity, exploitativeness, etc.) outlined in the individual aims listed previously do not refer to a specific variable. Instead, these terms should be taken to represent frameworks that are measured according to a concentration of similarly themed variables. For example, the theme ‘specialization’ would be demonstrated according to the degree to which similarly themed variables cluster together. In other words, high specialization could be indicated if individual variables pertaining to prior offenses concerning theft or theft-related behavior (e.g., burglary, larceny, theft of auto, etc.) were found to co-occur or conversely if individual violent offense variables (e.g., assault, domestic violence, etc.) were found to co-occur and individuals could be allocated to a single dominant theme. Low specialization would be indicated by a variety of prior individual offense variables that cannot be linked together under any sort of unifying theme or framework or if offenders could not be allocated to a dominant theme. In this manner, the individual themes being tested are essentially indicated by the presence or absence of co-occurring variables reflecting the theme itself.

#### **1.3.4 Definitions**

The following definitional criteria must be met for inclusion in the sample.

#### *1.3.4.1 Criminal History*

Criminal history will be defined as an arrest or a conviction for any criminal offense contained in the offender's official police record committed prior to the current homicide event. Both frequency of arrests and frequency of convictions for each offense variable listed in the HPI will be collected and additional charges not listed in the HPI will be recorded as well.

#### *1.3.4.2 Single-Victim Homicide*

Single-victim homicide will be defined as a single homicide event, involving one victim and one perpetrator. Only intentional and willful cases of murder that resulted in the current conviction of the offender will be included. Additionally, cases of attempted homicide will not be included, because it is difficult to conclusively determine that such an incident was intended to result in a homicide, as opposed to assault and there is no established overall homicidal behavior pattern. Homicides involving multiple offenders will be excluded from the analyses in order to control for the effects of group dynamics on behavior (Salfati, 2003).

#### *1.3.4.3 Serial Homicide*

Serial homicide will be defined as a series of homicides perpetrated by one offender with multiple victims (minimum of three) committed over time in discrete, separate incidents. This requirement that the homicides occur as separate incidents is to distinguish serial cases from cases of spree killing, with the latter typically referring to multiple homicides that are connected through a single motivating incident. Additionally, the homicides must occur without the direction or orders of any political or criminal organization, which would eliminate the inclusion of contract killers. Included are also cases where there are at least two homicides, but other victims have survived a serious attack, due to extraordinary circumstances (i.e., the quick availability of aid, the perpetrator is interrupted, etc.). Cases in which a victim survives are

being included in the sample, because it may be inappropriate to focus on an arbitrary number of victims before someone can be considered a serial murderer; the fact that a victim survives a serious assault, does not negate the fact that more than two separate events occurred. Again, cases involving more than one offender will be omitted to control for effects of group dynamics on behavior.

### 1.3.5 Procedure

Data will be collected using procedures already established in other studies using the HPI. The protocol outlined in the HPI converts all information taken from a case file into a numerical format. For example, a specific crime scene characteristic or action would be manually recorded as a 1 if that item is present in the case, 0 if it is absent, or 999 if the information is not available; similarly, if there are multiple categories within a specific variable, the HPI assigns a number to each category. An excerpt of how the data will be translated from qualitative information to quantitative non-identifying information in an SPSS database is shown in Figure 1.3.1. This figure demonstrates how the information removed from the files would appear after collection.

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				<i>Variables</i>			
	<b>caseid</b>	<b>vicres</b>	<b>location</b>	<b>bluntins</b>	<b>supercut</b>	<b>injtorfr</b>	<b>injtorba</b>
<i>Case 1</i>	001	0	3	0	0	0	0
<i>Case 2</i>	002	0	4	0	1	1	1
<i>Case 3</i>	003	1	1	1	0	999	1

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**Figure 1.3.1: Data coding sheet excerpt.**

As Figure 1.3.1 shows all information is recorded according to the variable label, appearing in bold at the top of each column. This label is an abbreviated form of the full variable name in the HPI. The variable ‘Caseid’ indicates the randomly assigned number for each case and will be the only identifier of each case to be physically recorded. The above excerpt contains information from three separate cases recorded in the rows labeled Case 1, Case 2, Case 3; the numbers continuing down the remainder of each row indicate the specific characteristics present in that particular case for each variable listed across the top.

For example, variable 6 is one of many variables designed to determine the location of wounds on the victim’s body; the abbreviated label ‘injtfr’ is used on the coding sheet. The full label – ‘Injury to Torso – Front’ and specific definition of the variable are only contained in the HPI, and reads “This variable is recorded as present if there was evidence that the victim had sustained injuries to the torso; that is, from below the neck to the waist, excluding arms and hands. It should be noted that this is the front of the body (i.e., chest and stomach)”. The HPI requires this variable to be coded as 1 if these injuries are present, 0 if they are absent, and 999 if the information is missing. Looking at the coding sheet, this would indicate that these wounds were absent in homicide case 001, present in case 002, and undetermined in case 003.

This protocol was developed explicitly for the purpose of ensuring that all information taken from a case file would be recorded in a reliable manner and in such a way as to ensure full confidentiality of the information being recorded. The information contained on these individual coding sheets would then be entered into a computer database file, still only using this numerical format.

## **1.4 ANALYSES**

In order to examine the basic characteristics of both samples of single-victim and serial homicide offenders, as well as the relative likelihood of a criminal history in both samples, frequency analysis will be conducted, as will any non-parametric statistical tests, such as chi-square, where it is necessary in order to completely address any aim of the current study. In order to test for themes that may exist in patterns of prior offending and their relation to crime scene behaviors, multi-dimensional scaling procedures will be used, specifically, Smallest Space Analysis and Multidimensional Scalogram Analysis.

### **1.4.1 Smallest Space Analysis (SSA)**

SSA examines each variable in the analysis in relation to every other variable and produces a visual output of the relationships (Mokros & Alison, 2002). The SSA output is interpreted through an examination of the spatial distances between variables in the geometric output; these spatial distances represent the relative strength of the relationship between them. Variables – represented as points in a geometric space – that concentrate at the center of the visual plot have a high frequency across cases in the sample; those that occur towards the edges of the plot are rarer among cases in the sample. Variables occurring closer to one another are more strongly correlated than those that occur further apart; these variables share a common underlying theme and are likely to co-occur (Salfati, 2003). In this manner, SSA is used to examine if individual variables when examined collectively can be grouped into thematic frameworks.

### **1.4.2 Multi-Dimensional Scalogram Analysis (MSA)**

MSA is similar to SSA, except that it examines the characteristics of individuals instead of variables, and organizes multiple variables into profiles of the individuals (Guttman & Greenbaum, 1998). Each of these profiles is again represented as a point in space in a visual plot; those points (profiles) that occur closer together represent individuals who are more similar, while those points (profiles) that occur farther from one another represent individuals who are more dissimilar (Guttman & Greenbaum, 1998).

Both SSA and MSA will be used in the present study to empirically establish the themes and patterns in the criminal histories of homicide offenders, to determine the degree to which individuals are similar based on their prior offending, and patterns in crime scene behaviors so that links between criminal history and crime scene actions can be identified.

### **1.5 OUTLINE OF ANALYSES AND REMAINING CHAPTERS**

The majority of the following chapters – chapter 2, 3, 4, 5, and 6 – discuss the analyses of the current project as they addressed the aims of the study outlined above. These chapters were written as individual publications that are in press or currently under review and each one includes a discussion of the specific samples used, more detailed descriptions of how SSA and/or MSA were used to answer the research focus of that particular chapter, and additional analyses other than MDS analyses that were necessary to answer the aims completely. The APA citation has been included as a subtitle to each of these chapters. The chapters are largely unchanged from their published form, although an introduction and conclusion has been added to each one to discuss how the analyses and overall project evolved as the aims were addressed. The remainder of the current section outlines the overall structure of the chapters and cites the location of each aim within these chapters.

Aim 1 of the current study was to determine the likelihood of an official criminal record among single-victim and serial offenders with the expectation that a large proportion of both groups of offenders would demonstrate a recorded criminal history. Aim 1 is addressed in Chapter 2 in relation to the single-victim offenders and in Chapter 4 in relation to both single-victim and serial offenders. Both samples are also fully described in Chapter 4.

Aim 2 was broadly intended to address the issue of what patterns exist in the prior offenses of serial and single homicide offenders and differences that may exist between the two groups of offenders. The specific frameworks that were proposed were developed based on the relevant literature and are tested simultaneously using Smallest Space Analysis. One of the four frameworks, or none of them, will be present in the resulting SSA plot. This aim is centrally addressed within Chapter 2, Chapter 4, and Chapter 5. These chapters evolved as analyses continued in order to answer this aim and fully explore patterns in criminal history. In addition, Chapter 3 provides a more thorough evaluation of a specific methodological issue that has not been addressed in depth by any prior study using Smallest Space Analysis. Therefore, a full chapter was deemed necessary in order to discuss this issue and fully address Aim 2 of the study.

Finally, Aim 3 of the current study was to determine if offenders with similarly themed criminal histories – according to the thematic framework that best conceptualizes offender criminal history – commit similarly themed behaviors at the subsequent homicide crime scene(s). In other words, the final aim of the study was to determine if individuals demonstrate thematic consistency across their offending, both within their criminal history and their current homicide crime scene behaviors. This aim is addressed entirely within Chapter 6.

The final chapter, Chapter 7, includes a summary of the major findings of the current study, theoretical implications, implications for investigations of homicide and offender

profiling, and suggestions for future research. The final chapter will not be submitted for publication.

## **CHAPTER 2: CRIMINAL HISTORY OF HOMICIDE OFFENDERS: A MULTIDIMENSIONAL ANALYSIS OF CRIMINAL SPECIALIZATION**

Trojan, C. & Salfati, C.G. (2009b). *Criminal history of homicide offenders: A multidimensional analysis of criminal specialization*. Manuscript submitted for publication.\*

### **2 INTRODUCTION TO CHAPTER**

The current chapter was undertaken as a pilot study to the full dissertation. Analyses were conducted on a sample of single-victim homicide offenders to explore patterns in the offenses preceding the homicide in reference to the four frameworks outlined in Chapter 1. The analyses discussed in the current chapter were undertaken to provide results that could be directly compared to future analyses that incorporated the serial homicide offender sample in order to more fully understand the differences and similarities between the criminal histories of these offenders. The results of this pilot study supported the idea that homicide offenders' criminal histories could be conceptualized according to a framework of criminal specialization, though not as a continuum as originally proposed, and the chapter is discussed in reference to this theoretical framework.

### **2.1 LITERATURE REVIEW**

The way offenders commit a homicide and the actual behaviors they engage in at the homicide crime scene may be impacted by their criminal trajectories or prior offending up to that point (Salfati, 2000; Salfati, 2008; Salfati, in press-a). Central to this issue is whether such information can be used in some way to aid investigators by identifying possible links between prior criminal offending and the behaviors exhibited at a subsequent homicide crime scene. Currently, not enough is known about the criminal histories of homicide offenders, what patterns

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\* This chapter is currently under review with *Criminal Justice and Behavior*.

may exist in their criminal records and if offenders specialize in the offenses they commit in order to answer this question.

There seems to be a consensus in the literature regarding criminal specialization that most offenders are in fact generalists, in other words they do not specialize in the offenses they commit (e.g., Britt, 1994; Parkinson et al., 2004; Simon, 1997; Youngs et al., 2004). However, there are potential problems with how specialization has been examined, including 1) over-representation of juvenile samples, 2) focus on general offender populations, and 3) reliance on the legal classification of offenses. These issues – and the lack of homicide studies that give central focus to offender criminal history – limit what is currently known about specialization patterns among homicide offenders. However, the third issue is potentially the most problematic. Using the legal definitions of offenses (e.g., the definition or classification laid out in the Uniform Crime Reports [Federal Bureau of Investigation, 2006b]) typically means an offender is a specialist if they repeat the same offense at subsequent points in time. However, we may be better able to understand homicide offenders' criminal histories by examining how offenses that co-occur in offenders' backgrounds are linked by a common underlying criminological or psychological construct – a theme (Salfati & Taylor, 2006).

The current study aims to put forward a new way of examining criminal specialization among offenders by using a thematic approach – in other words, by identifying thematic links between criminal offenses. In doing so, this study will provide a foundation for future studies that seek to link criminal history to crime scene behaviors in a manner that is useful to homicide investigators.

### **2.1.1 Homicide and Offender Criminal History**

National homicide statistics show that the typical homicide event involves a male victim (77%) and male offender (90%); one-third of victims and one-half of offenders are under the age of twenty-five, 51% of victims and 46% of offenders are Caucasian, 47% of victims and 52% of offenders are African American, and 68% of homicides are committed using a firearm (Bureau of Justice Statistics [BJS], 2007a). General trends indicate that female victims are significantly more likely to be murdered by a current or former intimate partner, while males are more likely to be murdered by an acquaintance or friend (BJS, 2007a). In 2006, the circumstances of the homicide were unknown in 35% of reported homicides, with approximately 16% of homicides having been committed in the course of another felony (i.e., robbery, rape, burglary, etc.), and 44% of homicides where the circumstances were known occurred during the course of an argument or personal dispute (Federal Bureau of Investigation [FBI], 2006a). More broadly, some have argued that as many as 75% of homicides may be situational – arising from a specific set of circumstances between individuals and is a one-time response to a stress-inducing situation (Schlesinger, 2004).

National statistics help provide an overall picture of homicide, but homicide research has not focused directly on crimes committed by offenders before their criminal trajectory culminates in a homicide. However, it is clear that homicide is not an aberrant event in an otherwise non-criminal life and both historical and contemporary studies show that a large portion of homicide offenders have committed offenses prior to the actual homicide (e.g., Broidy et al., 2006; Delisi & Scherer, 2006; Soothill et al., 2002; Wolfgang, 1958).

While the percentage of homicide offenders with a recorded criminal history varies across samples, it is common to find percentages exceeding 50% in samples of offenders from

the U.K. and the U.S. For example, criminal history prevalence rates in the U.S. have been established at 57% (Broidy et al., 2006), 60% (Delisi & Scherer, 2006), and 64% (Wolfgang, 1958) and as high as 68% among homicide offenders in the U.K. (Soothill et al., 2002). One of the most comprehensive examinations of homicide conducted fifty years ago, but still cited today (e.g., Hickey, 2006; Salfati, 2003; Salfati & Canter, 1999; Schlesinger, 2004; Serran & Firestone, 2004), was an examination of 588 cases of criminal homicide in Philadelphia by Wolfgang (1958). Wolfgang (1958) found that more than two-thirds of his sample (64%) had a criminal record and male offenders were more likely to have a prior record (68%) compared to female homicide offenders (48%). Moreover, of offenders with a prior record 66% had a record of offenses against a person and more than 70% of these individuals committed more than one prior offense, with approximately 22% committing more than six offenses (Wolfgang, 1958). In a much more recent study by Delisi and Scherer (2006), 60% of single homicide offenders had prior arrests or police contacts and nearly one-third were described as chronic offenders having at least five prior arrests or police contacts. Looking specifically at intimate partner homicide, Block and Christakos (1995) examined more than 2500 cases of domestic homicide in Chicago over a 29 year period and found more than 40% of male and 18% of female domestic homicide offenders had prior arrests for violent offenses alone. Similarly, Johnson and Hotton (2003) found that in 46% of intact relationship domestic homicides involving a female victim the offender had a prior conviction for violence, rising to 50% in estranged, female-victim domestic homicide cases.

Homicide studies using international samples have found similar prevalence rates for offender criminal history. Soothill et al. (2002) found that among homicide offenders with a criminal record in the United Kingdom, 72% had prior convictions for theft and handling stolen

goods, 61% for burglary, 57% for a violent offense, 20% for robbery, and 5% for sexual offenses. An examination of the onset of offending in a sample of 786 male homicide offenders in the U.K. found an even higher prevalence with only 13% of the sample having no prior convictions (Dobash, Dobash, Cavanagh, Smith & Medina-Ariza, 2007).

What stands out in most of these studies is the fact that criminal history is frequently not the focus of the study and instead is examined collectively with other background characteristics. While criminal history was central to both the Dobash et al. (2007) and Delisi and Scherer (2006) studies, Dobash et al. examined it in terms of comparing early and late-onset offenders on a variety of psychological, developmental, and socio-economic factors and Delisi and Scherer used single victim homicide as a comparison group for examining multiple homicide offenders. Moreover, many studies simply note whether offenders have a prior arrest or conviction and only go so far as to note whether that offense was violent or against property or person and do not delve further into more specific examinations.

The preceding studies show that most homicide offenders have already appeared in police or correction records prior to the commission of the homicide, suggesting that criminal history is a valid and objective background characteristic deserving of more in-depth examinations in order to develop its utility to investigators. Establishing the prevalence rates of single homicide offenders with a criminal history is the first step. Undertaking a more in-depth understanding of overall offending patterns now needs to follow – specifically whether offenders can be viewed to be specialists according to groups of thematically similar prior offenses.

### **2.1.2 Criminal Specialization or Offending Versatility**

Before an examination of criminal specialization specifically among homicide offenders can be undertaken, it is important to consider specialization or versatility among general offender

samples to establish a baseline. Many studies of overall offender populations suggest that most offenders are generalists, demonstrating versatility in the types of offenses they commit (e.g., Britt, 1994; Klein, 1984; Parkinson et al., 2004; Simon, 1997; Youngs et al., 2004). However, the degree of specialization may vary according to characteristics of the offender or for certain offenses. For example, Francis et al. (2004) found that males tended to show increased specialization with age and considerable specialization across all age groups of female offenders. Blumstein, Cohen, Das, and Moitra (1988) found greater specialization for property offenses generally compared to violent offenses. Farrington et al. (1988) examined approximately 70,000 juvenile cases and identified 19% of offenders ( $n = 373$ ) in the sample as specialists and the “most specialized offenders were runaway (88 offenders), burglary (53), motor vehicle theft (48), and liquor violations (36)” (p. 481). Furthermore, the authors found a small degree of specialization amongst more persistent juvenile offenders (i.e., 10 or more referrals) with male offenders more likely to specialize in serious offenses (Farrington et al., 1988). Similarly, Mazerolle, Brame, Paternoster, Piquero, and Dean (2000) found a significant relationship between specialization and age at onset of offending, with early onset offenders showing more versatility in offending patterns and no significant differences between the degree of specialization and the gender of the offender. Finally, an emerging body of research has suggested that specialization may exist in the short-term (e.g., McGloin, Sullivan, & Piquero, 2009; Sullivan, McGloin, Pratt, & Piquero, 2006).

While the amount of specialization found in studies is usually small, this may be due, at least in part, to the use of legal classifications and labels for offenses to indicate specialization. Focusing on the legal classifications of offenses (e.g., the UCR offense definitions) accepts “a restricted perspective for examining patterns in offenders’ behavior and may consequently

overlook important similarities and differences” (Salfati & Taylor, 2006, p. 107) across separate legally classified offenses that can be linked by a common underlying psychological, criminological, or theoretical construct – a theme. The idea of grouping offenses that are thematically similar was expressed by Farrington et al. (1988) who noted the separate offense categories used in their study “might be grouped into broader categories, so that one offense category corresponded to one underlying theoretical construct” (p. 482). Although this study preceded the earliest thematic models of crime scene behaviors and offender characteristics, Farrington et al. (1988) are essentially arguing for a thematic approach to measure specialization. Under this approach, specialization would be indicated if the bulk of offenders’ prior crimes fell primarily under only one theme. Generalization in offending would be indicated by offenses falling nearly equally into more than one theme.

Using what is known about homicide in general, it is possible to further refine the thematic groupings of offenses that may be present in a sample of single-victim homicide offenders. Criminal offenses in general are typically reported in national statistics (e.g., UCR statistics) according to a dichotomy of person versus property offenses. Offenses against person according to the UCR include murder, rape, robbery, and aggravated assault and offenses against property include burglary, larceny, motor vehicle theft and arson (FBI, 2006b). However, this dichotomy may be overly simplistic. For example, the use of the label ‘property’ to classify an entire group of offenses does not take into account property offenses that are aimed at monetary gain using more aggressive means (i.e., robbery) and those that are not committed against property or involve material gain per se but the offender is still guided by achieving some sort of ulterior benefit (i.e., obstruction of justice). These offenses could, however, be linked by a theme of instrumentality. Feshbach (1964) introduced the idea of instrumental aggression in criminal

offenses where the goal is the achievement of non-aggressive goals other than harm to the victim. An alternate type of aggression proposed by Feshbach (1964) was hostile/expressive aggression where the goal is injury or harm to the victim. These two types of criminal aggression have been expanded to studies of homicide (e.g., Block, Devitt, Donoghue, Dames, & Block, 2000) and have been found to differentiate between expressive and instrumental themes in homicide crime scene behavior (e.g., Salfati & Canter, 1999; Salfati & Haratsis, 2001) and linked to similarly themed offender backgrounds (Salfati, 2000). What is missing is to determine if specialization patterns in homicide offenders' criminal histories demonstrate themes of instrumentality rather than relying on a blanket 'property' label. In a similar manner, the label of offenses against person, while including the typical violent offenses that involve a live victim (i.e., rape or assault) it does not include more indirectly violent offenses that may be committed against property (e.g., criminal damaging) or those that do not include direct person to person physical violence (e.g., menacing, stalking, etc.). Therefore, it may be more appropriate to develop a thematic framework that takes into account some of these theoretical underpinnings.

Offenders may show specialization in the convictions that preceded their homicide if offenses are viewed as having a violent focus – both direct violence against a live victim (e.g., assault, domestic violence) and indirect violence that may not include physical violence (e.g., harassment, child neglect) – compared to offenses that are instrumental in that the offender is seeking to gain something through the crime other than harm to a victim (Feshbach, 1964) whether it is monetary or material gain with or without confrontation of a victim (e.g., burglary, larceny, robbery) or avoidance of prosecution or punishment (e.g., obstruction, failure to pay fines, etc.). If specialization can be reflected in this manner using the psychological themes that underlie disparate offenses, it would then be possible to test whether offenders could be allocated

to a single dominate theme and considered specialists. In this respect, the current study seeks to determine if the thematic approach is appropriate for examining patterns in homicide offenders' criminal histories.

## **2.2 AIMS OF THE STUDY**

The overall goal of the current study is to determine if homicide offenders specialize in the crimes they commit prior to the homicide using the thematic approach discussed above. This involves two separate steps. Aim 1 of the study is to determine if the prior convictions of homicide offenders co-occur in thematically similar groups of offenses, specifically those that are violent versus those that are instrumental. The second aim of the study is to determine if offenders demonstrate specialization in that their prior convictions fall predominantly within a single thematic region.

## **2.3 METHODS**

### **2.3.1 Sample**

Data for this study was collected from homicide case files belonging to the Cincinnati Police Department (CPD) and were drawn from homicides occurring over a ten year period, from 1997 to 2006. During this time period, approximately 580 homicides in total occurred across the city of Cincinnati (CPD cited in Lang, 2008). Due to the intent and focus of the current study, not all homicides were selected for examination.

To be included in the present study, homicide cases had to meet several criteria. To control for the effect of group dynamics on behavior (Salfati, 2000) and to develop a single-victim homicide sample that could be directly compared to serial homicides in a subsequent planned study, only cases involving a single offender and a single targeted victim were selected.

This criterion also excluded offenders who had been convicted of previous homicides. Two offenders eventually included in the sample had been previously arrested for homicide. Yet, both were acquitted by juries and, therefore, the burden of proof that they had committed the prior homicide was deemed insufficient for considering them a multiple homicide offender. Secondly, the case had to be resolved by a conviction and third, cases in which the offender was convicted of manslaughter, involuntary manslaughter or reckless homicide were excluded from the sample unless the original arrest charge was for murder or aggravated murder. This last criterion was used to allow for the plea bargaining process in which cases that clearly involved intentional and willful cases of murder were plead down to a lesser charge. This led to a sample of 137 single-victim homicides

Of the victims in the sample (N = 137), 76% were male (n = 104) and 24% were female (n = 33), 20% were White (n = 27), 80% were Black (n = 109), and one victim was Hispanic. The average victim age was 30 (median = 26). The youngest victim was less than one year old and the eldest victim was 85.

Of the offenders in the sample (N = 137), 87% (n = 119) were male and 13% were female (n = 18), 13% were White (n = 18), 86% were Black (n = 118) and one offender was Hispanic. The average offender age was slightly lower than the victims at 29 (median = 26). The youngest offender was 15 and the eldest 65.

This sample of 137 homicides did not substantially differ on demographic characteristics from all homicides occurring in Cincinnati during the ten year period from which the sample was drawn. In addition, the study sample was compared to national statistics on single-victim, single-offender homicides derived from the Supplemental Homicide Reports produced by the F.B.I. for 1998, 2001, and 2005. This comparison is seen in Table 2.3.1 below:

**Table 2.3.1: Comparison of study sample to the supplemental homicide reports (SHR)**

	Study Sample (N = 137)	SHR 1998 (N = 7759)	SHR 2001 (N = 7629)	SHR 2005 (N = 7974)
Victim Gender				
Male	75.9%	72.5%	72.4%	73.6%
Female	24.1%	27.5%	27.6%	26.4%
Victim Race				
White	19.7%	51.4%	53.1%	52.7%
Black	79.6%	45.3%	44.3%	44.5%
Other	Less than 1%	2.2%	2.6%	1.9%
Victim Age				
Mean	30	32	33	33
Offender Gender				
Male	86.9%	88.8%	90.1%	90.3%
Female	13.1%	11.1%	9.9%	9.7%
Offender Race				
White	13.1%	49.1%	50.2%	49.8%
Black	86.1%	47.7%	47.5%	47.9%
Other	Less than 1%	1.9%	2.3%	2.4%
Offender Age				
Mean	29	31	32	32

While the sample of homicides selected for this study does not deviate substantially from national statistics across the three years examined, there is one notable exception. The racial distribution in the current sample is markedly skewed compared to the national statistics, with about 45% more Black victims and 40% more Black offenders than the national average. While it is possible that this may indicate a biased sample, there is evidence that Cincinnati is not the only American city to see increased numbers of African American homicide victims and offenders. A recent study by the Violence Policy Center (VPC) of African American homicide victimization rates found that the national Black homicide victimization rate was 18.84 per 100,000 compared to only 2.99 per 100,000 for Whites. Moreover, Ohio ranked 11<sup>th</sup> nationally with a Black victimization rate of 23.16 per 100,000 (VPC, 2008). Of the five states that border Ohio, Pennsylvania, Michigan, and Indiana ranked in the top five nationally. Closer examination of medium to large cities within these states using the 2005 Supplemental Homicide Reports found distributions remarkably similar to Cincinnati in terms of victim and offender race. For

example, Pittsburgh, Pennsylvania and St. Louis, Missouri (Missouri had the highest Black homicide victimization rate in the nation at over 32 per 100,000) have populations similar in size to Cincinnati (within 30,000 residents). In Pittsburgh, 90.5% of victims and 81% of offenders were Black; in St. Louis, 84.9% of victims and 84.9% of offenders were Black.

While the present study does not attempt to explain the possible reasons behind this racial disparity, these statistics clearly indicate that similar trends exist in other mid-sized Midwestern cities and are not necessarily reflective of inherent bias in the present sample. However, these trends are deserving of examination in future studies of homicide focusing on the racial distribution of victims and offenders.

### **2.3.2 Data Collection, Procedure, and Variables**

Data was collected using the Homicide Profiling Index version 3 (HPIv3) (Salfati, 2005). The HPIv3 is a coding dictionary developed specifically for use with homicide case files and contains information on more than 200 variables covering a range of items: nature of the case, offender characteristics, crime scene actions, victimology, and offender motivation. The HPIv3 contains detailed variable definitions and guidelines that coders follow to ensure reliable data collection. Early versions of the HPI have shown inter-rater reliability ratings as high as 89% (Salfati, 2005).

The protocol outlined in the HPIv3 converts all information taken from a case file into a numerical format, either dichotomous (0 = absent, 1 = present) or if there are multiple categories in a specific variable, the HPIv3 assigns a number to each category. This protocol was developed explicitly for the purpose of ensuring that all information taken from a case file is recorded in a reliable manner and in such a way as to ensure full confidentiality of the information being

recorded. Personal or identifying information is never extracted from the files or used in such a way as to make a case recognizable.

Included in the HPIv3 is a series of criminal history variables. The definitions provided by the HPIv3 were used to code the criminal convictions of offenders in the current study sample, but some variables were excluded because no offender in the sample was arrested or convicted for those offenses (i.e., arson, indecent exposure, and voyeurism). Additional conviction variables were added because some offenses could not be placed into one of the offense categories provided by the HPIv3 and both the definitions of these new variables and the inclusion of offenses within them was arrived at by a consensus of the authors and were guided by relevant research (e.g., Salfati, 2000; Youngs et al., 2004). Table 2.3.2 below provides brief descriptions of the 22 criminal conviction variables that were used in the current analysis.

**Table 2.3.2: Criminal history conviction variables**

<b>Variable Name</b>	<b>Abbreviated Definitions and Representative Offenses</b>
<i>Alcohol</i>	Any offense involving the use of alcohol such open flask, liquor law violation, etc. (excluding DUI and drunk and disorderly conduct, coded elsewhere)
<i>Armed Robbery</i>	Robbery of a person with the use of weapon
<i>Arrest</i>	Offenses arising out of the arrest process, such as escape, resisting arrest, or fleeing
<i>Assault/Violence</i>	Includes offenses of bodily harm and assault
<i>Auto-Theft</i>	Theft of an auto or unauthorized use of a vehicle
<i>Burglary</i>	Breaking and entering, burglary of a home or business
<i>Damage</i>	Criminal damaging or vandalism
<i>Dependent</i>	Crimes against a dependent, including animals and children, such as child neglect, animal cruelty, child endangerment
<i>Disobey</i>	Any offense involving violation of posted or known city/local ordinance
<i>Domestic Violence</i>	Violence in a domestic setting
<i>Disorder</i>	Any disorderly offense such as drunk and disorderly conduct, disturbing the peace, etc.
<i>Drug</i>	Any narcotics offense involving possession of drugs/paraphernalia, trafficking, etc.
<i>Fraud</i>	Fraud or deception, including forgery
<i>Harass</i>	Offenses involving threatening or harassment of another through verbal or non-contact behavior, such as stalking, menacing, or intimidation
<i>Legal</i>	Offenses arising from legal proceedings (excluding during arrest), such as tampering with evidence, perjury, obstruction, failure to appear in court, etc.
<i>Robbery</i>	Robbery of a person without the use of weapon
<i>Sexual</i>	Any sexual offense such as minor sexual assault, rape, failure to register as sex offender, etc. (excluding prostitution)
<i>Theft</i>	Offenses involving taking property of another without the direct confrontation of a victim or breaking into a home or business, such as petty theft, shoplifting and grand larceny
<i>Theft-Related</i>	Theft-related offenses that do not actually involve seizing of the property of another, such as possession of criminal tools, receiving stolen property, etc.
<i>Traffic</i>	Violation of any traffic law including DUI or any moving violation
<i>Vice-Sex</i>	Vice crimes of a sexual nature that involve minor sexual conduct, such as public indecent sex act, solicitation, prostitution
<i>Weapon</i>	Any offense involving illegal possession of a weapon or brandishing, but excluding offenses where a weapon was used against a victim (e.g., aggravated assault)

### **2.3.3 Analyses**

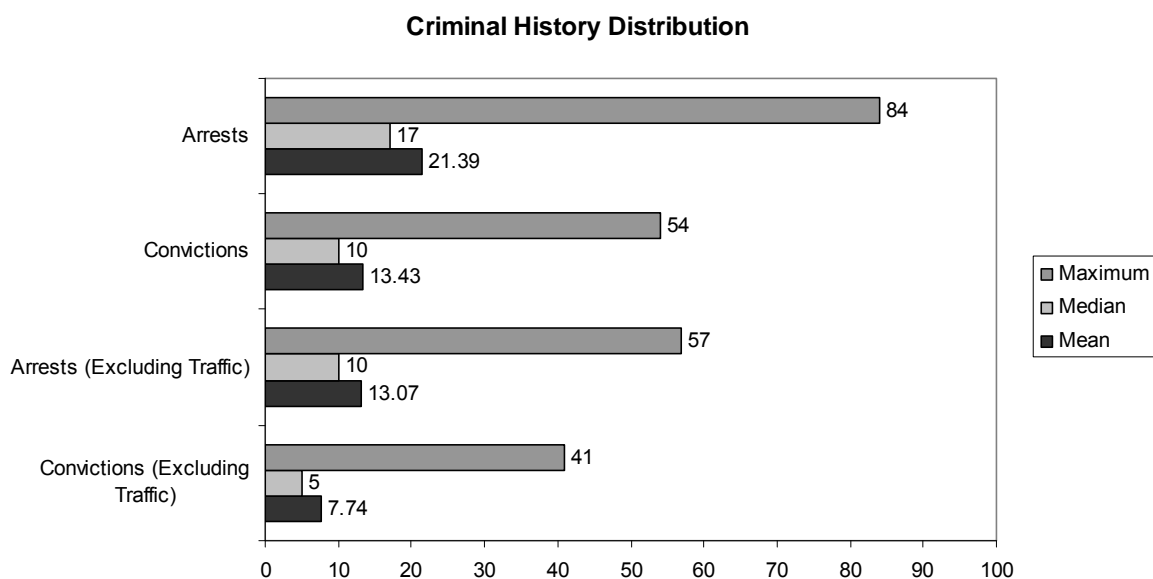
In order to identify thematic patterns in the prior offenses of homicide offenders, Smallest Space Analysis (SSA) is used. SSA is a multidimensional scaling procedure that examines each variable in the analysis in relation to every other variable simultaneously and produces a visual output of the relationships (Guttman & Greenbaum, 1998). The SSA is interpreted through an examination of the spatial distances between variables in the geometric output; these spatial distances represent the relative strength of the relationship between the variables. Variables – represented as points in the geometric space – that occur closer to one another in the visual plot are more strongly related than those that occur further apart; variables occurring in the same region of the plot share a common underlying theme and are likely to co-occur across cases in the sample (Salfati, 2003). How well the geometric output fits the original correlation matrix is determined by the coefficient of alienation, which ranges from 0 to 1. The smaller the coefficient, the better the ‘fit’; generally, coefficients below 0.2 are considered a good ‘fit’ (Salfati & Bateman, 2005). In this manner, SSA can visually show what prior criminal offenses tend to co-occur across homicide cases in the present study sample.

### **2.3.4 Final Sample Suitable for SSA**

In order to conduct the SSA, a sub-sample of the original 137 cases was selected and the prior convictions of offenders were examined. Juvenile homicide offenders were removed from the sample because many of their offenses were status offenses (i.e., runaway, truancy, etc.) making them unsuitable for comparison to adult offenders whose juvenile records were not available. Additionally, offenders with no prior convictions were removed. This resulted in a final sample of 122 homicide offenders.

## 2.4 RESULTS

Looking at the initial sample of 137 offenders, 96.4% (n = 132) had some type of criminal record prior to the commission of the homicide. On average offenders were arrested 21 times (mean = 21.39; median = 17; range 0 to 84) and had approximately 13 prior convictions (mean = 13.43; median = 10; range 0 to 54). However, these statistics include traffic offenses, which are admittedly common and therefore are not particularly useful for differentiating offenders. Withholding all traffic offenses, offenders still had an average of 13 prior arrests (mean = 13.07; median = 10; range 0 to 57) and nearly 8 prior convictions (mean = 7.74; median = 5; range 0 to 41). The distribution is shown in Figure 2.4.1.



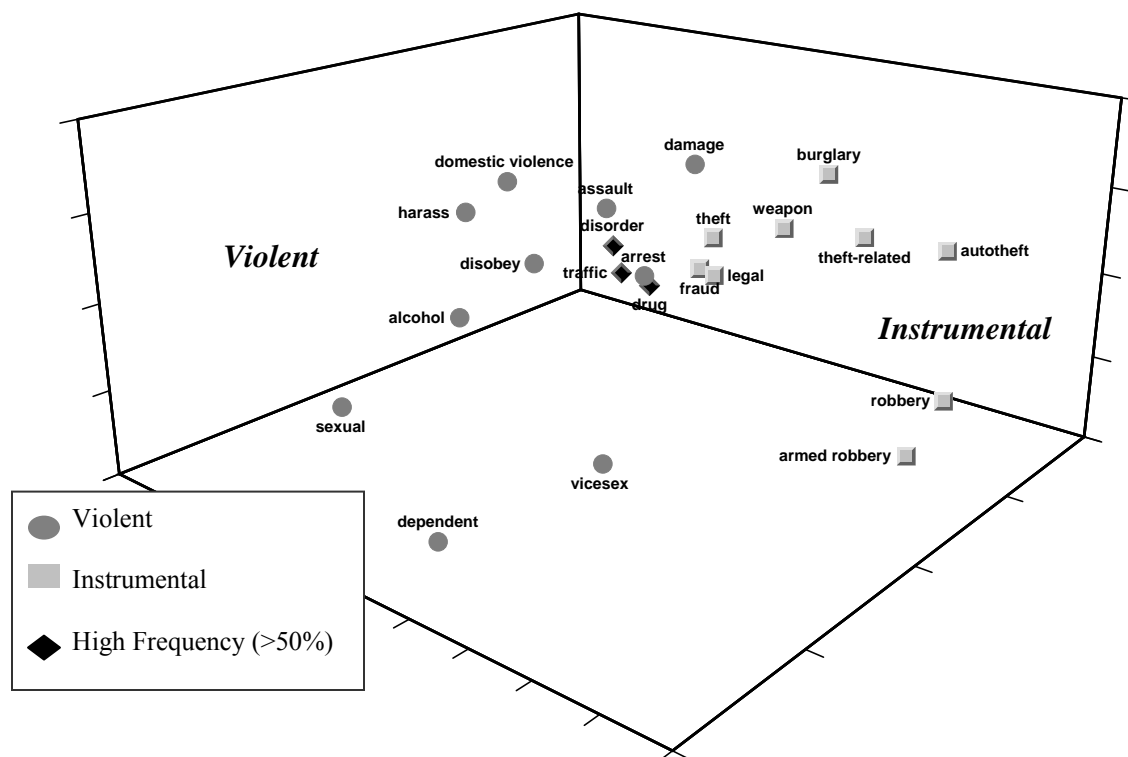
**Figure 2.4.1: Criminal history distribution showing the mean, median, and maximum number of arrests and convictions across the sample. (N = 137)**

Figure 2.4.1 shows that offenders had typically been arrested and convicted multiple times. While 96% is quite larger than what has been found in other studies of homicide offenders' criminal histories, this finding is consistent with emerging research on violent offending in

Cincinnati. Recent data presented by the *Cincinnati Initiative to Reduce Violence* (CIRV) (2008) indicated that most violent offenses are committed by a small group of offenders and of those known to police about 95% have a criminal record with an average of 7.5 felony arrest charges and 33% have 10 or more prior felony arrests.

#### 2.4.1 Aim 1: SSA of Offenders' Criminal History

Aim 1 of the study was to identify thematic patterns in prior offending amongst homicide offenders with groups of similarly related offenses co-occurring across cases. Smallest Space Analysis (SSA) was used on the prior convictions of the 122 offenders who were suitable for this portion of the study and the resulting SSA is seen in Figure 2.4.2.



**Figure 2.4.2: Smallest Space Analysis of homicide offenders' prior criminal convictions with thematic division between offenses that are violent and those that are instrumental. Coefficient of alienation = 0.12939**

Again, each point in Figure 2.4.2 represents one of the 22 criminal history conviction variables. The closer two conviction variables are in the plot, the more often they co-occur together in the criminal histories of offenders in the sample; those occurring in the same region are thematically similar. Examining the distribution of the variables indicates a clear partitioning of the geometric space into two broad thematic regions, violent versus instrumental offenses. Violent offenses, both direct and indirect violent offenses, co-occur on the left side of the plot. Instrumental offenses – offenses that are guided by the desire to attain some sort of ulterior goal or benefit (Feshbach, 1964) – co-occur on the right side of the plot. There were also three high frequency variables that occurred in more than 50% of cases in the sample: disorderly offenses (51%), drug offenses (62%), and traffic offenses (85%). Because these offenses occurred in the majority of offenders' conviction histories, they do not help to differentiate between offenders and are not included in the thematic framework.

#### *2.4.1.1 Violent Offenses*

The upper most portion of the SSA plot in Figure 2.4.2 shows a co-occurrence of offenses that are more directly violent. Domestic violence and assault involve direct person to person violence, while damage offenses involve direct violence against property or a physical structure as opposed to a human victim. Most of the variables occurring in the remainder of the violent region involve more indirect violence against a person, legal entity, or disregard for the well-being of another. Harassment offenses (e.g., menacing, stalking, etc.) involve indirect, usually verbal, violence against a person. Arrest offenses (e.g., fleeing, resisting arrest, etc.) occur on the border between the violent and instrumental themes but is more violent in that most convictions in this sample were for resisting arrest which is physical resistance to law enforcement authority. Most of the remaining variables in the violent region involve indirect

violent offenses that are antisocial (i.e., the variables alcohol and disobey) or involve exploitation of or disregard for others (i.e., the variables sexual, dependent and vice-sex). Alcohol related offenses and violation of any city/local ordinance (the variable 'disobey') were allocated to the violent region because they involve antisocial disregard, not for people, but for socially acceptable rules of conduct but, unlike instrumental offenses, are not aimed at any sort of material or personal gain. Another reason for allocating alcohol offenses to the violent region is the potential relationship between alcohol use and violent offending. According to statistics published by the Bureau of Justice Statistics (2007b), 41% of violent offenders placed on probation and those in local jails had been drinking at the time of their offense, as had 38% of those in State prisons. Collectively occurring at the bottom of violent region in Figure 2.4.2 are three offenses – sexual offenses, crimes against dependents (e.g., child neglect, animal cruelty) and vice-sex offenses (e.g., prostitution). Sexual offenses can contain an element of direct violence in which a human victim is physically targeted and harmed as in the case of rape, but the violence in sex offenses has an exploitative element to it as well in which there is disregard for the victim who is being treated as an object making it thematically similar to vice-sex offenses and crimes against dependents. These three offenses and their co-occurrence in the lower portion of the violent region of the SSA plot in Figure 2.4.2 may indicate the possibility of a sub-theme of violent offenses that involve more exploitative, object-oriented violence.

#### *2.4.1.2 Instrumental Offenses*

The offenses occurring in the instrumental region are guided by the desire to acquire some sort of ulterior goal or need – other than harm to a victim – either through the direct acquisition of material or monetary items or some sort of tangible benefit for the offender. Included in this region are offenses typically considered property offenses (e.g., FBI, 2006b),

such as burglary, theft, and auto theft and involve the direct theft of goods or money. Theft-related offenses rightfully co-occurred in this region as well, as these offenses involve any sort of theft-related action or crime that stops just short of physically stealing something of value (i.e., possession of criminal tools, receiving stolen goods, etc.). In the same manner, fraud offenses involve the taking of property or money or acquisition of benefits through the use of deception. The term 'instrumental' was applied to this thematic region as opposed to the legal classification 'property' offenses because many of the offenses did not involve direct crimes against property or the physical theft of material items, but are still instrumental in the sense that they are oriented around obtaining a benefit or goal. For example, legal offenses (e.g., obstruction of justice, perjury, etc.) do not involve taking material items but are instrumental in the sense that the offender is seeking to evade detection or prosecution. Weapon offenses had a high association with the offense burglary. This may simply indicate that some individuals committing a burglary offense are prepared for a confrontation when committing the offense should they come into contact with a resident of the home or business being burglarized. Unlike other theft offenses, robbery and armed robbery involve the taking of property or money directly from a human victim and, in the case of armed robbery, with the use of a weapon. This has led some to suggest that they are in fact violent offenses (e.g., Delisi & Scherer, 2006; Soothill et al., 2002; Youngs et al., 2004). However, these offenses by definition involve the taking of money or material items and are therefore instrumental in their aim and the willingness to confront a person may be a reflection of a more direct and aggressive means to obtain an instrumental goal.

#### *2.4.1.3 Summary of Aim 1*

The first aim of the study was to determine if the prior convictions of homicide offenders could be examined using a thematic approach that emphasized the theoretical constructs

underlying groups of thematically similar offenses. By examining the co-occurrences of 22 conviction variables, a basic framework was developed which differentiated offenses involving direct or indirect violence or exploitation of a victim and offenses that were aimed at the attainment of an ulterior item or goal other than harm to a victim.

The results not only demonstrated a thematic split between violent and instrumental prior convictions but potential sub-groups of offenders emerged within the two themes involving five conviction variables, robbery and armed robbery in the instrumental region and sexual, crimes against dependents and vice-sex offenses within the violent theme. What this may suggest is that an additional dimension needs to be added to the instrumental/violent framework to truly capture the prior conviction patterns of homicide offenders that takes into account the potential sub-groups of more aggressive instrumental offenses and violent offenses where the victim is being treated as an object. Overall, the current study developed a basic thematic model of criminal specialization. The next step in the analysis is to test the model by examining how specialization is manifested in each offender in the sample.

#### **2.4.2 Aim 2: Thematic Specialization**

The second aim of the study was to determine if offenders specialize in the convictions that precede their homicide by examining if each offender's criminal history falls primarily within a single thematic region. To accomplish this, each case was individually examined to see if offenders' convictions were dominant in either the violent or instrumental region. This process involves two separate issues: (1) the method used (i.e., a proportional method or a count method that takes into account quantity of variable presence) and (2) the level of stringency of the cut-off criterion that must be satisfied before a case can be considered dominant in a single theme. Although protocols for determining dominance have been put forward (e.g., Salfati, 2000; Salfati

& Bateman, 2005; Salfati & Canter, 1999), there has not been a discussion in the literature regarding the difference between approaches.

#### *2.4.2.1 Determining Dominance: Methodological Considerations*

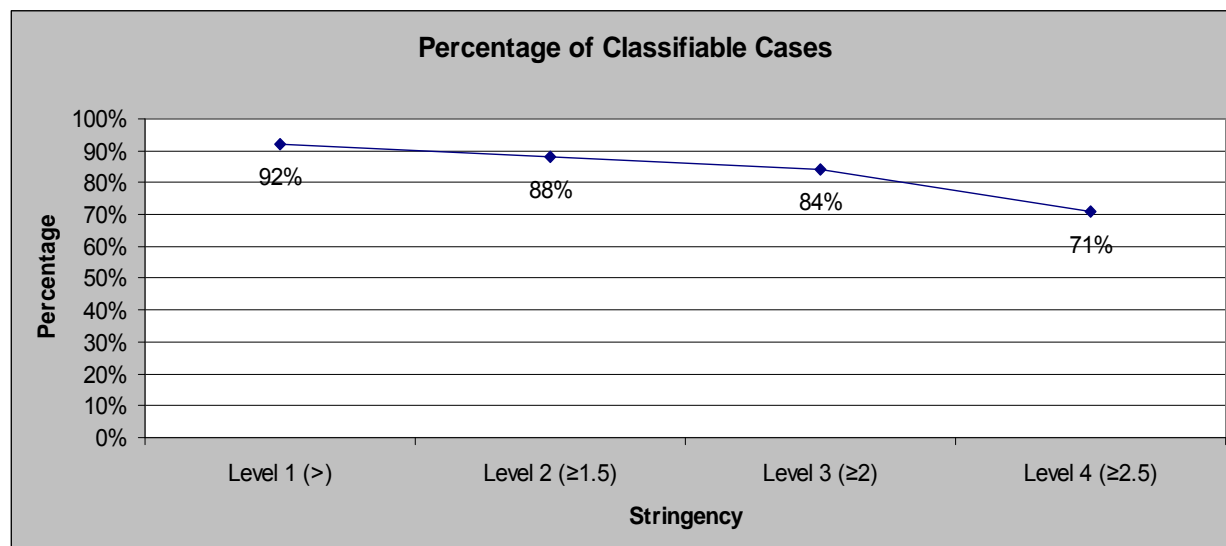
To determine dominance in one theme over the other, a proportional score is used by most thematic studies of homicide (e.g., Salfati, 2000; Salfati & Bateman, 2005). Using this method, each variable is scored as present (1) or absent (0) for each case in the sample. A proportional score is then calculated for each theme by adding the number of variables present within a theme for that case and dividing by the total number of variables in the same theme. The resulting proportional scores for each theme are then compared to determine if a case is dominant and is seen in the following formula using the current study's model as an example:  $1/9$  (instrumental) and  $3/10$  (violent) = 11% versus 30%. In this example, the offender was convicted of only one of the nine possible instrumental crimes and three of the possible ten violent crimes, giving the offender nearly three times the proportional score in the violent theme compared to the instrumental theme. Even applying a very conservative cut-off criterion such as requiring twice the proportional score in one theme compared to the other (e.g., Salfati, 2000), this offender would be considered a specialist in prior violent convictions. The proportional scoring method may even be preferable in models when there are an unequal number of variables between themes, because calculating a proportion standardizes the scores that are compared. Consider, however, the variables used in the current study. Because the framework developed here used offenders' prior convictions, the variables could be recorded as present or absent or the actual number of prior convictions for each offense could be used. Once the actual *number* of times the offender was convicted for each offense present, their dominance classification may change. Using the previous example, the individual may have been convicted of the single

instrumental offense thirteen separate times, but been convicted of each of the three violent offenses only one time each. This would mean that the individual had thirteen prior instrumental convictions and only three violent convictions and, regardless of the cut-off criterion that is applied, this particular offender is clearly specializing in instrumental offenses with more than four times the number of instrumental convictions. This example illustrates how the proportional method can hide the true offending patterns in a given offender's conviction history. Due to the fact that the present study is not focusing exclusively on the types of convictions that precede the homicide, but also *how much* of each offense is present in their conviction record, the count approach that considers the actual number of convictions was used to determine specialization in the current study.

The next question that was addressed is how stringent of a criterion should be used to determine specialization in a single thematic region. The least stringent criterion that could be applied is simply that one theme must have a higher score compared to the other theme, but this method does not effectively distinguish between thematic regions to a degree that is useful (Salfati & Bateman, 2005). A more stringent criterion that has been used (Salfati & Bateman, 2005) requires that a theme must have 1 ½ times the score of the other theme. The most stringent criterion appearing in the literature to date (e.g., Salfati, 2000; Salfati & Haratsis, 2001), is that the dominant theme must have twice the score of the second theme. Stringency levels higher than this have not been used in thematic studies to date, but to examine the implications of using a higher level of stringency the current study added an even more stringent criterion requiring the dominant theme to have 2 ½ times the score of the other theme. Using the count method taking into consideration overall frequency of convictions, each of the four methods discussed above were examined.

### 2.4.2.2 Thematic Dominance in the Current Study

Figure 2.4.3 shows the percent of offenders in the current sample (N=122) who were able to be allocated as a specialist to one dominant theme, instrumental or violent, as the stringency of the cut-off criteria increased.



**Figure 2.4.3: Distribution of classifiable cases: Percentage of cases that could be allocated to either the violent or instrumental region.**

Using the most liberal criterion only requiring a higher number in one theme compared to the other and the moderately stringent criterion requiring 1 ½ times the score in the dominant theme (Salfati & Bateman, 2005), 92% and 88% of offenders respectively could be allocated to a single theme and considered specialists. Applying the stringent criterion requiring double the score in one theme compared to the other introduced by Salfati (2000), 84% of offenders could be allocated to a single theme. Even using the most stringent criterion requiring 2 ½ times the number of convictions in a single theme, 71% of the offenders in the sample could be allocated to a single thematic region and considered specialists.

Method 3, requiring double the score in one thematic region compared to the remaining theme, was ultimately chosen as the most appropriate method for the current study in order to remain consistent with the existing literature on determining dominance in homicide studies (e.g., Salfati, 2000; Salfati & Haratsis, 2001) and because no major advantage or disadvantage was seen with the extremely stringent criterion requiring 2 ½ times the score in the dominant theme. Using this criterion ( $\geq 2x$ 's), only 16% of offenders were classified as generalists (i.e., they could not be allocated to either the instrumental or violent themes). Of these classifiable cases, 52% were classified as instrumental specialists and 48% specialized in violent offenses.

#### 2.4.2.3 *Summary*

In accordance with Aim 2 of the study, these results show that a substantial percentage of offenders could be classified as specialists within one of the two thematic regions in the model developed in Aim 1. The results show that the instrumental/violent framework deserves further examination as a way to conceptualize specialization in homicide offenders' criminal histories and strengthens the use of the thematic approach in studies of offender criminal history, because it takes into consideration the theoretical constructs that underlie similar offenses rather than relying on restrictive legal definitions. The fact that the majority (84%) of offenders could be allocated to a single theme within the framework shows it is able to effectively differentiate between offenders' backgrounds and may have both theoretical utility for researchers and practical application for investigators. In terms of profiling these offenders, a problem would have arisen if most, or all, of the offenders had the same thematic classification for their prior offending it would most likely not be possible to profile these offenders. Essentially, such an outcome would mean that in linking an offender's current crime scene behavior to their criminal history, most offenders would have remarkably similar prior offenses in their background and it

would not be possible to refine suspect lists using criminal history as a discriminator as intended by offender profiling.

## **2.5 DISCUSSION**

The primary goal of the current study was twofold. First, the study sought to examine if the thematic approach to crime scene research, in which groups of similar variables co-occur in thematic regions, could be applied to the prior convictions of homicide offenders to develop a general model of offender criminal history. Second, the study sought to determine if offenders demonstrated specialization and, in this effort, compared four levels of stringency for the cut-off criterion before a given offender's conviction history could be considered dominant in a single theme. The results showed that similarly themed criminal offenses, measured using convictions, tend to co-occur across a sample of homicide offenders. Results also indicated that while offenders may not specialize in a specific legally defined criminal offense, they do specialize in groups of offenses that can be linked through a common underlying construct or theme. Moreover, the results presented the possibility of potential sub-groups of offenders within the violent and instrumental themes that may suggest that the framework could be refined to make it more sensitive to the existence of potential sub-groups.

The current study is the first to undertake an examination of specialization among homicide offenders using a thematic approach and to determine if this method that has been applied to homicide crime scene behaviors in a number of studies (e.g., Salfati, 2000; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003) could be used to examine criminal history. However, future studies could examine patterns in criminal history using other methods that essentially seek to accomplish the same goal. For example, recent specialization research (e.g., Sullivan et al., 2006) has employed latent class analysis (LCA) because it "(1) avoids the rigidity

of requiring the repetition of a single crime and (2) searches for latent classes of offender types rather than strictly confirming/refuting the presence of research constructed categories” (McGloin et al., 2009, p. 249). In other words, both SSA and LCA search for underlying structures and patterns in the data to develop broader groups of offenses/offenders. Therefore, LCA at least deserves consideration as an alternative method for identifying patterns in prior offending of homicide offenders.

Subsequent planned studies will continue to examine the violent/instrumental framework of criminal specialization in order to further test the model among different samples of offenders, including serial homicide offenders. It is possible that serial homicide offenders’ prior criminal convictions may also be conceptualized within the violent/instrumental framework developed here, but that serial offenders differ from single-victim offenders in terms of the degree to which they are likely to be classified as specialists in instrumental or violent offenses. These two groups of offenders are commonly assumed to differ substantially from one another, but there is a paucity of research actually comparing these offenders directly in terms of criminal history and specialization (see Wright et al. [2008] for a discussion). Examining these offenders together in terms of a single framework of criminal specialization has its benefits. In order to identify important points of difference between these offenders, it must first be determined how they are similar, because similarities in prior offending would not be useful in differentiating these offenders from an investigative standpoint. This would allow for a more comprehensive understanding of how serial and single offenders truly differ from one another in terms of their prior convictions, which could then lead to comparisons of how this particular offender characteristic relates to their subsequent homicide crime scene behaviors.

As mentioned at the outset of the article, once a framework for prior criminal offending is identified that sufficiently captures prior offending patterns among homicide offenders it may be possible to link prior offending to current homicide crime scene behaviors. This has both practical and theoretical implications. First, it would allow for a more comprehensive understanding of homicide and preceding criminality. Second, examining whether individuals with similar patterns in prior offending are committing similarly themed behaviors at the crime scene provides an objective link between prior and current offending that can ultimately be used by investigators to refine suspect lists using criminal history. In other words, offender profiling, early behavioral typologies, and thematic frameworks assume that individuals can be allocated to one type or theme over another according to their crime scene behavior and those with similar crime scenes would have similar personal characteristics. In the current study, offenders were nearly equally likely to have either a violent or instrumental criminal history, but for such information to be applied in homicide investigations these individuals would have to commit homicides that are thematically different.

## **2.6 CONCLUSION**

The framework of criminal specialization proposed under Aim 2 in Chapter 1 was that single-victim and serial offenders would essentially differ in terms of the degree of criminal specialization evident in their prior offending. However, the proposal also discussed how multi-dimensional scaling (MDS) procedures, specifically Smallest Space Analysis, would be used to analyze each framework. The current project is the first to use MDS to centrally focus on themes present in the criminal histories of homicide offenders and no study of criminal specialization among homicide offenders had employed a thematic approach as done here.

Using such a method, the preceding analyses demonstrate that this approach is uniquely able to consider specialization in a manner that is less restrictive than considering offenses purely in terms of their legal classifications. The results demonstrated that most of the single-victim offenders could be allocated to a single theme and considered specialists. In terms of the original framework of criminal specialization, serial and single offenders may not differ in the *degree* of specialization, as in a continuum, but instead in the *type* of offenses in which they are likely to specialize. This possibility is explored in Chapter 4, which directly compares single-victim and serial offenders in terms of the violent/instrumental framework found among single-victim offenders. However, as discussed above, the analyses undertaken in the pilot study highlighted a critical issue in studies employing Smallest Space Analysis – how the proposed thematic frameworks are tested and how individuals are allocated to a single thematic region. This methodological issue deals centrally with testing the framework developed in the current chapter and will have further implications for any additional MDS analyses. For this reason, it was deemed appropriate for detailed examination and is the subject of Chapter 3.

## **CHAPTER 3: METHODOLOGICAL CONSIDERATIONS OF DETERMINING DOMINANCE IN MULTI-DIMENSIONAL ANALYSES OF CRIME SCENE BEHAVIORS AND OFFENDER CHARACTERISTICS**

Trojan, C. & Salfati, C.G. (2009). Methodological considerations of determining dominance in multidimensional analyses of crime scene behaviours and offender characteristics. *Journal of Investigative Psychology and Offender Profiling*, 5(3), 125-145.

### **3 INTRODUCTION TO CHAPTER**

After a framework of single-victim offenders' criminal histories was developed in Chapter 2, several methods for testing the framework were compared. Determining how individuals dominate in thematic regions has received scant attention in the Investigative Psychology literature among studies using multidimensional scaling analyses. Studies have adopted and adapted several different methods, making it extremely difficult to generalize results across studies employing different approaches. The following chapter is framed within the broader context of how individuals have traditionally been classified in the psychological, profiling, and investigative psychology literature and undertakes a detailed examination of the implications for varying methodological approaches to allocating offenders to thematic groups. The broad focus of this chapter is to bring attention to a neglected topic in multi-dimensional analyses of crime scene behaviors and offender characteristics and calls for the adoption of a standardized approach to determining dominance across studies.

### **3.1 LITERATURE REVIEW**

There has been a steady increase over the past decade in Investigative Psychology (IP) studies that develop models of criminal offenses and offenders employing a variety of methods testing the frameworks in terms of how individual cases are allocated into groups or types. The

first point focuses on models that look for common underlying theoretical or psychological constructs – themes – that unite groups of individual variables into coherent groups (Canter, 2000). The latter process refers to how cases dominate within a single thematic region meaning that a majority of the variables present in that case fall under a single thematic heading through the examination of individual cases. This process of determining dominance was first introduced in the study of homicide by Salfati and Canter (1999) and later further developed by Salfati (2000), laying the foundation for studies to come that either adopted or adapted the initial methodology (e.g., Almond, Canter, & Salfati, 2006; Canter, Bennell, Alison, & Reddy, 2003; Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004; Salfati & Bateman, 2005; Salfati & Haratsis, 2001; Salfati & Park, 2007). As the following paper will discuss, the process of examining how cases are allocated to themes arose to strengthen the thematic approach in terms of effectively differentiating between individuals in empirical approaches to offender profiling within the IP field to show that individuals could reliably be classified into distinct thematic types. This had been a shortfall of previous typologies both in offender profiling of homicide (e.g., Holmes & Holmes, 2002; Keppel & Walter, 1999; Ressler et al., 1995) and elsewhere (e.g., see Groth's [1979] typology of rape) that failed to clearly differentiate between types of offenses or offenders.

There are two methodological issues central to the process of determining thematic dominance. The first pertains to how scores are produced that became the basis of comparison for allocating individuals into thematic groups and involves one of two methods. The first approach – a count method (Salfati & Canter, 1999) – scores each individual by counting how many variables that case demonstrates in each theme, which yields a continuous number as a score for each theme that can then be compared. The alternative approach – the proportional

method (Salfati, 2000) – takes into account the number of variables per theme by calculating a proportion and produces a standardized score for each theme. The use of a particular method may be up to the discretion of individual authors or may sometimes be dictated by factors inherent in the study itself, such as the presence of unequal numbers of variables per theme, which may advocate for a proportional approach, or how the variables themselves are defined or coded. The factors that influence this process may lead to the adoption of one approach over another and may affect how cases are allocated to a single theme as this paper will show.

The second methodological issue involved in determining how cases dominate in one thematic region involves the stringency of the criterion used as a cut-off point before a case is allocated to one thematic type, which has a strong potential to impact a given study's results. The stringency of the cut-off criterion will determine the percentage of cases that are classifiable in a single dominant theme, thereby determining a model's ability to effectively differentiate between individual cases. As studies to date have shown (e.g., Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999), different approaches affect not only the actual results themselves but highlights the importance of providing a clear discussion of the implications of using different levels of stringency and making recommendations for a standard approach so that results from multiple studies can be used to build up our understanding of an offender's propensity to display theme dominance. For example, Salfati and Bateman (2005) showed that using a moderate criterion, such as requiring a score that is 1 ½ times that of the other theme, may appear to more effectively differentiate individuals due to a higher percentage of cases being allocated to a dominant theme compared to a stringent criterion, such as requiring a score that is double that of the other theme. This highlights the idea that the field of IP would benefit from a more standardized approach to determining dominance in thematic studies.

This paper critically examines the two issues that are central to determining dominance in IP thematic frameworks: (1) using the quantity of variable presence – count method – or a proportional method and (2) the level of stringency of the cut-off criterion for assigning a case to a single dominant theme. To facilitate a discussion towards the eventual adoption of a standard protocol for classifying individuals in IP frameworks, this paper first traces the evolution of how offenders and offenses have been classified into groups in early offender profiling research and elsewhere, highlighting some of the problems that were identified and ultimately gave rise to the development of thematic models used in IP. The current study is part of the next phase of this evolutionary process involving serious consideration of methodological issues as yet unresolved and attempting to contribute to the further development of the field focusing on enhanced validity and utility of these models in investigative application.

### **3.1.1 Background to the Current Analyses**

Historically offenders have been relegated into distinct groups and subtypes on a variety of psychological and/or behavioral measures under the premise that a better understanding of the etiology and characteristics of the overall phenomenon can be attained by examining the more fundamental components. In criminology, typologies have been widely used for decades to better understand crime, first focusing on contrasting types of offenses and offenders and later through a concentration on criminal trajectories and the amount of crime within offenders (Francis et al., 2004). Other more specific foci have proven difficult to distinctly nail down in terms of how subgroups within a particular offense should be identified and defined in a meaningful and useful way due to the apparent heterogeneity of the offense itself, such as in the example of sex offenders (see Polaschek [2003] for a discussion). Still, this process of attempting to classify offenders into groups enhanced theoretical knowledge of various types of offenses and offenders

but attempts would soon be made to combine theory with practical application in an attempt to make theoretical knowledge about offenses and offenders useful to investigators, as was the case with early offender profiling.

Early attempts at profiling violent crime, particularly homicide, came mainly from clinical psychology and psychiatry, due to clinicians working with serious offenders in the form of court referrals for evaluation or treatment and using these evaluations as a basis for their studies (see Bartol [1995] and Salfati [2009] for a discussion). Specifically looking at homicide, these early classification systems – and their resulting profiles – were heavily dependent on clinical psychopathology and focused on internal psychological processes to divide offenders into types (see for example, Brittain [1970], Satten, Menninger, Rosen, & Mayman [1960], and Tanay [1969]). Brittain (1970) provided a detailed profile of a sadistic murderer and in doing so identified sadistic murder as a sub-type of sexual murder without clearly defining the parameters that establish it as a distinct sub-group. Moreover, if the sub-type really exists it would be difficult to test its components due to his use of largely subjective items, saying that these individuals may be “introspective”, “withdrawn”, “insecure”, “narcissistic”, and “egocentric”. Although some characteristics Brittain (1970) identified are more objective, such as saying they are “unmarried”, “generally under the age of 35”, and “male”, these are fairly broad characteristics that could apply to a large number of offenders making them of limited utility in differentiating between individuals in an investigative capacity. The profile provided by Brittain (1970) introduces the issue that a profile or typology of offenders that is based primarily on clinical observations may have limited investigative utility because it was developed within a diagnostic setting. In fact, many typologies of sex offenders have had little investigative utility because they were mainly intended for diagnostic use or in treatment or assessment (see

Polaschek [2003] for a discussion). Similar problems are raised by clinically based typologies of rape such as that provided by Groth (1979) in that while the characteristics of the rape types are explained in some detail, it is unclear exactly how an offender was allocated to one type over another and the focus of the types themselves are on motivating forces that are not easily identified or measured.

As the following pages will show, the need to define types of offenders in terms that are objectively identifiable and therefore testable gave rise to early behavioral typologies and the recognition that theoretical knowledge and empirical backing are intertwined with practical application was critical in the subsequent development of the thematic models that later came to define the IP approach to offender profiling. Offender behavioral profiling arose out of the recognition that the actual behaviors an offender engages in at the actual crime scene provided a more objective, usable, and reliable measure than subjective psychological processes and personality traits and the focus shifted from the examination of only the offender to a more careful examination of the offender's behaviors themselves.

### **3.1.2 Early Behavioral Typologies of Offenses and Offenders**

The core premise of offender profiling is that it is possible to derive characteristics of an offender from the behaviors they engage in at a crime scene (Canter, 1995) and rests on the idea that there is an underlying psychology to both offenders' behaviors and offenders' characteristics (Canter, 2000). The move away from intangible psychological processes as the defining features of types of offenders, specifically homicide offenders, to the behavioral evidence they leave at a homicide crime scene was spearheaded by the Federal Bureau of Investigation (Ressler et al., 1995). Their work gave rise to a typology of offending behavior based on the degree to which

their crime scenes reflected organized or disorganized behaviors and it was then suggested that this would carry-over to the offender's personal characteristics (Ressler et al., 1995).

While the work by Ressler et al. (1995) was key in the identification of crime scenes as providing a wealth of behavioral evidence instead of just forensic evidence, the developers themselves later acknowledged that the work had not been systematically validated through empirical research (Douglas, Burgess, Burgess, & Ressler, 1992). The call to test the validity of the two-part model was eventually taken up by Canter et al. (2004) and Canter and Wentink (2004) would additionally subject a second much discussed behavioral typology of offenders provided by Holmes and Holmes (2002) that assigned homicide offenders to five types.

The key issues identified by Canter et al. (2004) and Canter and Wentink (2004) that made the classification of individuals under these typologies difficult to empirically examine was that the variables defining the crime scene types could not be easily linked to objective behaviors visible at the crime scene. Additionally, the original FBI typology did not clearly define the parameters by which an offender should be considered organized or disorganized in terms of the degree or amount of variables that would clearly allocate them to one of the two types and the same criticism has been raised of other early typologies (e.g., those provided by Holmes & Holmes [2002] and Keppel & Walter [1999] for example). Within the FBI typology, this problem was exacerbated by the later addition of a third type of crime scene, simply labeled 'mixed' in which "a crime scene may reflect aspects of both organized and disorganized characteristics" (Douglas et al., 1992, p. 133). In other words, many individuals may display a mixture of both types of behaviors, which limited the practical utility of the model in terms of differentiating between offenders. In fact, the study by Canter et al. (2004) failed to find support for a clear dichotomy of organized and disorganized crime scene behaviors. In a similar vein,

Canter and Wentink (2004) failed to find five distinct types of serial homicide as was suggested by the model provided by Holmes and Holmes (2002). In addition, Canter and Wentink (2004) point out a fundamental problem with early typologies in general and particularly evident in Holmes and Holmes' (2002) typology – notably the substantial overlap of defining behaviors between types, which “fails to distinguish one type from another” (p. 493). The impact this had on classifying offenders as belonging to a specific type within the original model is unclear due to a second methodological weakness – the failure to clearly indicate how offenders were classified to a single type when these overlapping behaviors were present in a given case (Canter & Wentink, 2004).

Early behavioral typologies, particularly the FBI model provided by Ressler et al. (1995) were fundamental in the move to an objective focus on behavior and what these behaviors can reveal about an offender. Yet, the weakness identified by Canter et al. (2004) and Canter and Wentink (2004) indicated that these typologies were limited by their ability to effectively discriminate between offenders based on information that is easily identifiable at a crime scene and/or easily accessible to investigators. The critical need to improve upon the foundations established by this earlier work and to enhance the validity of allocating offenders into distinct groups or sub-types led to the development of IP which aimed to confront these methodological problems and took the development of empirically grounded models of offenders and crime scenes as a focus.

### **3.1.3 Investigative Psychology and the Thematic Approach**

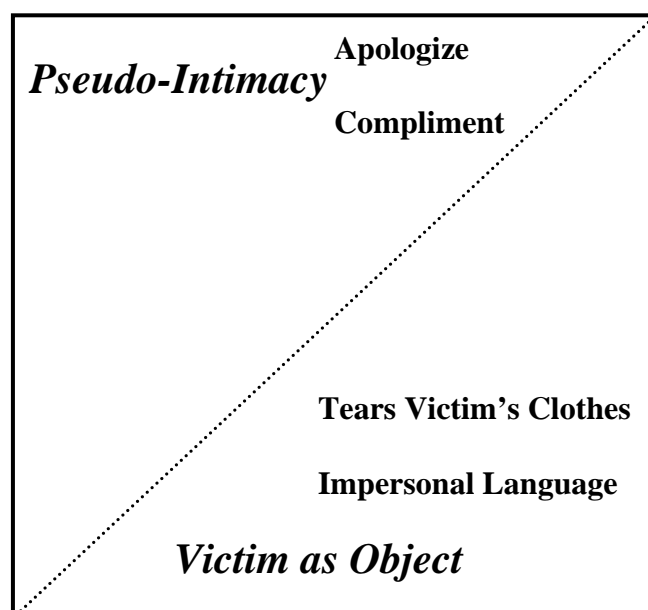
Investigative Psychology emerged to unite theoretical backing, sound methodology, and practical application through the development of new empirical models of crime scene behaviors and offender characteristics for a variety of offenses, including homicide and serial homicide

(e.g., Bateman & Salfati, 2007; Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003), rape and serial rape (e.g., Canter & Heritage, 1990; Canter et al., 2003; Hakkanen, Lindlof, et al., 2004; Kocsis et al., 2002a), arson, (e.g., Canter & Fritzon, 1998; Hakkanen, Puolakka, et al., 2004), robbery (e.g., Porter & Alison, 2006a), burglary and serial burglary (e.g., Bennell & Jones, 2005; Santtila, Ritvanen, et al., 2003) and geographic profiling of serial rape (e.g., Canter & Larkin, 1993) and serial homicide (e.g., Canter, Coffey, Huntley, & Missen, 2000; Godwin & Canter, 1997; Lundrigan & Canter, 2001).

Many of the IP studies listed above employ multi-dimensional scaling (MDS) analyses that examines offender behavior within the context of behavioral themes – patterns that underlie a group of individual variables connected by a common psychological or theoretical construct (Canter, 2000). One of the most frequently used MDS analyses has been Smallest Space Analysis (SSA). This technique considers each variable in relation to all other variables and allows the researcher to identify patterns in the data that may not be evident with more traditional quantitative analyses because it produces a visual representation of the relationships between variables as they co-occur in a geometric space. In this space, the physical distance between variables in the plot correspond to the strength of the correlations between variables in the underlying association matrix (Guttman & Greenbaum, 1998) and variables occurring in the same region of the geometric plot share a common theme (Salfati, 2003).

In the first IP study to thematically analyze crime scene behavior and use SSA, Canter and Heritage (1990) stated that unlike earlier typologies which incorporated offender characteristics with crime scene behaviors, it first must be determined if the behaviors themselves “have some comprehensive coherence to them” (p. 202). Through the examination of sixty-six rapes perpetrated by twenty-seven offenders, Canter and Heritage (1990) did in fact

find a co-occurrence of behaviors that could be considered in the context of thematic groups. Among the patterns identified the authors found, for example, that the behaviors of complimenting the victim and apologizing to the victim co-occurred and similarly tearing the victim's clothing and the use of impersonal language also co-occurred with one another in a separate region of the plot (Canter & Heritage, 1990). While these individual behaviors are different, each pair could be linked by underlying themes of pseudo-intimacy and victim as object respectively and an approximation of the relationships between these variables in the above example is seen in Figure 3.1.1 below:




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**Figure 3.1.1: An example of SSA showing thematic division; adapted from Canter & Heritage (1990)**

As seen in Figure 3.1.1, the proximity of complimenting and apologizing means that they are likely to co-occur in a given case and are unlikely to co-occur with the victim as object behaviors due to their location on the opposing side of the plot.

In this manner, SSA is used to examine if individual variables when viewed collectively can be grouped into thematic regions. However, this is simply a first step. Once such models are developed, the next step involves testing the model's applicability through the examination of individual cases in order to determine if a given case can be allocated to a dominant theme (Salfati & Canter, 1999). Testing a thematic model's applicability is a crucial step. If most cases can be allocated to a single theme, it demonstrates that the thematic types are sound and able to differentiate between cases or offenders. However, if most cases cannot be classified into a single thematic region – they contain an equal mixture of variables from more than one theme – the model cannot effectively differentiate between cases or offenders, and should be reconsidered or refined. Here again is the same issue raised earlier – the addition of a broad 'mixed' category to the organized/disorganized typology provided by Ressler et al. (1995). The addition of the mixed category by Douglas et al. (1992) limits the model's utility because it implies that many individuals will fall into both of the groups that define the typology itself. Despite the improvements in how models are developed and individuals are classified into discreet sub-types within these models, the above discussion illustrates how some of the same problems with early research that spurred the development of IP as a field can still arise in thematic frameworks if they are unable to demonstrate dominance of cases within a single theme. This highlights the need to develop and employ a more standardized protocol for allocating cases or offenders to groups in thematic frameworks.

As part of the process of determining dominance in MDS models of crime scene behavior and offender characteristics, several methods have been employed that vary in terms of how an individual case's score for each theme is calculated and how stringent of a criterion must be satisfied before that case is considered dominant within a single theme.

### 3.1.4 Determining Dominance

The first IP study to confront the issue of determining dominance in an MDS model of crime scene behavior was the study of single-victim homicide by Salfati and Canter (1999). Other thematic studies since then have varied the approach introduced by Salfati and Canter (1999) according to the specific focus and needs of a particular study (e.g., Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004; Salfati, 2000; Salfati & Bateman, 2005; Salfati & Haratsis, 2001) but without serious consideration or critique of the methods proposed. However, across the studies that will be discussed here, two issues seem to arise that affect the use of a particular approach and were outlined at the outset of the paper: (1) use of a proportional or a count method and (2) stringency of the cut-off criterion employed. These issues are typically only examined within the IP field because the central focus is how to classify offenders within thematic regions for the purposes of profiling; for such a model to be valid offenders must be able to be allocated to a single thematic region. An examination of how various thematic studies have previously dealt with these two components in determining dominance will help to illustrate the methodological issues that arise from the use of one method over another and aid in the overall debate as to how to move towards a standard approach in MDS studies.

#### 3.1.4.1 Scoring Offenders: Count versus Proportional Scores

Salfati and Canter (1999) developed a model of homicide with three thematic regions: Instrumental-Opportunistic, Instrumental-Cognitive, and Expressive-Impulsive. To test the model, the authors used a count method. Under their approach, a case was scored by *counting the number* of variables that occurred in each thematic region for a given case. This process yielded three continuous numbers as scores for each individual case in the sample that were then compared to determine if the variables present in a given case were primarily contained within

one region according to the cut-off criterion set by the authors (the criteria used as cut-off points in Salfati and Canter and other studies are addressed in the next section). This study laid the foundations for a basic method of determining if a case dominates in one theme. However, Salfati (2000) modified this approach to account for the fact that the total number of behaviors in each theme may vary.

Salfati (2000) used a proportional method to score individuals where for each case in the sample the number of variables present in one theme are added together and then divided by the number of variables occurring in the same theme; this procedure was then repeated for the second theme. This produced a percentage for each theme for each case in the sample. These percentages were then compared and a case was again allocated to one theme if it passed the author's cut-off criterion (Salfati, 2000). Several studies later adopted the proportional method to determine thematic dominance (e.g., Almond et al., 2006; Hakkanen, Lindlof, et al., 2004; Salfati & Bateman, 2005; Salfati & Haratsis, 2001; Salfati & Park, 2007).

Both of the methods used by Salfati and Canter (1999) and Salfati (2000) are sound approaches. However, the use of one method or the other – count versus proportional – in a given study may in fact be dictated by factors within a study itself, specifically, the nature of the variables themselves, such as how they are coded which may be determined by the study's focus, and the nature of SSA itself.

As to the first of these issues, many IP studies of crime scene behaviors involve the use of dichotomous variables for several reasons. First, it has been shown to enhance reliability (Canter & Heritage, 1990; Salfati, 2005). Second, some variables cannot be quantified and are by their nature dichotomous (e.g., victim is or is not female; victim was or was not shot). Some variables, however, can be scored either dichotomously, continuously, or in a scale and the coding decision

may be impacted not only by the reliability of the coding scheme, but also the focus of the study. For example, in an effort to better understand the dynamics of the victim-offender interaction in homicide, Safarik and Jarvis (2005) attempted to develop a reliable quantitative scale for degree of injury based on existing medical models. Trojan and Salfati (2009b), in a study of criminal specialization in the prior convictions of homicide offenders, criminal convictions could be scored dichotomously and the proportional method used by Salfati (2000) could then be applied to examine how offenders dominate within one region. This would be an appropriate approach if the focus of the study was to identify general patterns according only to the *types* of offences in an offender's background. Conversely, if the study sought to examine the overall quantity of offending across the totality of the individual's background, it would make sense to use continuous numbers for each variable that would indicate how many times each conviction occurred within an offender's background and then use the count method to determine dominance. To further demonstrate the impact that using a count or proportional method can have, consider a basic person/property dichotomy of prior offending and an offender whose criminal history is coded dichotomously (present or absent) for each variable in the two broad categories and then coded continuously with the overall number of times they were convicted of a given offense as seen in Table 3.1.1 below:

**Table 3.1.1: Coding of variables under the proportional and count methods**

	Property Offense Variables			Person Offense Variables		
	V1	V2	V3	V1	V2	V3
Dichotomous Coding ( <i>Proportional Method</i> where 1 = present and and 0 = absent)	1	0	0	1	1	1
Continuous Coding ( <i>Count Method</i> )	10	0	0	1	1	1

In this example, the offender was convicted of only one type of the property offenses and all three types of person offenses. This results in proportional scores of 33% and 100% for the property and person groups respectively, making it appear that with a proportional score for person offenses that is three times the score for property offenses this individual specializes in person offenses. However, when the actual number of times the individual was convicted of each offense in each group is considered, the individual's classification would switch in this example because they were convicted of the single property offense a total of ten times compared to only one time for each of the person offenses. Table 3.1.1 demonstrates that when a variable such as criminal history is used, coding the variable as either present or absent can hide true offending patterns and mask offense specialization.

As the above example illustrates, the use of a count or proportional method may be important in the case of some variables where quantity matters and the nature of the variables themselves and the focus of the study are an important consideration when deciding upon the use of the method and may reflect some of the components that need to be considered when moving toward a more standardized approach.

The second factor that may impact the appropriateness of a proportional or count method arises from the nature of SSA itself. The SSA plot is a visual representation of the original association matrix (Canter & Heritage, 1990) and, therefore, the variables that make up each thematic region based on their co-occurrences. Naturally, an uneven number of variables co-occurring in a given region would not be unusual. If the difference in the quantity of variables per theme is large, the scores being compared must be standardized in some manner otherwise the deck will be stacked against the themes with fewer variables if a count method were used. For example, Salfati and Canter (1999) were able to use a count method in part because there

were an almost equal number of variables in each of the three themes with 11, 10 and 9 variables. In contrast, in a study of crime scene actions in arson by Hakkanen, Puolakka, et al. (2004) an SSA revealed four thematic regions with 10, 6, 10, and 5 variables in the thematic regions. Here the count method used by Salfati and Canter (1999) is not appropriate due to the difference in the number of variables between several of the themes (e.g., 10 v. 5) leading Hakkanen, Puolakka, et al. (2004) to use a proportional method to derive the scores for each case which accounted for the unequal number of variables in the respective themes. It may be the case that the proportional method is used, at least in part, for this reason.

The issues discussed in this section highlight the complexity of the debate surrounding the use of the count or proportional method. However, in the interest of standardizing approaches across different studies whenever possible, studies need to more actively address their usage of the proportional and count methods in order to clearly define the parameters for how a particular approach was chosen. While the use of the count or proportional method may in part be dictated by factors arising from the study itself, a more uniform protocol for the stringency of the cut-off criterion is possible.

#### *3.1.4.2 Allocating Offenders: Stringency of the Cut-Off Criterion*

The percent of cases that can be allocated to one theme, and therefore the model's ability to differentiate between cases, is heavily dependent on how stringent of a criterion is used. This is important because the model developed in a study may appear to be strong in terms of the percent of classifiable cases to a single thematic region, when in fact a less stringent criterion was used. A fine line exists between choosing a criterion that is too lenient versus too strict. An appropriate classification strategy would be stringent enough to effectively discriminate between

thematic regions, while at the same time refrain from being overly restrictive in that only a low proportion of the most extreme cases could be classified.

Revisiting Salfati and Canter's (1999) model of homicide, for a case to be considered dominant in a single theme it needed to have a score for that theme greater than the sum of the other two themes. This may be an appropriate method if the model contains more than two themes, but is not without its problems. For example, if a case has three variables present in the first thematic region, two variables in the second region, and none in the third region, the case would be allocated to the first theme (e.g.,  $3 > 2+0$ ). In this instance, the case only displays one more variable in the dominant theme compared to a second theme and may be a consistent issue when models have more than two thematic regions, but a given case only displays variables from two themes. To address this issue, Hakkanen, Lindlof, et al. (2004) proposed of model of rape with three thematic regions and initially adopted the same approach as Salfati and Canter (1999) but added a caveat. In situations where a case only displayed actions in two thematic regions, it could only be allocated to a dominant theme if its proportional score was double that of the other theme. Using this approach, 57% of cases could be classified into a single theme (Hakkanen, Lindlof, et al., 2004). Using the same method in a study of arson, 65% of cases could be allocated to one of the four proposed themes (Hakkanen, Puolakka, et al., 2004). However, this approach raises a significant methodological issue regarding determining dominance in that it involves two different criteria within the same study and does not subject all cases in the sample to the same level of stringency. Studies to date have not addressed the implications of using two different approaches to determine dominance within the same study and if two approaches are used how this can be done in a way that treats cases' dominance with equal weight.

The stringent cut-off criterion that was used by Hakkanen, Lindlof, et al. (2004) and Hakkanen, Puolakka, et al. (2004) when a case only displayed variables from two thematic regions is the most stringent criterion that has appeared in studies to date and first appeared in the study by Salfati (2000). In her study that proposed a two-themed model of homicide, Salfati (2000) required that a dominant theme must have double the score of the second theme and found that 62% of cases could be allocated to a single theme. In a study of homicides in Greece, Salfati and Haratsis (2001) found that 63% of cases could be allocated to one thematic region using the same approach and cut-off criterion as Salfati (2000). The fact that Salfati (2000) was able to allocate a substantial percentage of cases to one theme even using this conservative criterion, as were Salfati and Haratsis (2001), suggests that it deserves serious consideration as a standard cut-off criterion.

Despite the impact of the stringency of the cut-off criterion on how cases are assigned to themes, only one IP study could be located that compared different levels of the criterion. Salfati and Bateman (2005) compared the percent of cases that could be considered dominant using liberal (higher proportion in one theme), moderate (at least 1 ½ times the proportion in one theme), and conservative criteria (double the proportion in one theme). Using the least, moderate, and most stringent criteria 100%, 64% and 41% of cases could be classified. The authors ultimately chose the moderate criterion (1½ times) because it represented a compromise between being overly stringent, where only extreme cases would be able to be classified, and overly broad and unable to differentiate between cases to a degree useful to investigators (Salfati & Bateman, 2005). Prior to adopting this criterion as a standard cut-off point for the allocation of offenders into thematic regions, the criterion introduced by Salfati and Bateman (2005) requiring

1 ½ times the score in one theme compared to the other should be validated in other studies and compared to the more stringent criterion requiring double the score in the dominant theme.

#### *3.1.4.3 Summary*

The above examples illustrate the complexity involved in determining dominance in thematic models and highlight several issues that may influence the development of a standardized approach across studies. Few studies compare different levels of stringency and provide limited justification or critical examination of how or why a specific method or criterion was used even though both can affect the results obtained. This has left a key methodological gap in the IP literature – how stringent of a criterion is appropriate and what factors go into the decision to use a count or proportional method. The current paper is not intended to permanently resolve these issues, but seeks to open the debate on this topic. Additionally, the central focus of the current paper is to address the use of MDS models specifically in relation to offender profiling and does not explore thematic models developed for other purposes, in other fields. Studies of crime scene behavior seeking to differentiate offenders need to more directly confront these issues and justify the use of a particular approach and the factors that led to its use to begin to develop a standard protocol for determining dominance in MDS frameworks.

### **3.1.5 Framework for the Current Study**

#### *3.1.5.1 Background*

In order to address the issues involved in determining dominance within an MDS model, this paper will use a framework of specialization in the criminal histories of single-victim homicide offenders developed in a previous study by Trojan and Salfati (2009b). However, the idea of using a thematic approach to study specialization was largely derived from the debate surrounding how people are classified into groups highlighted throughout this paper and a

revisiting of how the specialist label has typically been applied to offenders will further illustrate the factors that led to the development of the thematic model.

There is a significant debate in the criminological literature pertaining to whether offenders demonstrate specialization or versatility in the offenses they commit (see Klein [1984] for a summary). Britt (1994) states that most research in this area contends that “specialization is found to the extent that a small number of offenders commit the same general type of crime on two consecutive occasions” (p. 178). Among studies of offenders in general, most studies demonstrate versatility or generalization in offending (e.g., Farrington et al., 1988; Parkinson et al., 2004; Simon, 1997). Among the leading proponents for generality in offending are Gottfredson and Hirschi (1990) who state that most offenders demonstrate versatility in their offenses due to the broad concept of low self-control that includes such traits as impulsivity and instant gratification. The authors argue that most crimes require little effort and grow largely out of opportunities open to the offender and for this reason offenders will engage in a variety of different types of offending and analogous, non-criminal behaviors (e.g., smoking, promiscuous sex, etc.) (Gottfredson & Hirschi, 1990).

Despite these assertions, studies have found evidence of specialization. Williams and Arnold (2002), found that some offenses became more specialized as the offenders grew older, particularly for violent and theft offenses, and Francis et al. (2004) found that older males tended to show increased specialization with age and considerable specialization across all age groups of female offenders. Blumstein et al. (1988) found that the type of offense examined seemed to impact the degree of specialization, with offenses such as drug and auto-theft being highly specialized and greater specialization for property offenses generally compared to violent offenses. Farrington et al. (1988) examined approximately 70,000 juveniles’ offending and found

that approximately 20% of these individuals could be labeled as specialists according to the twenty-one offense categories that they examined. However, the authors also noted ways in which those offense categories could be combined into broader categories that correspond to one underlying theoretical construct. Farrington et al. (1988) stated that if “different types of offending reflect different theoretical constructs, and if the relative position of each individual on any given theoretical dimension remains reasonably stable over time, then offending would be specialized” (p. 462).

Although this study preceded the earliest MDS models in Investigative Psychology, Farrington et al. (1988) are essentially advocating for a thematic approach in considering someone a specialist. The alternative that simply looks at the legal classification of the offense committed and requires the same or very similar offense to re-appear at subsequent points in an offender’s record is too strict of a criterion for assigning someone to a specialist group. Only the most extreme cases could be considered specialists, limiting the utility of the classification system. This reflects the same argument made above regarding using a criterion that is neither too strict nor too broad to allocate someone to a group in MDS frameworks and for this reason, the thematic approach was used by Trojan and Salfati (2009b) to examine patterns in specialization in a sample of single-victim homicide offenders.

#### *3.1.5.2 Framework of Criminal Specialization*

Trojan and Salfati (2009b) proposed a basic framework of criminal specialization based on an SSA showing that offenders’ prior convictions demonstrated either a violent or instrumental theme. The variables comprising each theme in that study are replicated in Table 3.1.2 below:

**Table 3.1.2: Conviction variables comprising violent/instrumental thematic regions**

Violent	Instrumental	High Frequency (50%)
Domestic Violence	Burglary	Traffic Offenses
Assault	Theft Offenses	Drug Offenses
Harassing Offenses	Theft-Related Offenses	Disorderly Offenses
Sexual Offenses	Auto-Theft	
Crimes against Dependents	Robbery	
Arrest-Related Offenses	Armed Robbery	
Alcohol Related Offenses	Offenses arising from Legal proceedings	
Disobeying posted/known ordinance	Minor Weapons Offenses	
Vice-Sex Offenses	Fraud	

\*Adapted from Trojan and Salfati (2009b)

In the original model, the violent theme contained both indirect (e.g., harassment offenses) and direct (e.g., assault) violent offenses. The instrumental (i.e., the offense is aimed to satisfy an ulterior goal or motive of the offender) theme was comprised of variables where the offender was seeking monetary or material gain (e.g., burglary and theft) or personal gain through deception or evasion (e.g., fraud, legal offenses such as obstruction). (See Trojan and Salfati [2009b] for a more detailed account of this framework and variable discussion.)

The primary research question in the study by Trojan and Salfati (2009b) was whether offenders demonstrated specialization in their conviction histories according to this framework by dominating in one of the two thematic regions. The original paper briefly touched upon the issues surrounding determining dominance discussed here by comparing the percentage of cases that were able to be allocated to a single theme according to four levels of stringency. It was later decided that more detailed analyses and discussion were needed to reconsider how dominance is measured which the current paper aims to discuss.

## **3.2 AIM OF THE STUDY**

The two primary issues involved in determining dominance in MDS frameworks will be explored simultaneously using the model of single-victim homicide offenders' prior criminal convictions developed by Trojan and Salfati (2009b). The aim of the present study is to compare the count and proportional score methods according to four levels of stringency in terms of the percent of offenders that can be allocated to a single dominant theme. This will include an examination of how individual offenders' thematic classification may have changed as the method and level of stringency was varied to illustrate how a particular method or criterion can affect a study's results as discussed above.

## **3.3 METHODS**

### **3.3.1 Sample**

The same sample used by Trojan and Salfati (2009b) was used in the current study. This sample was used because this study is an exploration of the issues surrounding dominance and for simplicity an existing framework was appropriate. In addition, the analyses here will build upon that study by more closely examining other possible dominance methods and criteria that could have been used by the authors.

Data for this study was collected from homicide case files from the Cincinnati Police Department and were drawn from homicides occurring over a ten year period (1997 to 2006). To be included in the sample, cases had to: (1) involve only one offender and one single targeted victim, (2) be resolved by a conviction, and (3) to account for the plea bargaining process, if the offender was convicted of a charge less than murder (i.e., manslaughter, involuntary manslaughter) the original arrest charge had to have been murder or aggravated murder.

This yielded an initial sample of 137 homicides and homicide offenders. Juvenile offenders and individuals with no prior convictions were removed at this stage of analysis, leaving 122 cases suitable for the original SSA (see Trojan and Salfati [2009b] for an explanation and a complete description of the sample demographics). Further examination of these 122 individual homicide offenders' prior convictions showed that 16 offenders had only been convicted of offenses classified as high frequency under the original violent/instrumental framework. These offenses were not used in calculating dominance because they were not included in either thematic region and are more reflective of the sample as a whole and are not useful in discriminating between individuals (see Salfati [2000] for a discussion). This resulted in a final sample of 106 offenders that could be examined for dominance within the present study.

### **3.3.2 Research Tool and Protocol**

Data was collected using the Homicide Profiling Index version 3 (HPIv3) (Salfati, 2005). The HPIv3 is a coding dictionary developed specifically for use with homicide case files and contains information on more than 200 variables covering a range of items: nature of the case, offender characteristics, crime scene actions, victimology, and offender motivation. The HPIv3 contains detailed variable definitions and guidelines that coders follow to ensure reliable data collection. Early versions of the HPI have shown inter-rater reliability ratings as high as 89% (Salfati, 2005).

The protocol outlined in the HPIv3 converts all information taken from a case file into a numerical format, typically dichotomously (0=absent, 1=present). This protocol was developed to ensure that information taken from a case file is recorded in a reliable manner and to ensure confidentiality of the information being recorded. However, within the HPIv3 all criminal history

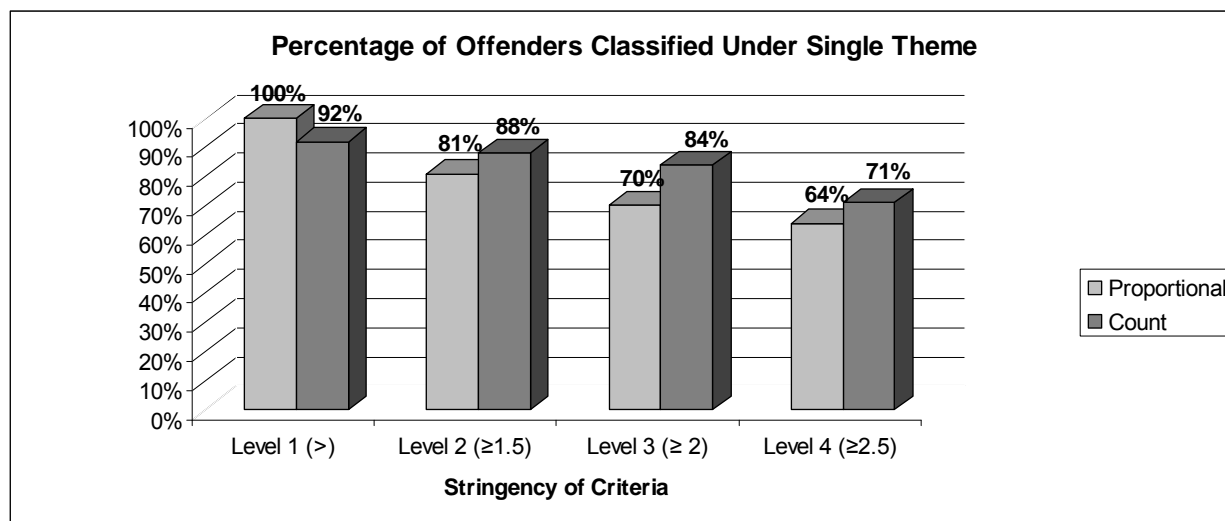
variables are coded using continuous numbers indicating the number of times an offense appears in the offender's official record.

### 3.3 RESULTS

The protocol for comparing the count versus proportional scoring methods is straightforward. Using the 19 variables comprising the two themes outlined in the framework proposed by Trojan and Salfati (2009b), data was recorded for each offender's criminal history in two ways. First, each prior conviction was recorded simply as either present or absent. On a case-by-case basis, the proportional score for each theme was calculated by dividing the number of variables present in a theme by the total number of variables in the theme to derive a proportion. For the count method, the actual number of times an offender was convicted of a given offense type was recorded as a continuous number and these numbers were compared between the two themes. To compare the percentage of cases that were classifiable across different levels of stringency, four criteria were examined that ranged from less to more stringent.

The lowest and most basic criterion (Level 1) was simply that a case had to have a higher proportional or count score compared to the other theme. The second criterion (Level 2) is the same as that used by Salfati and Bateman (2005) where a theme must have 1 ½ times the proportional or count score as the second theme. Level 3, the most stringent criterion typically appearing in the literature (e.g., Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004; Salfati, 2000), required a case to have double the proportional or count score compared to the second theme. The final and most stringent criterion, Level 4, exceeded all criteria appearing to date in the IP literature by requiring 2 ½ times the proportional or count score.

Figure 3.3.1 below shows the percentage of offenders that could be allocated to a single dominant theme using both the proportional and count methods.



**Figure 3.3.1: Distribution of classifiable cases across two methods and four levels of stringency.**

The percentages in Figure 3.3.1 above indicate the percentage of offenders who specialized in instrumental or violent offenses prior to the homicide as measured by convictions; the remaining offenders can be considered generalists (see Trojan and Salfati [2009b] for a complete discussion of measuring criminal specialization using the thematic approach). As expected, the overall percentage of offenders that could be assigned to a single theme decreased as the stringency of the criteria increased. Figure 3.3.1 demonstrates that regardless of the method or a criterion that was applied, the majority of offenders could be assigned to a single theme. In reference to Level 2 and 3, the overall percentage of classifiable cases is consistent with or exceeds those found in other MDS studies (e.g., Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999).

With the exception of Level 1, it appears that the count method is better able to account for thematic specialization in offenders' criminal histories, as more cases can be allocated to a single theme using this approach. This directly relates to the previous discussion that the

phenomenon under study may dictate the method used to determine dominance. The proportional method can only show patterns in terms of the general types of convictions because each offense is recorded only as present or absent, which may conceal true offending patterns only evident when the frequency of offending among each offense type across the offender's entire criminal background leading up to the homicide is considered.

This was a problem with five cases in the sample where the offender was initially classified as falling in the instrumental region using the proportional method, but using the count method changed status to the violent theme. Because it gives a more accurate and in-depth picture of overall conviction history, the count method consistently accounted for a higher percentage of cases across Level 2, 3, and 4.

Additionally, the count method resulted in a higher percentage of cases that did not change across all cut-off criteria at 78% compared to 64% using the proportional method. Moreover, there is a lower tolerance for determining dominance in the current study using the proportional method compared to the count method, with more cases losing their classification as instrumental or violent as the level of stringency was increased only slightly. Table 3.3.1 below shows the percent of cases that changed classification status across strategies (n = 38 proportional; n = 23 count) or the percentage of offenders who originally were classifiable as instrumental or violent but could no longer be classified under a single theme as the stringency level increased beyond Level 1.

**Table 3.3.1: Classification changes across strategies**

Case Classification Changed From:		Level 1 to 2	Level 2 to 3	Level 3 to 4
Proportional Method	(N=38)	53%	32%	16%
Count Method	(N=23)	22%	17%	61%

Table 3.3.1 shows that of the cases that changed status and became unclassifiable at some point, under the proportional method (n = 38) the majority of offenders (> 50%) lost their classification as instrumental or violent after increasing the level only slightly from Level 1 to Level 2. Conversely, of cases that changed status at some point under the count method (n = 23) 61% of cases could have been classified under a single theme up to Level 4. This further illustrates that the count method may be more appropriate for this particular study because offenders' prior convictions could consistently be allocated to one of the thematic regions unless an extremely high cut-off point was used.

To further examine how the method and criterion used can affect the results of a study, the percentage of cases allocated to the violent and instrumental regions was examined and the results are presented in Table 3.3.2:

**Table 3.3.2: Thematic classification across levels of stringency and classification method**

	Level 1		Level 2		Level 3		Level 4	
	%V	%I	%V	%I	%V	%I	%V	%I
Proportional Method	44	56	47	53	43	57	47	53
Count Method	49	51	48	52	48	52	45	55

\*%V = percent violence; %I = percent instrumental

Table 3.3.2 shows that a higher percentage of offenders were consistently allocated to the instrumental region according to their prior convictions across methods and criteria. However, the differences between the percentages for both the proportional and count methods vary widely depending on the level of stringency used to determine dominance. For example, using the lowest cut-off point (Level 1) 44% and 56% of offenders were allocated to the violence and instrumental regions, respectively, using the proportional method for a difference of 12%. Using the count method, the difference shrinks to 2% (49% violence and 51% instrumental) inflating the percentage of cases assigned to the violence region and reducing those in the instrumental region. The data presented in Figure 3.3.1 and Tables 3.3.1 and 3.3.2 shows that the percentage of cases considered dominant in a single thematic region is clearly dependent on both the method used and stringency of the cut-off point in determining dominance as was suggested at the outset of the paper though the results presented here may not be as dramatic as may be seen in other studies. Without a standard protocol for determining dominance, consistency across studies will continue to be affected and comparisons between models difficult.

### **3.4 DISCUSSION**

The aim of the current study was to compare two methods – proportional versus count scores – for determining dominance in an MDS derived thematic framework across four increasingly stringent criteria levels. Using a previously developed framework of criminal specialization in the prior convictions of homicide offenders (Trojan & Salfati, 2009b), the percentage of cases that could be allocated to a single dominant theme ranged from 100% to 64% using the proportional method and from 92% to 71% using the count method. The count method resulted in a higher percentage of classifiable cases at Level 2, 3 and 4 and resulted in a greater percentage of cases that remained consistent in their classification across all stringency levels

(78% versus 64% for the count versus proportional method). Using the count method, more than 60% of the cases that were no longer classifiable to a single theme as the stringency level increased did not change status until the most stringent criteria (i.e., 2 ½ times the score) was applied. In other words, these cases retained a classifiable status using the criterion that they must demonstrate two times the score in one theme compared to the second theme. Requiring double the score in a single theme when two themes are being compared was initially suggested by Salfati (2000) and is now commonly used in Investigative Psychology (e.g., Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004; Salfati & Haratsis, 2001) and should be seriously considered as a standard criterion in models with two thematic regions.

Once the distribution of cases between the violence and instrumental themes was examined, it became more evident that varying the method and criteria level strongly affected the percentage of cases that could be allocated to a single thematic region. While a higher percentage of cases were consistently assigned to the instrumental region, the degree to which instrumental offenses dominated across the sample varied according to both the method and stringency of the cut-off criteria with little predictability or patterning. Collectively, the results highlighted the key issues addressed throughout this paper regarding measuring dominance using a proportional or count scoring method and the stringency of the criteria that must be satisfied.

As to the first issue, studies to date have shown that both a count (e.g., Canter et al., 2003; Salfati & Canter, 1999) and proportional (e.g., Almond et al., 2006; Hakkanen, Lindlof, et al., 2004; Salfati, 2000; Salfati & Bateman, 2005; Salfati & Haratsis, 2001) method can be used but a proportional method may be the best option when thematic regions have an unequal number of variables between them. In the current study the choice of a method was further compounded by the fact that offender criminal history can be recorded using dichotomous

variables or as continuous variables, as can some crime scene variables (e.g., number of wounds). Yet even in this situation the method of coding, and following from this, the dominance method applied may ultimately be influenced and chosen by the nature of the research questions and the focus of the study and may be enhanced by studies that attempt to quantify variables in a reliable way (see Safarik and Jarvis [2005] for example). The choice of a particular method is further compounded by the fact that the thematic regions may have an unequal number of variables in them. If the difference is large the proportional method may be necessary to standardize the comparison criteria. But when a choice does exist studies need to explain the reasons for choosing one method over another to a greater degree than has been done to date.

The question remains as to whether there is a best practice when it comes to determining dominance in MDS derived thematic frameworks in the fields of offender profiling and investigative psychology. The aim of this paper was to examine the issues involved in this process within the context of a concrete example. Similar examinations should be undertaken in future studies looking at different aspects of the crime, such as behaviors at the crime scene.

The current study examined the process of determining dominance in MDS frameworks as it has appeared in IP studies to date but does not address the development of the models themselves in terms of the factors that go into selection and use of particular variables in order to establish the themes. This reintroduces the fundamental assumption underlying offender profiling referred to by Canter (1995) as the canonical – or A to C – equation. The canonical equation involves identifying Actions of the offender that can be empirically linked to Characteristics of the offender (Canter, 1995). The first step in this process is to establish reliable relationships between actions and characteristics (Canter, 1995). This has been the central focus

of IP studies cited throughout the paper that have attempted to make these links using the thematic approach. However, as Canter (1995) notes and the bulk of IP studies demonstrate, these are not by any means simple relationships. The next phase in developing MDS models according to the canonical equation is to establish weightings of the variables used in model development (see Canter [1995] for a discussion). The choice of the variables going into a particular MDS model is vital to its validity, without which determining how cases dominate becomes a mute point. In this sense, high frequency variables, once they have been consistently found across samples, would have limited practical utility because they simply describe the general features of the phenomenon under study and in the same vein, extremely low frequency variables may be of limited use in model development because they only epitomize the most extreme cases. Finally, as Salfati (2000, 2005, and in press-b) notes, models should be developed that consider the quality of the variables within the themes themselves in addition to simply measuring the quantity of variables that are present in each theme. Directly addressing these issues in future studies would enhance the reliability of variables across studies, which in turn increases the validity of the thematic models themselves and the resulting dominance statistics showing the applicability of the framework would therefore be more meaningful across studies.

### **3.5 IMPLICATIONS AND SUGGESTIONS FOR FUTURE STUDIES**

Combing the results of this study with previous Investigative Psychology studies using Multi-Dimensional Scaling Analyses, the following guidelines are tentatively offered to begin the transition to a standard protocol for determining dominance in thematic models of crime scene behaviors or offender characteristics. First, when only two regions are present, the criterion requiring two times the score in one theme over the other has been used across studies examining different phenomena, such as homicide (e.g., Salfati, 2000; Salfati & Haratsis, 2001) and serial

homicide (e.g., Salfati & Bateman, 2005), arson (e.g., Hakkanen, Puolakka, et al., 2004), and rape (Hakkanen, Lindlof, et al., 2004). This criterion is stringent enough to effectively differentiate between themes without setting the bar too high where only the most extreme cases could be classified and should be strongly considered as a standard protocol in determining dominance.

Unfortunately, because the framework in the current study had only two thematic regions it cannot significantly contribute to the discussion regarding the most appropriate approach for studies with more than two thematic regions. Still, the approach introduced by Salfati and Canter (1999) that required the dominant theme to have a score that is greater than the sum of the remaining themes has been used in studies with more than two themes using both the count (e.g., Almond et al., 2006; Canter et al., 2003) and proportional (e.g., Salfati & Park, 2007) methods. Finally, using two different methods to determine dominance in frameworks with three or more themes but where some cases that only demonstrate variable presence in two themes (e.g., Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004) should be avoided due to the key methodological issue that it raises in which not all cases in the sample are subjected to the same level of stringency. If a study does employ two different approaches in such a situation, the approaches must somehow allocate cases with equal weight.

### **3.6 CONCLUSION**

After conducting the initial analyses in response to Aim 2 of the overall study, it was important to evaluate in detail what method for determining dominance in studies of crime scene behavior and offender characteristics using SSA is most useful and appropriate for the current study and the methodological implications for using the various approaches that have appeared

in the relevant literature to date. It is hoped that this chapter demonstrated the variation in results that are possible under the different methods that have been employed in prior studies.

The method for determining dominance adopted in this chapter – a count method that requires double the score in one theme compared to the other – is used in further tests of the violent/instrumental framework in the next chapter. Chapter 4 addresses Aim 2 of the overall study more completely through the inclusion of serial homicide offenders in order to determine if the violent/instrumental framework of criminal specialization developed in Chapter 2 can be applied to both serial and single-victim homicide offenders. As the following chapter will argue, the true degree to which these offenders differ in terms of prior offending is not fully understood at present and the decision to analyze these offenders' criminal histories together is in accordance with the overall aim of the study and will allow for the identification of similarities and differences that can be used to more fully differentiate these offenders.

## **CHAPTER 4: A MULTI-DIMENSIONAL ANALYSIS OF CRIMINAL SPECIALIZATION AMONG SINGLE-VICTIM AND SERIAL HOMICIDE OFFENDERS**

Trojan, C. & Salfati, C.G. (2009c). *A multidimensional analysis of criminal specialization among single-victim and serial homicide offenders*. Manuscript submitted for publication.\*

### **4 INTRODUCTION TO CHAPTER**

Based on what is known of serial and single-victim offenders, Chapter 1 highlighted how the prior offending of single and serial offenders may differ. However, it was also discussed how these individuals have been shown to be similar. Therefore, the current chapter argues that comparing serial and single-victim offenders within the context of the framework proposed in Chapter 2 will determine whether a single thematic framework can account for patterns of prior offending in both their criminal histories, as well as how particular offenses may be able to differentiate them. After a pilot study, presented in Chapter 2, found that most single-victim offenders in the current sample could be considered specialists using a thematic approach, the analyses essentially evolved from that point to determine whether serial offenders were equally likely to be considered specialists but differed in that they would be more likely to be allocated to the instrumental theme. This would support the existing literature on serial homicide that shows serial offenders have a higher prevalence of prior offenses with an instrumental theme in their backgrounds, such as theft and burglary (e.g., Hickey, 2006). If this pattern is supported by the analyses in the following chapter, it would provide a point of differentiation between these offenders as originally proposed in Chapter 1 and provide an appropriate thematic framework that could be linked to crime scene behavior.

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\* This chapter is currently under review with the journal *Homicide Studies*.

## **4.1 LITERATURE REVIEW**

Authors have noted that despite media portrayals of serial homicide offenders as a unique breed of criminal, this may not be the case (e.g., Canter, Missen, & Hodge, 1996; Wright et al., 2008). Moreover, the true degree to which serial and single-victim homicide offenders differ in terms of the criminal offenses preceding the homicide(s) is not fully understood at present. Recent research has found that multiple homicide offenders do not specialize in murder and their overall criminal trajectories leading up to the homicide(s) are similar to one-off homicide offenders (Wright et al., 2008). Studies have repeatedly shown that a substantial proportion of serial homicide offenders have in fact committed offenses prior to their first homicide (e.g., Arndt et al., 2004; Canter et al., 1996; Godwin, 2000; Hickey, 2006) and the same is true of most single-victim homicide offenders (e.g., Delisi & Scherer, 2006; Soothill et al., 2002; Wolfgang, 1958).

Direct comparisons of these offenders in terms of the offenses preceding the actual homicide(s) would provide a richer understanding of the true differences in their overall criminality and criminal history could be a useful tool to investigators if such patterns in prior offending can eventually be linked to crime scene behavior. However, it is difficult to determine specifically how their prior criminal trajectories differ because few studies have directly compared these offenders on this factor and any similarities or differences in prior offending have to be inferred from separate studies.

### **4.1.1 Offender Criminal History: Single-Victim Homicide Offenders**

Studies have consistently shown that a significant proportion of homicide offenders are not first time offenders when the homicide is committed, a finding that has held across time and international samples (e.g., Broidy et al., 2006; Delisi & Scherer, 2006; Dobash et al., 2007;

Soothill et al., 2002; Wolfgang, 1958). In the United Kingdom, Soothill et al. (2002) found that 68% of homicide offenders in their sample had a recorded criminal history prior to the homicide, as did 87% of the sample examined by Dobash et al. (2007). In the U.S., Delisi and Scherer (2006) found that 60% of their sample had a recorded criminal history. In the historical study of homicide by Wolfgang (1958), 66% of offenders had a prior record for crimes against person, 48% of which were for aggravated assault, and 34% had a history of other types of offenses, with only 9.3% for property offenses. Soothill et al. (2002) found that among offenders with a criminal record 72% had convictions for theft and handling stolen goods, 61% for burglary, 57% for a violent offense, 20% for robbery, and 5% for sex offenses.

These studies demonstrate that usually an individual who commits a homicide will appear in official police arrest or correction records prior to the homicide. What has not been extensively explored is whether these specific offenders demonstrate offending specialization – committing similar crime types – or offending versatility – committing a variety of offenses with no discernable patterning. In fact, whether offending specialization exists in the general criminal population is a point of contention among researchers.

#### Criminal Specialization or Offending Versatility

Studies of general offender populations contend that most offenders demonstrate a high degree of versatility over their offending careers (e.g., Britt, 1994; Parkinson et al., 2004; Simon, 1997). For example, in a meta-analysis of thirty-three studies of specialization, only four demonstrated evidence of specialization (Klein, 1984). Most studies of offending specialization (e.g., Britt, 1994; Francis et al., 2004; McGloin et al., 2009) appearing in the criminal justice literature typically define specialization as committing the same general types of offenses over time, at consecutive points in time, or during short-term periods of time. Conversely, Farrington

et al. (1988) identified 19% of their sample as specialists, other studies have shown that specialization may increase with age (e.g., Piquero, Farrington, & Blumstein, 2003; Francis et al., 2004) and may exist in the short-term (e.g., Sullivan et al., 2006). Moreover, specialization may be offense specific. Blumstein et al. (1988) found that offenses such as drug and auto-theft were highly specialized and, in general, property offenses showed greater specialization than violent offenses. However, several factors may influence the lower degree of specialization typically found in specialization studies of general offender populations.

First, studies of specialization typically do not examine the degree of specialization present among offenders under arrest for a specific offense, such as homicide. Secondly, the high degree of versatility found by most studies may be a product of using the legal classifications of offenses or legal groupings of offenses (e.g., person/property) to determine specialization. This produces a restrictive perspective of specialization and may overlook similarities between groups of different legally defined individual offenses that share a common underlying psychological or theoretical construct – a theme (Salfati & Taylor, 2006). Although not adopting a thematic approach, Farrington et al. (1988) noted how the different offense categories examined in their study of specialization could have been examined by expanding them into broader groupings each of which would correspond to one underlying theoretical construct. Using groups of offenses that have different legal definitions but are thematically similar would identify specialists if most of the crimes in their background fall in a single theoretical grouping; generalists would be identified by offending equally across thematic groups. The alternative approach to measuring specialization using the legal label for the offense (i.e., Uniform Crime Reports (UCR) definition or a given city/state legal code) would classify someone as a specialist if they are arrested/convicted of the same legally defined offense at consecutive points in time.

To understand how these two approaches differ consider an offender with prior arrests for sexual assault, burglary, and fraud. Traditional classifications for these offenses according to their legal definitions would identify this offender as a generalist, but these offenses are *thematically* similar in that the offender stands to gain instrumentally from the offense (see Salfati [2000] for a more detailed discussion). In this manner, the offender can be considered a specialist in offenses that have an instrumental theme where the offenses are all broadly aimed at satisfying some type of ulterior goal other than harm to the victim (Feshbach, 1964). While the thematic approach has been increasingly applied to better conceptualize crime scene behaviors and offender characteristics in homicide and serial homicide, (e.g., Bateman & Salfati, 2007; Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003), it has only recently been used to directly examine the degree of specialization in single-victim homicide offenders' criminal histories.

Trojan and Salfati (2009b) examined the criminal convictions preceding the homicide among a sample of single-victim homicide offenders and found that by considering convictions in terms of their co-occurrences, offenses could be grouped into two broad thematic regions of violent versus instrumental offenses. Instrumental offenses included property offenses such as burglary, theft, and fraud and also included legal offenses (e.g., obstruction of justice) where the benefit is intangible – aimed at avoiding something negative – instead of material. The violent group of offenses included those that involved direct violence against a victim (e.g., assault, domestic violence), direct violence against property (e.g., criminal damaging), indirectly violent offenses (e.g., harassment), and more antisocial offenses (e.g., alcohol-related offenses). Moreover, the majority of offenders could be allocated to only one dominant theme and, thereby, considered specialists in thematically similar offenses.

The study by Trojan and Salfati (2009b) began the process of identifying patterns in the prior offending of single homicide offenders and looked at specialization in a new way. However, this study only examined single-victim offenders and whether serial offenders demonstrate the same patterns in their criminal backgrounds and specialize to the same degree as single offenders is less clear. What is apparent, however, is that as with single-victim homicide offenders, many serial homicide offenders also have a criminal record preceding their homicides.

#### **4.1.2 Offender Criminal History: Serial Homicide Offenders**

Several studies have found that more than 50% of serial homicide offenders have committed offenses prior to the first homicide (e.g., Arndt et al., 2004; Canter et al., 1996). Similarly, 63% of the sample provided by Hickey (2006) had been incarcerated in prison or a psychiatric institution and 68% showed a combination of criminal and antisocial behaviors in their backgrounds. In a closer examination of the breakdown of offense types, Hickey (2006) found 45% of the offenders in his sample had committed prior property crimes, 38% had committed prior sex offenses, and 8% committed assault. Godwin (2000), however, found that more than 60% of his sample had prior convictions for burglary, theft, or robbery, with only about one-quarter committing prior violent offenses. While the proportional variation of prior offenses in these studies may simply be a product of the samples used, there seems to be a greater likelihood of property or theft-related offenses, opposed to violent offenses, appearing in the backgrounds of serial homicide offenders. However, these studies only reported the frequency of prior offenses or groups of offenses (e.g., 'property' crimes) making it difficult to identify specialization in thematically similar offenses.

Only one study could be located that directly compared single victim and multiple victim homicide offenders in terms of specialization. In this study, Wright et al. (2008) found that

multiple homicide offenders “maintained a criminal career that was indistinguishable from the background of an individual who had murdered only one victim” (p. 392). However, the authors measured specialization across ten prior conviction variables using the diversity of offending index, which is taken to indicate the probability that two offenses drawn randomly from across an offender’s overall offending career will belong to different offense categories. In addition to including offenders whose only offense was the homicide itself, the study mainly sought to determine if multiple homicide offenders specialized in murder and did not focus on the actual rate of co-occurrence of *all* prior criminal offenses across a sample of offenders. Therefore, the study by Wright et al. (2008) differs from the current study both in its intent and subject of comparison in that Wright et al. compared one-off homicide offenders to multiple homicide offenders, including double homicides at a single event. However, the findings of Wright et al. (2008) are relevant to the current study because it is one of the only studies to examine offending specialization as it exists among homicide offenders in general.

It is possible that single-victim and serial offenders in fact display similar *degrees* of specialization or versatility in offending prior to the homicide(s), but it is equally possible that these offenders differ in terms of the *type* of offenses indicating specialization. Serial and single-victim offenders may demonstrate similar overall patterns in their criminal backgrounds, in terms of the offenses likely to co-occur in their criminal histories, and could be conceptualized in terms of a single framework. The primary difference between them may be where each type of offender’s particular emphasis within that framework lies. As with the study of specialization of single-victim homicide offenders by Trojan and Salfati (2009b), it is possible that combining a sample of serial offenders and single homicide offenders would generate the same co-occurrence of violent versus instrumental offenses. However, given the differences in the base rates of

offenses provided by prior studies (e.g., Hickey, 2006), serial offenders may be more likely to specialize in instrumental offenses and single-victim offenders may be more likely to specialize in violent offenses. The current study aims to explore these issues and begin the process of identifying general trends in the criminal backgrounds of both single-victim and serial homicide offenders and how such preliminary patterns may be used to differentiate the backgrounds of these offenders for the purposes of investigation.

## **4.2 AIMS**

The current study explores criminal history patterns through a direct comparison of single-victim and serial offenders. The first aim is to determine if a single thematic framework is applicable to both single-victim and serial homicide offenders' criminal backgrounds, specifically the violent/instrumental framework proposed by Trojan and Salfati (2009b) in relation to single-victim homicide. The second aim of the study was to determine if single and serial homicide offenders specialize in the offenses preceding their homicide(s) and if they differ in terms of the type or degree of offense specialization demonstrated.

## **4.3 METHODS**

### **4.3.1 Data Source and Selection Criteria: Single-Victim Sample**

Single-victim homicide data was collected from homicide case files drawn from the Cincinnati Police Department. Cases were drawn from homicides occurring over a ten year period, from 1997 to 2006, and were selected according to several criteria.

Only cases involving a single offender and single targeted victim were selected. This requirement excluded offenders who had previous homicide *convictions*, because the purpose of the present study was to develop a sample of individuals who had committed a single homicide

that could be compared to serial homicide offenders. The second criterion for inclusion in the sample required the case to have been resolved by a conviction. Finally, cases in which offenders were convicted of manslaughter, involuntary manslaughter or reckless homicide unless the offender had originally been charged and arrested for murder or aggravated murder were eliminated. This requirement was included to account for the process of plea bargaining in which cases that clearly involved willful intent to murder were pled down to a lesser charge. These criteria resulted in a sample of 137 single-victim homicide cases. (See Chapter 2 for a comparison of the current study sample to national homicide statistics.)

#### **4.3.2 Data Source and Selection Criteria: Serial Homicide Sample**

Serial homicide cases were drawn from closed, fully adjudicated state and local cases that were contributed from law enforcement agencies from around the country for the purpose of research. All identifiers, including names of victims, suspects, offenders, officers, departments and correctional agencies, are removed. Only aggregate data are reported on.

In order to control for the effects of group dynamics on behavior and to develop a serial homicide sample comparable to the single-victim sample, only serial homicide cases involving a lone perpetrator were selected. Serial homicide was defined as a series of homicides in which multiple victims (minimum of three, at least two deceased) were victimized in discrete, separate incidents. To exclude contract killers from the sample, the homicides had to have occurred without the direction or consent of any political or criminal organization. Series with only two homicides and other surviving victims were included in the sample. These criteria resulted in a sample of seventeen serial homicide offenders. (See Chapter 1 for a more detailed discussion of this sample and a comparison to different samples used in other studies of serial homicide.)

#### 4.3.2.1 Single-Victim Homicide Sample Description

The single-victim homicide database consisted of 137 offenders and 137 victims. Of the victims, 76% were male ( $n = 104$ ) and 24% were female ( $n = 33$ ), 20% were White ( $n = 27$ ), 80% were Black ( $n = 109$ ), and one victim was Hispanic. The average victim age was 30 ( $median = 26$ ). The youngest victim was less than one year old and the eldest victim was 85.

Of the offenders in the single-victim sample, 87% ( $n = 119$ ) were male and 13% were female ( $n = 18$ ), 13% were White ( $n = 18$ ), 86% were Black ( $n = 118$ ) and one offender was Hispanic. The average offender age was slightly lower than the victims at 29 ( $median = 26$ ). The youngest offender was 15 and the eldest 65.

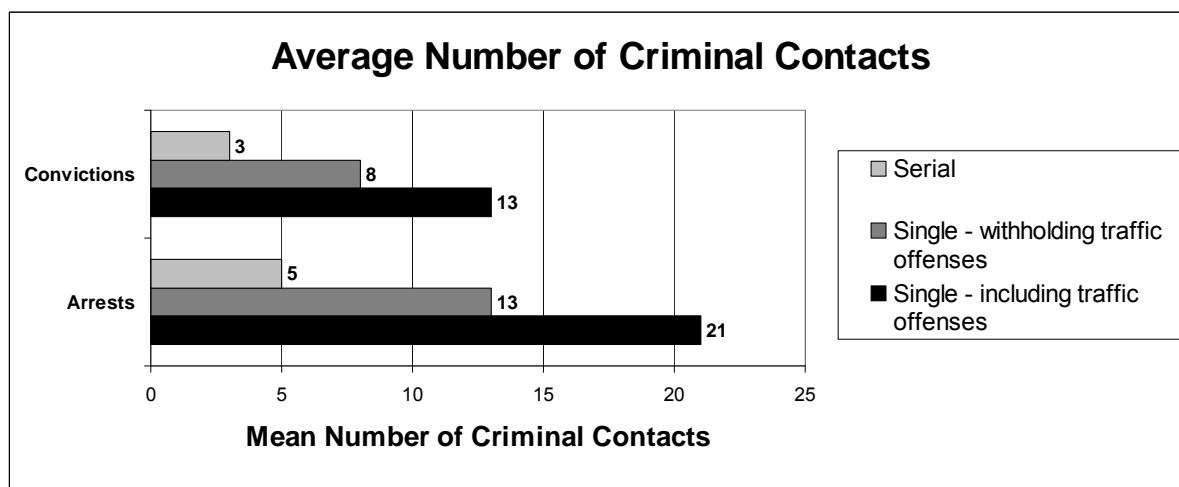
#### 4.3.2.2 Serial Homicide Sample Description

The serial homicide database consisted of 17 offenders responsible for a total of 97 victims. The majority of the serial homicide victims (79%) were female. Most victims were White (54%), 37% were Black, 4% were Hispanic, and 2% were Asian (missing = 3%). The average victim age was 25 ( $median = 25$ ). The victims ranged in age from less than one year old to 73 years old. Recalling that live victims were included in a series, 84 victims were deceased and thirteen survived the attack.

Of the serial homicide offenders, 94% were male ( $n = 16$ ) and there was only one female offender. There was an equal number of White and Black offenders (47%,  $n = 8$ ) with one offender of Indian descent. The average age of the offenders at the time of the first homicide in the series was 28 ( $median = 27$ ). The offenders ranged in age from 19 to 56 at the time of the first murder.

#### 4.3.2.3 Criminal History Frequency Distribution

The majority of both single-victim and serial homicide offenders had a recorded criminal history prior to their homicide(s). Of the 17 serial homicide offenders, 69% ( $n = 11$ ) of serial offenders had at least one arrest and 53% ( $n = 9$ ) had at least one conviction prior to their first homicide. Among the 137 single-victim offenders, the overwhelming majority of offenders – 96% ( $n = 132$ ) – had a criminal record prior to the homicide. The distribution of arrests and convictions for both samples is presented in Figure 4.3.1.



**Figure 4.3.1: Criminal history distribution across serial and single-victim homicide samples showing the mean number of criminal arrests and convictions prior to the homicide(s).**

Figure 4.3.1 shows the average number of arrests and convictions among serial and single offenders. Single-victim offenders had an average of 21 prior arrests (*median* = 17; *range* = 0 to 84) and 13 prior convictions (*median* = 10; *range* = 0 to 54). Even withholding traffic offenses, these offenders maintained an average of 13 prior arrests (*median* = 10; *range* = 0 to 57) and 8 prior convictions (*median* = 5; *range* = 0 to 41). In contrast, serial offenders overall had fewer

prior arrests and convictions with an average of 5 prior arrests (*median* = 3; *range* = 0 to 25) and 3 convictions (*median* = 1; *range* = 0 to 19).

### 4.3.3 Research Tool and Procedure

Data was collected using the Homicide Profiling Index version 3 (HPIv3) and version 4 (HPIv4) (Salfati, 2005)<sup>1</sup>. The HPIv4 is a coding dictionary developed specifically for use with homicide case files and contains information on more than 200 variables covering a range of items: nature of the case, offender characteristics, crime scene actions, victimology, and offender motivation. The HPIv4 contains detailed variable definitions and guidelines that coders follow to ensure reliable data collection. Early versions of the HPI have shown inter-rater reliability ratings as high as 89% (Salfati, 2005).

The protocol outlined in the HPIv4 converts all information taken from a case file into a numerical format, either dichotomous (0 = absent, 1 = present) or by assigning a number to each category if there are multiple categories in a specific variable. This protocol was developed explicitly for the purpose of ensuring that all information taken from a case file is recorded in a reliable manner and in such a way as to ensure full confidentiality of the information being recorded. Personal or identifying information was never recorded in any manner.

### 4.3.4 The Variables

The current study compares single-victim and serial homicide offenders across twenty-two offense variables. All variables indicate a conviction for that offense. The variable labels and brief description for the variables are included in Table 4.3.1:

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<sup>1</sup> Two versions of the HPI were used because data was collected at separate points in time and the most up-to-date version of the HPI was used. The HPIv3 was used to collect single-victim data and the HPIv4 was used to collect serial homicide data. The changes between HPIv3 and HPIv4 were not substantial.

**Table 4.3.1: Criminal conviction variable labels and descriptions**

<i>Label</i>	<i>Description</i>
Alcohol	Minor alcohol-related offenses such as open flask (excluding drunk and disorderly conduct and DUI (coded elsewhere))
Armed Robbery	Robbery involving use of a weapon
Arrest	Offenses related to the arrest process, such as evasion, fleeing, or resisting
Assault	Assault of a person, including use of a weapon
Burglary	Theft from a residence or business
Damage	Damage or destruction of property, including vandalism
Dependent	Crimes committed against a dependent child or animal, including animal cruelty and child neglect
Disobey	Disobeying a posted ordinance, such as city/local ordinance violation
Disorder	Offense such as drunk and disorderly conduct or disturbing the peace
Domestic Violence	Violence against a domestic partner or cohabiting individual
Drug	Drug-related offenses including possession, sale, trafficking, etc.
Fraud	Offense of fraud/deception, such as forgery or passing bad checks
Harassment	Harassment of an individual not involving physical contact, such as menacing, threatening, or intimidation
Legal	Offenses arising out of the legal/court process (e.g., obstruction or perjury)
Robbery	Theft from a person without the use of a weapon
Sex	Sexual crimes, such as rape; excludes prostitution or soliciting a prostitute
Theft	Larceny or any theft offense other than auto theft, burglary, or robbery
Theft-auto	Theft of an automobile
Theft-related	Any theft-related offense not involving physically seizing the property of another, such as possession of criminal tools, receiving stolen property, etc.
Traffic	Any offense violating a traffic law relating to the use of a vehicle
Vicesex	Minor sexual offenses related to the sex trade, such as soliciting a prostitute
Weapon	Violation of any weapons law (i.e., carrying a concealed weapon); excludes crimes where the weapon is used against a victim (e.g., armed robbery)

The majority of these variables are contained in the HPIv4, which specifies nineteen prior arrest and conviction variables. Not all variables included in the HPIv4 were included in the current

analyses because no offender in the current study was convicted for that offense. When data was collected there were offense charges that could not be incorporated into one of the existing conviction variables as outlined in the HPIv4. Rather than exclude these criminal charges from analyses, seven new variables were added to account for these offenses: vice-sex offenses, harassment offenses, theft-related offenses, arrest-related offenses, legal-related offenses, crimes against dependents, and alcohol-related offenses. These 22 variables are the same as those examined by Trojan and Salfati (2009b).

#### **4.3.5 Analyses**

##### *4.3.5.1 Smallest Space Analysis*

The current study uses Smallest Space Analysis (SSA) to identify patterns in the criminal convictions of single and serial homicide offenders. SSA is a type of Multi-Dimensional Scaling Analysis that allows for the examination of each variable in the analysis in relation to every other variable. In other words, SSA examines the co-occurrences of variables across cases in the sample and produces a visual output of the relationships between variables (Canter & Heritage, 1990). This geometric plot is a visual representation of the rank orders of the association coefficients in the underlying matrix (Salfati, 2000) and how well the visual plot represents the underlying association matrix is determined by the coefficient of alienation. Generally, coefficients below 0.2 are considered a good 'fit' (Salfati & Bateman, 2005). The SSA plot is interpreted by examining the spatial distances between variables that are represented as points in the geometric space. Variables that are more strongly related and occur closer to one another in the plot are likely to co-occur in any given case and those that occur farther apart from one another are unlikely to co-occur in a case; those variables co-occurring in the same region of the plot share a common underlying theme (Canter & Heritage, 1990).

#### 4.3.5.2 Final Sample Suitable for Analyses

In order to conduct the SSA, it was necessary to further refine the samples of single-victim and serial homicide offenders. First, because the current study examines criminal convictions, offenders with no prior convictions were excluded from both samples. Additionally, it was decided that juvenile offenders would be excluded from the single-victim sample because the majority of their offenses were for status crimes (e.g., truancy, running away, etc.) making them unsuitable for comparison to adult offenders whose juvenile records were unavailable. Future studies that include juvenile homicide offenders could include an examination of these offenses provided adult offenders' juvenile records are available. There were no juvenile offenders in the serial homicide sample.

With these additional selection criteria, the final samples suitable for analyses consisted of 122 single-victim offenders, which is the same sample used by Trojan and Salfati (2009b), and nine serial homicide offenders. Because the current study examines criminal convictions, only 9 serial offenders could be included due to the fact that 47% of the initial sample had no prior convictions. Given the limited number of studies that have compared single and serial offenders directly in terms of their criminal history and offending specialization, the current study is largely exploratory in its overall aim. The purpose of the current study was to identify general trends in prior offending according to *thematic* patterns that may or may not differentiate these offenders. Therefore, the current study not only seeks to develop a thematic framework of criminal specialization among single-victim and serial homicide offenders, but also to demonstrate that the thematic approach is an appropriate methodology for examining specialization. The patterns identified here should be considered preliminary pending validation and replication on a larger sample of serial homicide offenders.

#### 4.3.6 Background: The Violent/Instrumental Criminal History Framework

As with the current study, Trojan and Salfati (2009b) used SSA to identify patterns in the prior offending of single-victim offenders. The authors proposed that homicide offenders' criminal histories could be conceptualized according to a framework of violent versus instrumental offenses. The original framework has been re-created in Table 4.3.2, showing the variables comprising the two thematic regions identified.

**Table 4.3.2: Instrumental/violent framework by Trojan & Salfati (2009b)**

<i>Violent Variables</i>	<i>Instrumental Variables</i>
Assault	Burglary
Harassment	Theft
Sex	Fraud
Domestic Violence	Theft-Related
Vice-Sex	Legal
Dependent	Weapon
Disobey	Auto-Theft
Alcohol	Robbery
Damage	Armed Robbery
Arrest	

\*Adapted from Trojan and Salfati (2009b)

As seen in Table 4.3.2, nine instrumental variables co-occurred with one another across cases in the sample and ten violent variables co-occurred with one another in a separate thematic region<sup>2</sup>. (See Trojan and Salfati [2009b] for a complete discussion of the original framework.)

Once these thematic regions were identified, Trojan and Salfati (2009b) examined whether offenders specialized by determining if the majority of their prior convictions fell into only one dominant thematic group. Using a conservative cut-off criterion requiring at least twice the number of convictions in one theme compared to the other (Salfati, 2000; Trojan & Salfati, 2009a), 84% of offenders could be allocated to only theme and considered specialists.

<sup>2</sup> Three additional variables (traffic, drug, disorder) are not listed in Table 4.3.2 because they were high frequency variables, occurring in at least 50% of the cases examined by Trojan and Salfati (2009b) and, therefore, were not useful in differentiating between offenders in terms of the framework.

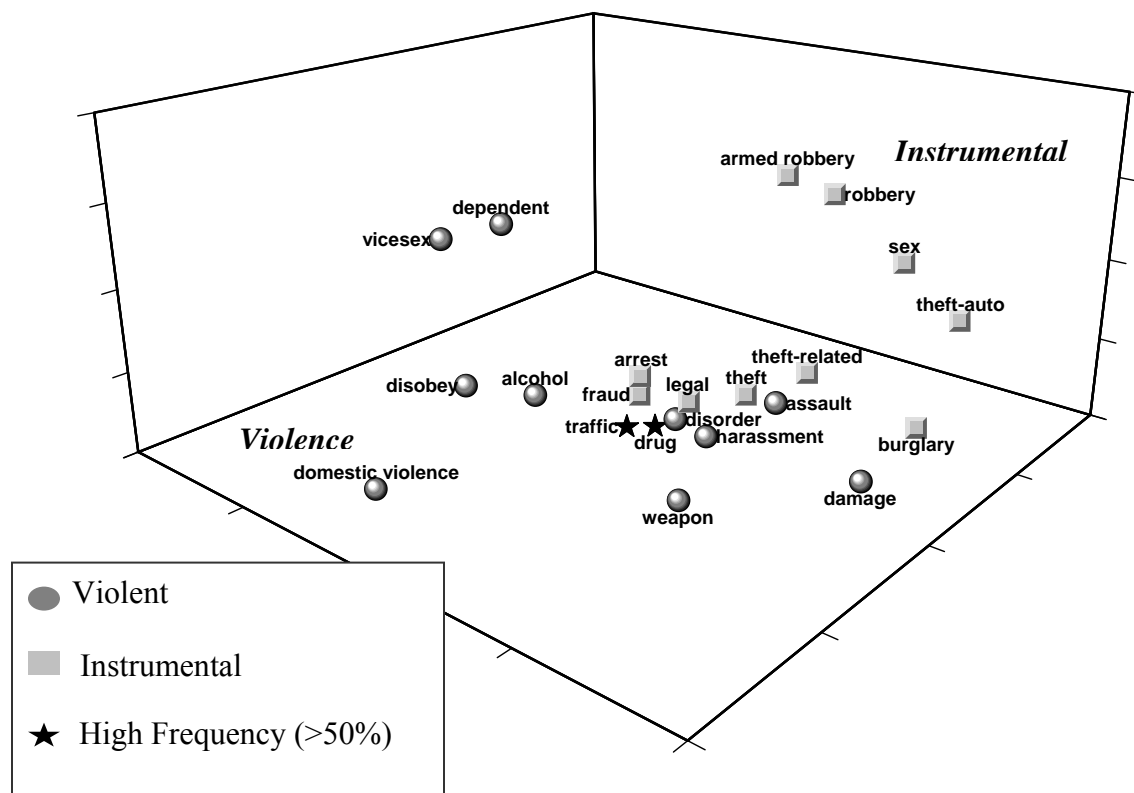
The current study aims to directly compare serial homicide to single-victim homicide offenders' prior criminal convictions in terms of this framework. If the violent/instrumental framework proposed by Trojan and Salfati (2009b) were to substantially change when serial homicide offenders are included in the analyses, it would suggest that single and serial offenders have completely different patterns in their criminal histories. If, however, the inclusion of serial homicide offenders does not change the framework or the co-occurrences of the variables, or changes the framework only slightly, it would suggest that a single framework could be applied to single and serial homicide offenders' criminal histories. This is an important first step in more fully understanding how the criminal histories of these offenders may be similar or different.

## **4.4 RESULTS**

### **4.4.1 Aim 1: SSA of Criminal Convictions**

The first aim of the current study is to determine if the violent/instrumental framework of criminal convictions originally proposed by Trojan and Salfati (2009b) could be applied to both single-victim and serial homicide offenders. In order to answer this aim, an SSA was run on the combined sample of serial and single-victim offenders (N = 131).

Figure 4.4.1 shows the resulting SSA of the twenty-two criminal history variables across the combined offender samples.



**Figure 4.4.1: Smallest Space Analysis of serial (N = 9) and single (N = 122) homicide offenders' prior convictions with violent and instrumental thematic division. Coefficient of alienation = 0.12504.**

Again, each of the points in Figure 4.4.1 represents one of the criminal conviction variables outlined in Table 4.3.1, those variables occurring closer to another are more likely to co-occur in a given case, and those occurring in the same region of the plot share a common underlying theme. In accordance with the first aim of this study, the SSA plot demonstrates a clear division between two thematic groups of offenses, violent and instrumental. The partitioning of the geometric space into two thematic regions is seen by the clustering of instrumental variables on the top right side of the plot in Figure 4.4.1. These offenses are aimed at the attainment of some sort of ulterior benefit or need of the offender – tangible material gain in the case of offenses like robbery, theft, and theft auto – or an intangible benefit aimed at the avoidance of something

negative as in the case of legal offenses. Violent offenses co-occur towards the bottom of the plot and continue up the left side of the plot in Figure 4.4.1. These offenses include directly violent offenses in the case of domestic violence, direct violence against property in the case of damage, and more indirectly violent offenses, such as harassment. These thematic groupings of offenses are the same as those found among only single-victim offenders by Trojan and Salfati (2009b). This demonstrates that the violent/instrumental framework can be applied to the criminal histories of both serial and single-victim offenders, with only minor changes to the variables comprising the two thematic regions.

Comparing the variables in Table 4.3.2 to the SSA configuration in Figure 4.4.1 shows that the variables 'sex', 'arrest', and 'weapon' switched thematic regions after the inclusion of even a small group of serial homicide offenders. Remember that the SSA plot in Figure 4.4.1 is a representation of the underlying association matrix that compares all variables to one another simultaneously and the more strongly associated variables are, the closer they will occur to one another in the plot. There are several reasons, methodological and theoretical, why variables may change locations in an SSA when there is any change to the model or nature of the sample. Low frequency variables that only occur among a few offenders in the sample are more easily influenced by changes to the model because any new association could potentially pull them out of place. In addition, changing the nature of the sample, such as including serial offenders as in the current study, will essentially bring in new associations that may cause variables to be pulled out of their original location and this may point to key theoretical issues in terms of how these offenses will co-occur differently in the respective backgrounds of these offenders. Taking these factors into consideration, the three variables that changed thematic regions after the inclusion of

serial homicide offenders are considered individually below and the potential reasons for these new patterns are offered pending further study.

When only single offenders were examined by Trojan and Salfati (2009b), sexual offenses were located within the violent thematic region. This was a particularly low frequency variable among the single-victim offenders and only 6 out of the 122 single victim offenders had prior sexual offense convictions. When serial and single offenders were directly compared sexual offenses moved to the opposite side of the plot, which indicated that this variable was now more strongly associated with instrumental offenses. Of the nine serial homicide offenders, four had prior convictions for sexual offenses showing it to be more prevalent among the serial offenders compared to the single offenders – nearly doubling the number of prior convictions for sexual offenses across the total sample. By changing the nature of the sample to include the serial homicide offenders in this manner, a new series of co-occurrences was introduced that did not previously exist and resulted in the movement of the variable sexual to a new thematic region. In the original study by Trojan and Salfati (2009b) examining only single-victim offenders, the highest association with the variable sexual was the variable dependent, a violent variable, and of the three next highest associations, two were with other violent variables – assault and harassment. These associations explain why sexual offenses were located in the violent region in the original framework. However, in the current study, a high association remained with the variable assault, but high associations were now present between the variable sexual and five instrumental variables – suggesting that these new associations pulled the variable into the instrumental region. This could point to key theoretical differences in terms of how sexual offenses will co-occur in the backgrounds of single and serial offenders.

Multiple authors have cited a sexual element to some serial homicide cases or have suggested that it is a fundamental component (e.g., Holmes & Holmes, 2002; Ressler et al., 1995; Schlesinger, 2004) and sexual offenses preceding the homicide series would not be unexpected if some serial homicides are indeed sexual in nature. While at this point it is premature to declare with any certainty why sexual offenses show a different pattern of co-occurrence for single-victim offenders than when serial offenders were included, the variable's location in Figure 4.4.1 with other instrumental offenses is not problematic. Salfati (2000) found an association between prior convictions for sexual, theft, and burglary offenses; sexual and theft offenses are thematically similar and in both situations "the offender stands to gain instrumentally from the crime" (p. 281). In other words, as with crimes aimed at the acquisition of material goods such as theft, the offender is seeking to gain a desired outcome from the offense; sexual offenses are, in essence, stealing sex. While labeling sexual offenses as instrumental may seem counterintuitive because they are considered a violent offense against a person by most legal classification systems (FBI, 2007), in models derived using SSA it is not the meaning or classification of offenses when they are viewed in isolation to other offenses that is important, but how the offense is linked to co-occurring variables through an underlying psychological construct or theme. The finding that is central in the current analyses is that sexual offenses are likely to co-occur with other offenses in a different manner when only single-victim offenders are examined than when serial and single offenders are examined together. This may suggest that sexual offenses mean something different for serial and single offenders and this may indicate an important point of difference in terms of what offenses are likely to co-occur with them in the respective backgrounds of these offenders, which should be explored in future studies using expanded samples.

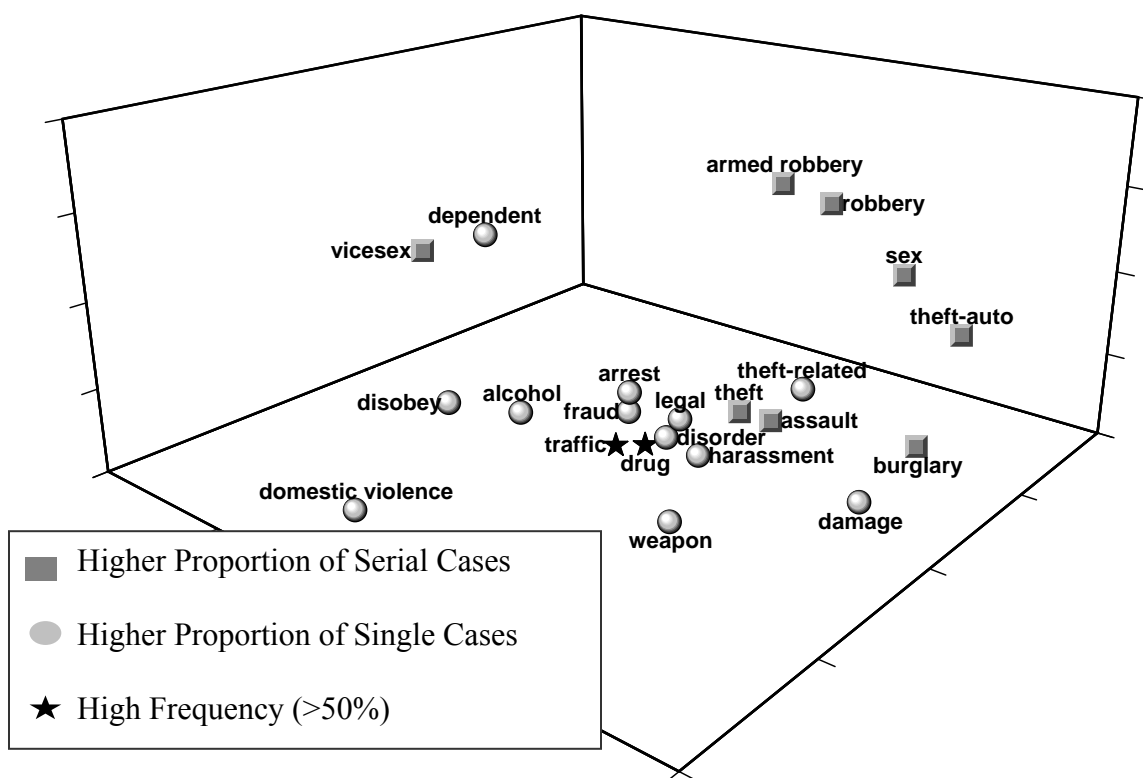
Two other variables were also impacted by the addition of serial homicide offenders. The variable ‘arrest’, referring to any offense that arises out of the process of arrest such as resisting or fleeing, co-occurred with violent offense variables in the original framework provided by Trojan and Salfati (2009b) as seen in Table 4.3.2. What is not seen in Table 4.3.2 is that in the original SSA the variable ‘arrest’ occurred on the border between the two thematic regions. When serial and single offenders were directly compared in the current study, the variable arrest now occurs very close to several instrumental variables, specifically fraud and legal offenses, as seen in Figure 4.4.1, but still remains close to the border between thematic regions. In the original framework looking at only single-victim offenders, the variable arrest was highly associated with the three high frequency variables in that model – disorderly, traffic, and drug offenses (Trojan & Salfati, 2009b). However, when serial and single offenders were examined together in the current study, the high associations with the same three variables remained, but now high associations were also present with the offense variables theft and legal, both instrumental variables. These new co-occurrences help to explain why the variable shifted thematic locations but remained close to the border none the less. The location of the variable ‘arrest’ on the border between thematic regions may be due to the fact that this offense has an instrumental element in the same way as legal offenses (e.g., obstruction) where the instrumental element involves avoiding negative stimuli such as arrest or punishment rather than direct instrumental gain through the acquisition of material goods such as in theft. This example demonstrates how considering offenses within the context of how it co-occurs with other variables in terms of thematic links can provide a better understanding of the overall patterns in offenders’ criminal histories.

Finally, the variable 'weapon' co-occurred with instrumental offenses when only single-victim offenders were examined (Trojan & Salfati, 2009b). The authors explained this by saying that it may indicate preparedness among single-victim offenders to resort to violence during the commission of an instrumental crime such as burglary, which had a high association with it; it also had high associations with the offense variables legal and fraud. However, when serial and single-victim offenders were examined together, as seen in Figure 4.4.1, this variable occurred firmly within the violent region. A closer examination of the underlying association matrix revealed that the variable weapon has nearly equal associations with several instrumental and violent variables essentially meaning that its location in the plot is being influenced by a number of variables. This may demonstrate that this variable is relatively unstable in terms of its co-occurrences and may fluctuate between thematic regions due to nearly equal co-occurrences with variables in both regions. Future studies should consider this possibility when including weapon offenses into examinations of offender criminal history as it may be less useful in terms of thematic differentiation.

The results, thus far, although limited again by the small sample of serial offenders, suggest some differences between single-victim and serial offenders in terms of how their criminal histories compare within the violent/instrumental framework. To further explore these potential differences, the SSA plot was subjected to an external variable analysis (Salfati & Taylor, 2006) to see if there is an association between the variables and the offender type – serial versus single. This process allows one to identify whether a particular variable was proportionally more prevalent among single-victim or serial offenders. To accomplish this, for each of the offense variables, the sum of the number of times each single-victim offender was convicted of that particular offense was divided by the number of single-victim offenders to

derive a proportional score. This process was then repeated for serial offenders for each variable. This resulted in two proportional scores for each variable that could then be compared to determine if a given variable had a proportionally greater amount of single or serial offenders convicted of that offense and the results are seen in Figure 4.4.2.

Figure 4.4.2 is the same SSA configuration as in Figure 4.4.1, but now shows the results of the external variable analysis and indicates which offense was proportionally more likely to be present for serial versus single-victim offenders.



**Figure 4.4.2: SSA external variable analysis: SSA depicting distribution of serial and single homicide cases with homicide type as an external variable.**

Figure 4.4.2 shows that with the exception of theft-related offenses, a greater proportion of the serial offenders had prior convictions for the instrumental offenses compared to single offenders.

Conversely, a higher proportion of single offenders is seen for most of the violent conviction variables compared to serial offenders, with the exception of vice-sex offenses and assault.

The fact that serial offenders were proportionally more likely to be convicted of all of the instrumental offenses, save one, may be due to an overall exploitative nature in serial homicide in which both people and property are treated as a means to satisfy an ulterior motive or need in the offender, which is being reflected here in their criminal history. In this manner, it is not surprising that serial offenders were proportionally more likely to be convicted of vice-sex offenses that involve exploitation of prostitutes. Moreover, prostitutes are sometimes targeted as victims of serial homicide offenders (Salfati, James, & Ferguson, 2008) so the presence of offenses involving the patronization of prostitutes in serial offenders' criminal histories to a higher degree than single offenders is not surprising. It is surprising, however, that a greater proportion of serial offenders was found for assault offenses. Using a sample of more than 200 serial offenders, Hickey (2006) found that only 8% had prior convictions for assault. Conversely, nearly half of the sample of single offenders provided by Wolfgang (1958) had prior arrests for aggravated assault and Dobash et al. (2007) found that 54% of early onset homicide offenders and 40% of late onset offenders were convicted of at least minor assault. In the current study, three out of the four serial offenders convicted of sexual offenses were also convicted of assault offenses. This helps explain why the variable 'assault' was located close to the border between thematic regions (refer to Figure 4.4.1), and may indicate a sub-group of serial offenders whose criminal histories, violent or instrumental, involve the direct targeting of people as victims.

Similarly, a higher proportion of single offenders for most of the violent conviction variables is reflective of an overall impulsive or antisocial criminality pattern, which fits with the typical picture of single-victim homicide. Studies have shown that homicide typically occurs

between individuals known to one another (e.g., Decker, 1993; Wolfgang, 1958), during the course of an argument (Federal Bureau of Investigation (FBI), 2004), involve the use of a firearm (FBI, 2004), and is an expressive or emotional crime in response to adverse situations (e.g., Salfati, 2000). Therefore, a criminal history comprised of more violent and antisocial offenses is consistent with what is known about homicide in general.

Given the finding that serial offenders were proportionally more likely to be convicted of instrumental offenses and single offenders were proportionally more likely to be convicted of violent offenses, further analyses were undertaken to determine if there were significant differences between serial and single offenders both within the violent/instrumental themes and between the themes. This process involved the calculation of four group means: 1) serial/instrumental, 2) serial/violent, 3) single/instrumental, and 4) single/violent. Using the proportional scores for each variable for single and serial offenders derived in the external variable analysis, the means were calculated by adding the proportional scores for all variables in one theme (instrumental or violent) for single-victim offenders and then dividing by the number of variables in that theme. This procedure is then repeated for serial offenders in each theme. These means were then compared to determine if there was a significant difference between these four groups.

Mann-Whitney U-tests failed to find a significant difference between the serial/instrumental and single/instrumental, serial/violent and single/violent, and single/instrumental and single/violent groups (all  $p > .05$ ). However, the Mann-Whitney U-test did find a significant difference between the group means for the serial/instrumental and serial/violence groups ( $p = .028$ ). The finding of a significant relationship for serial offenders

between the violent and instrumental themes may indicate two different criminal trajectories for serial homicide offenders that deserve further scrutiny in future studies using larger samples.

#### Summary of Aim 1

Aim 1 of the current study was to determine if a single thematic framework could be applied to both serial and single homicide offenders when they were directly compared, which was supported by the current findings. However, the results also indicated that three offenses – sexual, weapon, and arrest – showed a different pattern of co-occurrences with other variables when single and serial offenders were examined together, as opposed to when single offenders were examined alone by Trojan and Salfati (2009b). In the current study, sexual offenses in particular were shown to be potentially important in differentiating serial and single offenders in terms of how it co-occurs with other offenses, possibly suggesting that prior sexual offenses have a different meaning for single versus serial homicide offenders in terms of overall criminal themes. While the current section provides a basis for future studies to explore general trends in the prior offending of single and serial homicide offenders, the patterns identified and generalizability to other studies mentioned throughout the section are limited due to the small sample of serial homicide offenders.

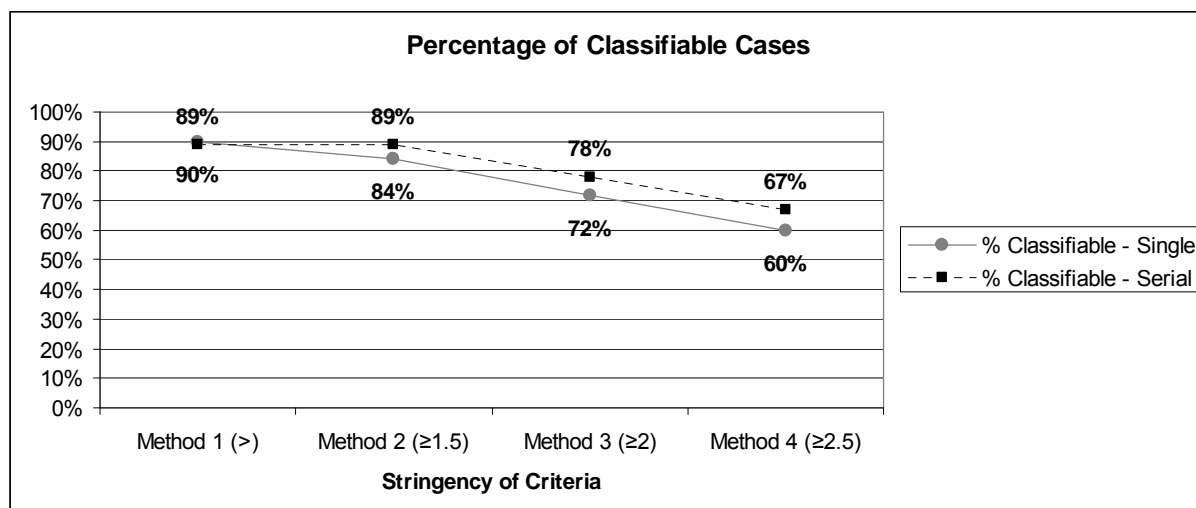
#### **4.4.2 Aim 2: Specialization of Serial and Single-Victim Offenders**

Aim 2 of the current study was to determine if both types of offenders demonstrate specialization in their prior offending and if the offenders differ in terms of the type or degree of specialization. Specialization within the violent/instrumental framework would be indicated by a majority of a given offenders' convictions falling within only one theme; versatility in offending would be indicated by a high mixture of offenses from both themes.

Two high frequency variables (drug and traffic offenses) are not considered in determining dominance within the thematic regions identified, because they occurred in more than 50% of cases and cannot be used to discriminate offenders. They simply define the core offenses of the sample as a whole and not the thematic regions. Additionally, twelve single-victim offenders only had prior convictions for the high frequency offenses and, therefore, these offenders cannot be allocated to either theme and are not included in the current analyses.

To answer Aim 2, each case was individually examined and a total score for each theme was calculated based on how many convictions that offender had for all of the violent offenses ( $n = 10$ ) and how many convictions they had for all of the instrumental offenses ( $n = 10$ ). These scores were then compared across four increasingly stringent cut-off criteria before a given offender could be considered a 'specialist'. The least stringent method simply required a higher number of convictions in one theme compared to the other. The remaining methods required at least  $1\frac{1}{2}$  times, 2 times, and  $2\frac{1}{2}$  times the number of convictions in one theme. These four criteria are being compared to illustrate how the stringency of the criterion that is applied will affect the model's ability to discriminate between cases (see Trojan and Salfati [2009a] for a more complete discussion).

The proportion of specialists across all four criteria for both serial and single homicide offenders are seen in Figure 4.4.3.



**Figure 4.4.3: Percentage of Classifiable Cases: Comparison of the percentage of serial versus single homicide offenders' criminal histories that could be allocated to a single thematic region across four levels of stringency. Percents above the lines refer to serial cases and the percents below the lines refer to single-victim cases.**

Figure 4.4.3 shows that as the stringency of the cut-off criteria increased, a lower proportion of serial and single offenders could be allocated to a single thematic region and considered 'specialists' with a range of 30% for single-victim offenders and 22% for serial offenders from the least to most stringent criteria. This variation demonstrates the impact of choosing a criterion that is either too broad or too strict when testing a thematic framework.

To remain consistent with the original study by Trojan and Salfati (2009b) and because it is the most stringent criterion typically appearing in the literature (e.g., Hakkanen, Lindlof, et al., 2004; Salfati, 2000; Salfati & Haratsis, 2001), the third method requiring at least double the number of convictions in one theme compared to other was chosen as a cut-off point. Using this criterion, of the serial homicide cases that could be classified, 86% specialized in instrumental offenses and 14% in violent offenses. Of the single-victim homicide cases, 52% specialized in instrumental offenses and 48% specialized in violent offenses.

## Summary of Aim 2

The above results demonstrate that a substantial proportion of both serial and single homicide offenders are likely to specialize in the offenses preceding their homicide(s) according to the thematic framework developed in Aim 1. Using a stringent cut-off criterion, almost equal proportions of single-victim offenders were likely to specialize in violent or instrumental offenses. Conversely, there was a substantially greater likelihood for serial offenders to specialize in instrumental over violent offenses.

## **4.5 DISCUSSION**

The purpose of this study was to explore patterns in the criminal offenses preceding a homicide or a homicide series by directly comparing the criminal histories of single-victim and serial homicide offenders to determine if a single thematic framework could be applied to the criminal backgrounds of both types of offenders. The results showed that the thematic framework developed by Trojan and Salfati (2009b) in reference to only single-victim offenders was generally stable when serial and single offenders were examined together in that the present results demonstrated thematic groupings of violent offenses and instrumental offenses. However, the thematic co-occurrences of three variables changed when serial and single offenders were considered together. Rather than examining these offenses in isolation, considering how these offenses co-occur with other offenses differently in the backgrounds of single and serial offenders may be more useful in differentiating between these offenders.

Additionally when the prominence of the themes in relation to offender type (single/serial) was explored, a higher proportion of single offenders committed most of the violent offenses and a higher proportion of serial offenders committed most of the instrumental offenses. Single-victim homicide usually arises from an interpersonal dispute or is an aggressive

reaction to a specific situation, occurring between individuals known to one another. Collectively, this could indicate that the typical single-victim homicide is impulsive and situational and committed by an individual who may display a history of reacting aggressively to adverse situations or conflicts. This may reflect an overall aggressive or antisocial nature in a multitude of situations, including crimes preceding the homicide itself.

Uniting many of the commonly cited components of serial homicide – targeting of strangers, predatory nature of their homicides, and possible sexual elements (e.g., Ressler et al., 1995; Schlesinger, 2004), combined with the fact that serial offenders' criminal histories tend to demonstrate a higher likelihood of property crimes over other offense types (e.g., Hickey, 2006) – is an underlying theme of exploitation of both people and property aimed at satisfying an ulterior motive or need of the offender other than direct harm to a victim. It is possible that the same overall theme reflected in serial homicide is being seen in the findings of the current study pertaining to offender criminal history. This may also explain why the association between sexual offenses and the remaining variables was impacted by the inclusion of serial homicide offenders. These offenses have been shown to be thematically similar in other studies (Salfati, 2000) and if there is a sexual component to some serial homicide cases, prior studies have found a link between a history of burglary and sexual homicide (e.g., Schlesinger & Revitch, 1999). Furthermore, Wright et al. (2008) found that multiple homicide offenders were more likely to have a prior rape conviction compared to single offenders, supportive of the current findings. This may explain why including serial homicide offenders into the current analyses influenced the co-occurrences of sexual offenses and why sexual offenses occurred within the context of an overall instrumental background for serial homicide offenders.

When specialization was viewed within the context of thematic offense groups, most serial and single offenders could be allocated to a single thematic region using a stringent criterion. While this finding is in direct contrast to the results of Wright et al. (2008) who found “no evidence of a significant difference” between single and multiple homicide offenders with regard to offending specialization (p. 390), the current study found that serial offenders were more likely to have a background comprised of instrumental offenses. This supports the suggestion of Farrington et al. (1988) who stated that grouping offense categories into “broader categories, so that one offense category corresponded to one underlying theoretical construct” may be able to better account for specialization patterns (p. 482). This approach should be considered in future studies of criminal specialization among homicide and other types of offenders. In addition, the application of MDS techniques to the study of specialization identified the bulk of homicide offenders as specialists. If this finding were reaffirmed in subsequent studies, it would call into question what is known about homicide offenders and a higher degree of specialization would separate them from general offender populations. Although speaking specifically of multiple homicide offenders, Wright et al. (2008) express this point by saying that specialization would indicate that “such offenders are in some way fundamentally different from the general offender population, and therefore existing criminological explanations of wayward behavior would be...inapplicable...[and] evidence of versatility in offending, however, would suggest just the opposite” (p. 383).

Future studies should seek to identify distinct groups of serial homicide offenders and determine how they are similar to or different from single-victim offenders both in terms of their prior offending and current crime scene behaviors. This would not only go some way in refining our understanding of the commonalities of serial and single offenders but would also have

important implications for investigators. Only studies that seek to directly compare the criminal histories and crime scene behaviors of these offenders, as well as sub-groups among them, can identify the differences that will be useful to investigators. In the same respect, the fact that nearly half of the initial serial homicide sample in the current study had not been convicted of any offense prior to the first homicide suggests a sub-group of serial offenders who are unlikely to appear in official police records. Studies should compare the crime scene behaviors of serial offenders with no criminal history to the behaviors of serial offenders who have committed prior offenses to determine how they are similar or different on measures other than criminal history.

There are several limitations to the current study. The most notable limitation is the small number of serial homicide offenders that could be used in the current study. Serial homicide is not a frequent occurrence and it is difficult to obtain a substantial sample because assembling a collection of cases would typically require working with multiple agencies. Of the serial homicide case files available to the authors in the current study, many could not be used due to the absence of criminal history information. Only 17 cases were available where it could be determined that the offender did or did not have a criminal record, and if a criminal record was present, for what offenses. Six of these 17 serial homicide offenders did not have a criminal history. Therefore, the results reported previously that showed that the serial homicide offenders were much more likely to be considered specialists in prior instrumental offenses can only be taken to refer to those serial offenders with a prior record and there may be important theoretical differences between these offenders and those without a criminal record in terms of crime scene behavior. In addition, due to the small sample used in the current study, the results of the present study may differ from previous research and the patterns identified absolutely must be validated on larger, more representative samples in future research.

A second limitation of the current study is that it focuses exclusively on criminal offenses that preceded the homicide or first homicide in a series. Other studies should examine criminal offenses that occurred subsequent to the homicide, but before arrest for the homicide in single-victim homicide or offenses that take place throughout a series of homicides (see Salfati [2008] for a discussion of the boundaries between current and prior offending). Establishing overall timelines of criminal offending during a homicide series could help in understanding how offenses committed during a series may be influenced by earlier homicides or how these offenses influence subsequent homicides, as well as to better understand the overall progression to homicide.

#### **4.6 CONCLUSION**

As the analyses in the overall project evolved and a better picture of single and serial homicide offenders' criminal histories was developed, the analyses showed that a single thematic framework of criminal specialization could in fact be applied to both single and serial offenders. The results of the current chapter also demonstrated that several criminal offenses co-occurred differently with other offenses in the backgrounds of single and serial offenders and possible reasons for these new patterns of co-occurrences were proposed.

However, in accordance with the hypothesis stated at the introduction of the current chapter, serial and single-victim offenders differed in terms of where they fell within the overall framework, with serial offenders more likely to be considered specialists in prior offenses linked by a theme of instrumentality. The totality of the results presented in Chapter 4 suggests a possible point of differentiation between single and serial offenders in terms of the overall thematic co-occurrences of offending variables in their respective criminal histories. It was

decided to further explore potential thematic differences between individual serial and single offenders directly using Multi-Dimensional Scalogram Analysis (MSA).

## CHAPTER 5: COMPARING THE CRIMINAL HISTORY PROFILES OF SERIAL AND SINGLE-VICTIM HOMICIDE OFFENDERS

Trojan, C. & Salfati, C.G. (2009). *Comparing the criminal history profiles of serial and single-victim homicide offenders*. Manuscript submitted for publication.\*

### 5 INTRODUCTION TO THE CURRENT CHAPTER

The current chapter further explores the framework developed in Chapters 2 and 4 through a direct comparison of offenders. Thus far, the analyses used SSA to examine how criminal history variables co-occurred across the sample of single and serial offenders as a whole. In other words, the analyses conducted in the preceding chapters have concentrated on what prior offending *variables* are likely or unlikely to be found in a given offender's background, as per Aim 2 of the overall study. However, the original proposal also discussed multi-dimensional scalogram analysis (MSA) as a way to directly compare the individual *offenders* to one another. MSA allows for consideration of how individual offenders differ when their criminal histories are examined in a more collective manner, across multiple variables at once combined into a 'profile' for each offender. In this way, MSA provides a visual depiction of how the offenders themselves are similar or different from one another and could allow for the identification of potential sub-groups of offenders as well as aid in further refinement of the violent/instrumental framework. However, due to the lack of studies directly examining and comparing homicide offenders in the relevant literature, the current chapter is exploratory in its analyses and the findings will hopefully provide a foundation for more detailed examinations in future studies.

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\* This chapter is under review with the journal *Victims and Offenders*.

## 5.1 LITERATURE REVIEW

Understanding patterns in the offenses that precede a homicide may help to understand the homicide itself. In other words, prior criminal offending may be related to behaviors committed at the subsequent homicide crime scene, which could have direct implications for investigations of homicide. Criminal history is an objective piece of information readily available to homicide investigators and studies that seek to empirically establish “links between actions in a crime and aspects of an offender’s criminal background...pave the way for powerful operational support” (Canter & Youngs, 2003, p. 201). By undertaking an exploration of prior offending of homicide offenders, the current study seeks to contribute to empirically based studies of offender profiling and its utility as an investigative tool. The field of Investigative Psychology has contributed the overwhelming majority of the research in this area, as the issue has not been taken up by the general criminal justice literature in terms of validation of profiling techniques.

Some scholars have noted that there is an assumption that serial homicide offenders are unique enough from other offenders to merit separate empirical examination (Delisi & Scherer, 2006). However, the true degree to which these offenders in fact differ is not fully understood at present. Research has suggested that serial offenders are not a unique form of criminal but are instead drawn from the general criminal population (Canter et al., 1996) and do not significantly differ on demographic traits from single-victim offenders (Kraemer, Lord, & Heilbrun, 2004). Yet, there is limited research directly comparing single and serial offenders in terms of their prior offending. It is important to begin by identifying similarities and differences in the general prior offending trends among these offenders to gain a deeper understanding of their respective criminal progressions to homicide or multiple acts of homicide. This involves both examinations

of what offenses are likely to appear together in a given offender's criminal background, as well as how offenders differ from one another when the individuals themselves are directly compared across the totality of their prior offenses. If offenders cannot be effectively differentiated in terms of distinct patterns in their criminal histories, then this information may be of limited utility in narrowing down suspect pools for the purposes of investigation and other background variables may be a more appropriate focus for studies linking crime scene actions to offender characteristics. In differentiating between offenders' criminal histories, the method used to examine prior offending will have differing implications for how to detect these patterns and link them to the homicide crime scene.

### **5.1.1 The Thematic Approach: An Alternative to Typologies**

Several early studies examining single and, more frequently serial, homicide produced classification systems that attempted to sort offenders based on individual crime scene behaviors or offender characteristics without taking into account the true prevalence of these variables among different offenders or the relationships between variables. Two of the most well-known of these models were proposed by Ressler et al. (1995) and Holmes and Holmes (2002). However, subsequent empirical tests of both typologies failed to support the existence of the proposed categories of offenders as distinct 'types' (Canter et al., 2004; Canter & Wentink, 2004). These typologies were primarily criticized because they could not effectively differentiate between offenders due to a heavy overlap of behaviors or characteristics defining different offender types and a lack of guidelines regarding how an individual was assigned to a single category if characteristics from multiple types were present (Canter & Wentink, 2004). Embedded within these typologies were assumptions about criminal offenses likely to define the backgrounds of the various offender types. However, these offenses were simply catalogued and listed according

to legal definitions for the offenses and the possibility that other offenses that were not listed may also occur in the individual's background was generally not addressed. Looking at prior criminal offenses in terms of the separate legal definitions that focus on the seriousness of the crime offers a limited perspective because it ignores possible theoretical or psychological similarities between different legally defined offenses (Salfati & Taylor, 2006; Salfati, 2008). For instance, studies have found that theft and burglary offenses tend to occur in homicide offenders' backgrounds along with sexual offenses (e.g., Salfati, 2000). Sexual and theft offenses are considered very different crimes with different motivations – sexual offenses are considered a crime against persons and theft offenses are considered property offenses according to the Uniform Crime Reports definitions (Federal Bureau of Investigation, 2007). Yet, the fact that studies have found them to co-occur in the backgrounds of offenders suggests that they have an underlying psychological link in that both are instrumentally aimed at the obtainment of some sort of ulterior goal (e.g., Salfati, 2000). Grouping offenses by their pure legal classification would miss this psychological pattern.

Examining individual prior criminal offenses to the exclusion of their relationship to each other may also be an oversimplification and examining offenses collectively could yield a richer understanding of overall criminality as it precedes a homicide or homicide series. In this effort, it may be more appropriate to focus on the psychological or theoretical constructs – themes – that underlie groups of similar offenses that co-occur across cases in a sample, as opposed to examining offenses singularly according to rigid legal classifications. Rather than indicating rigid offender types, themes may or may not be present to varying degrees in all cases, but the “differences between offenders are in the emphasis that any particular offender exhibits” (Canter, 2000, p. 38). In other words, the thematic approach begins with the premise that some degree of

behavioral variation is bound to exist and allows for a situation where an offender demonstrates individual behaviors or characteristics from more than one theme, so long as the majority of their behaviors fall under only one dominant theme (e.g., Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999; Trojan & Salfati, 2009a).

This approach holds that by examining variables, or individuals, in relation to one another underlying themes of groups of like behaviors or characteristics will be evident and will provide a better understanding of the complex relationships that underlie offending behaviors and offender characteristics, as well as differences among the offenders themselves. A growing body of research has provided evidence for the theoretical and empirical validity of the thematic approach in identifying themes that theoretically tie together distinct crime scene behaviors and offender characteristics in single-victim and serial homicide (e.g., Fritzon & Brun, 2005; Godwin, 2000; Kocsis et al., 2002b; Lundrigan & Canter, 2001; Salfati & Haratsis, 2001; Salfati & Park, 2007; Santtila, Hakkanen, et al., 2003).

While the thematic approach is better able to differentiate between individuals than rigid classification systems, it has typically been used to identify patterns in offenders' backgrounds in general, across a variety of demographic and background factors (e.g., Salfati, 2000; Salfati & Canter, 1999). Direct examinations of offenders' criminal histories as a central focus of study have been slower to develop. Moreover, Salfati and Canter (1999) and Salfati (2000) examined how background characteristics and prior offenses co-occurred across all cases in their samples. In other words, these studies examined what variables are likely to appear together in any given case. For example, Salfati (2000) found that prior theft and burglary offenses co-occurred across her sample, meaning that if an offender had a record for a theft offense it was *likely* that they also had a record for burglary. Under this approach, even though two variables are shown to co-occur

across the sample in general, it does not necessarily mean both offenses will appear in the background of a specific offender. The current study explores the use of an alternative methodology that examines the relationships between the individual offenders themselves taking into account how their offenses truly occur in their criminal history. If most offenders have a criminal record prior to the homicide(s), this approach would be useful in identifying similarities and differences between individual *offenders* rather than between *variables* across a sample of offenders.

### **5.1.2 Criminal History of Homicide Offenders**

Historical and contemporary studies have consistently shown that most homicide offenders have committed offenses prior to the homicide both in single (e.g., Broidy et al., 2006; Delisi & Scherer, 2006; Dobash et al., 2007; Santtila, Hakkanen, et al., 2003; Santtila et al., 2004; Soothill et al., 2002; Wolfgang, 1958) and serial homicide (e.g., Arndt et al., 2004; Canter et al., 1996; Godwin, 2000; Hickey, 2006; Holmes & Holmes, 2002).

Studies of single-victim homicide offenders in several countries have demonstrated a recorded criminal history in the backgrounds of most offenders, sometimes in more than half of the samples used. A recorded criminal history has been found in 68% (Soothill et al., 2002) and 87% (Dobash et al., 2007) of samples of homicide offenders in the United Kingdom and in 43% (Cook et al., 2005), 57% (Broidy et al., 2006), 60% (Delisi & Scherer, 2006), and 64% (Wolfgang, 1958) of samples of homicide offenders in the United States. Looking at Wolfgang's (1958) classic study, 66% of his sample had a prior record for crimes against person, 48% of which were for aggravated assault, and 34% had a criminal history for other types of offenses, with 9% for property offenses. More recent studies have found a higher proportion of offenders with prior property offenses. For instance, Soothill et al. (2002) found that among homicide

offenders with a criminal record, 72% had prior convictions for theft and handling stolen goods and 61% for burglary, with an additional 57% having prior violent convictions, including 5% with prior sexual offenses. Furthermore, many homicide offenders are likely to have multiple prior arrests (Delisi & Scherer, 2006).

Similar to single-victim offenders, samples of serial homicide offenders have shown criminal history prevalence rates of 51% (Arndt et al., 2004), 68% (Hickey, 2006), and 75% (Canter et al., 1996). Hickey (2006) found that 45% of his sample of serial offenders committed prior property crimes, 38% committed sexual offenses, and 8% committed assault. Similar patterns were found by Godwin (2000), with more than 60% of his sample having prior convictions for burglary, theft, or robbery, with 45% having prior sexual offenses and only about one-quarter exhibiting violent offenses.

Several interesting patterns emerge from these studies. First, it appears more likely that violent offenses, such as assault, will appear in the criminal backgrounds of single-victim homicide offenders (e.g., Soothill et al., 2002; Wolfgang, 1958) compared to serial offenders (e.g., Godwin, 2000; Hickey, 2006). Additionally, sexual offenses appear to be more common among samples of serial homicide offenders (e.g., Canter et al., 1996; Hickey, 2006) compared to single-victim offenders (e.g., Soothill et al., 2002). It should be noted that many of the studies cited here that include base rates of prior offending among their samples tend to report those rates in terms of how the offenses are legally classified, such as a person/property distinction. As stated previously, such an approach ignores how different legally defined offenses share the same underlying psychological theme (Salfati, 2008; Salfati & Taylor, 2006). For example, Salfati (2000) found a co-occurrence between prior convictions for theft, burglary, and sexual offenses in homicide offenders' criminal backgrounds. The author proposed that sexual and theft

offenses are thematically similar in that the offender stands to gain instrumentally from these offenses. In other words, thematically, both involve ‘stealing’ from the victim (Salfati, 2000). Examining these offenses according to their legal classification does not explain *why* they are likely to co-occur in offenders’ backgrounds, but focusing on the underlying psychological theme between these offenses allows for a better understanding of overall criminal patterns. Two recent studies examined prior offending directly using a thematic approach in order to determine if patterns in prior offending are evident when criminal history is the central focus of investigation.

Trojan and Salfati (2009b) examined the criminal histories of a sample of single-victim homicide offenders to determine how different legally defined offenses tended to co-occur with one another across the sample as a whole. In other words, this study examined what offenses were likely or unlikely to appear together in offenders’ criminal backgrounds in terms of their thematic links. The authors found that offenses tended to group into violent and instrumental offenses. Instrumental offenses – aimed at satisfying an ulterior goal or motive of the offender (Feshbach, 1964) – included offenses such as burglary and theft, but also those aimed at more intangible goals, such as evasion of punishment in the case of legal offenses like obstruction of justice (Trojan & Salfati, 2009b). Violent offenses included not only directly violent offenses, such as assault, domestic violence, and sexual offenses, but also indirectly violent offenses, such as harassment, and violent offenses aimed at property, such as criminal damaging. This study went some way in increasing our understanding about what offenses are likely to co-occur in the backgrounds of homicide offenders that would not have been apparent if the separate offenses were simply catalogued according to their legal definitions. However, the authors noted in their discussion the general lack of studies that have directly compared single-victim with serial

homicide offenders in terms of themes in prior offending (Trojan & Salfati, 2009b) and a second study was conducted that included serial homicide offenders (Trojan & Salfati, 2009c). If the overall framework remained stable, it would suggest that a single thematic framework could be applied to both serial and single homicide offenders' criminal histories. The results demonstrated that the overall framework remained the same and two clear thematic groups, violent and instrumental, for the most part did remain stable (Trojan & Salfati, 2009c). However, three prior offenses essentially switched thematic groups. In other words, these three offenses – offenses related to the arrest process such as evasion, sexual offenses, and weapons-related offenses – showed a new pattern of co-occurrence when all variable relationships were considered with the addition of the serial offenders. What this suggests is that these offenses may be more important or more prevalent in the criminal histories of serial or single offenders and how they relate to other offenses could be a significant point of differentiation between these types of offenders. To examine this possibility, the authors examined each case individually to determine if it dominated within only one theme. Using a stringent criterion that has been used in prior homicide studies (e.g., Salfati, 2000; Salfati & Haratsis, 2001) that required twice the number of convictions in a single theme compared to the other, the authors found that serial offenders were substantially more likely to specialize in instrumental offenses (86%), while single offenders were equally likely to specialize in either violent (48%) or instrumental offenses (52%). This shows that while single and serial offenders' criminal histories could be conceptualized along the same thematic framework of co-occurring offenses, they were primarily differentiated according to their particular emphasis within that framework.

These two studies provide a foundation for understanding how basic patterns and general trends in the criminal histories of single and serial offenders may be evident when the offenses

are examined collectively and began the process of more fully differentiating serial and single offenders according to their criminal backgrounds. However, the studies by Trojan and Salfati (2009b, 2009c) examined how *offenses* co-occurred across the samples as a whole. This allows for the possibility of developing profiles of prior offending that can help to differentiate between the individual *offenders* more completely and this became the central focus of the current study.

## **5.2 AIM OF THE STUDY**

The current study examines single and serial homicide offenders in terms of their criminal history profiles, comprised of ten prior offending variables. The aim of the current study is to explore basic trends and patterns in the similarities and differences between individual offenders when their criminal history is examined across multiple variables simultaneously and determine whether offenders can be thematically grouped according to the degree of instrumental or violent offending displayed across their criminal history profiles.

## **5.3 METHODS**

### **5.3.1 Data Sources**

So that the findings of the current study could be related back to the findings of Trojan and Salfati (2009b, 2009c), the same data sources and samples are used.

The single-victim homicide sample was collected from homicide case files belonging to the Cincinnati Police Department. Homicides were selected from those occurring from 1997 to 2006.

Serial homicide cases were drawn from closed, fully adjudicated state and local cases that were contributed from law enforcement agencies from around the country for the purpose of

research. All identifiers, including names of victims, suspects, offenders, officers, departments and correctional agencies, are removed. Only aggregate data are reported on.

### **5.3.2 Selection Criteria**

“Because of the extreme nature of homicide offenders, it is often more difficult to obtain a random sample.” (Wright et al., 2008, p. 386) For this very reason, data on both single and serial homicide were drawn from separate samples according to specific selection criteria designed to obtain a broad sample of offenders. Unfortunately, this means that the results may have less import than if offenders had been matched or randomly drawn and is a problem identified by several authors (e.g., Delisi & Scherer, 2006; Wright et al., 2008). All cases meeting the basic criteria outlined below, as well as contained information on the offender’s criminal history, were included in the current analysis.

Single-victim homicide cases were included if the case involved a single offender and a single targeted victim. Secondly, only cases resolved by a conviction were selected. Finally, cases in which the offender was convicted of manslaughter, involuntary manslaughter or reckless homicide were excluded unless the initial arrest charge was for murder or aggravated murder. This final requirement was adopted to account for the plea bargaining process in which cases that clearly involved willful intent were subsequently plead down to a lesser offense.

To be included in the serial homicide sample, a homicide series needed to include a minimum of three victims, two of whom must be deceased, and the homicides had to occur as discrete, separate incidents. Additionally, to eliminate the inclusion of contract killers, the homicides needed to have occurred without the direction or blessing of any political or criminal organization. Only serial homicide cases involving a single offender were used.

### **5.3.3 Initial Samples**

The above requirements resulted in samples of 137 single-victim homicides and seventeen serial homicide offenders responsible for 97 victims (see Trojan & Salfati [2009c] for a demographic description of these samples). Because criminal convictions were examined, all offenders who had no prior convictions were excluded from the initial samples used by Trojan and Salfati (2009b, 2009c). Additionally, cases involving juvenile offenders were excluded because most of their prior offenses were status offenses (e.g., truancy, incorrigibility, etc.) and do not have equivalents in adult offending populations making them unsuitable for comparison. This resulted in a sample of 122 single-victim offenders and nine serial homicide offenders.

### **5.3.4 Current Study Sample**

For the current study, Multidimensional Scalogram Analysis (MSA) was used (MSA is explained in detail in the next section). It was necessary to reduce the sample in the current study to less than 100 cases due to the software used for analysis. Of the original 131 homicide cases (122 single-victim, 9 serial), cases that did not have prior convictions for any of the variables selected for analysis were excluded. This resulted in the elimination of twenty-six cases. Secondly, offenders who could not be allocated to a single dominant theme by Trojan and Salfati (2009c) using only a moderately stringent cut-off criterion requiring 1 ½ times the number of convictions in one thematic offense group compared to the other were also eliminated. This resulted in a further eighteen cases removed from the sample, leaving a final sample of 87 cases – 80 single-victim offenders and 7 serial offenders. Although the sample of serial homicide offenders is small, the current study is primarily exploratory in its effort to directly compare single-victim homicide offenders in relation to one another and in relation to serial homicide offenders. The aim of the study was to begin the process of identifying trends in offenders'

criminal histories and similarities and differences between offenders using an approach that can identify thematically similar groups of offenders. The current study is only a first step in more completely differentiating between offenders in terms of their prior criminal offending and any patterns or thematic frameworks identified should be considered preliminary given the small sample of serial offenders appropriate for analyses.

Of the final sample of single-victim homicide cases ( $N = 80$ ), 78% of victims and 90% of offenders were male. Nineteen percent of victims and 15% of offenders were White and 81% of victims and 85% of offenders were Black. Victims ranged in age from less than one year old to 83 years old, with an average age of 32 (median = 29). Offenders ranged in age from eighteen to 58 with an average age of 30 (median = 27).

The final sample of serial homicide cases was comprised of seven offenders, responsible for a total of thirty-seven victims. Eighty-four percent of these victims were deceased. Offenders' series ranged from a minimum of four victims to a maximum of six victims. Of the victims in the sample ( $N = 37$ ), 16% were male and 84% were female. Sixty percent of victims were White, 27% were Black, and 5% were Asian (missing = 8%,  $n = 3$ ). The average age of victims across the serial homicide sample was 29 years old (median = 30, range 9 to 73). Of the seven serial homicide offenders, 100% were male, 57% were White and 43% were Black. The average age of the offenders at the time of the first homicide was 34 (median = 30, range 24 to 56).

### 5.3.5 Research Tool and Procedure

Data was collected using the Homicide Profiling Index (HPI) version 3 (HPIv3) and 4 (HPIv4)<sup>3</sup> – a coding dictionary developed specifically for use with homicide case files (Salfati, 2005). The HPIv4 includes coding guidelines and variable definitions for a range of items, such as the nature of the case, offender and victim characteristics, crime scene actions, and offender motivation. Early versions of the HPI have shown inter-rater reliability ratings as high as 89% (Salfati, 2005).

The HPIv4 protocol converts information taken from a case file into a numerical format, either dichotomous (0 = absent, 1 = present) or assigns numbers to each category in variables that have multiple categories. This protocol was developed explicitly for the purpose of ensuring that all information taken from a case file is recorded in a reliable manner and in such a way as to ensure full confidentiality of the information being recorded.

### 5.3.6 Variable Selection

Of the original twenty-two offense variables used by Trojan and Salfati (2009b, 2009c), a subset of ten was selected. The nature of the analyses used in the current study, discussed in detail below, precluded using a larger number of variables. Variables were selected based on the findings of these original studies and/or because they have been identified in other studies as important criminal background variables in single or serial homicide.

#### Sexual Offenses

Sexual offenses were incorporated into the current analyses for two reasons. First, its co-occurrence with other criminal history variables was impacted by the addition of serial homicide

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<sup>3</sup> Single-victim homicide data was collected using the HPIv3 and serial homicide data was collected using the HPIv4. Two versions of the HPI were used because data was collected at two points in time and the most up-to-date version was used in each instance. The changes between the HPIv3 and HPIv4 did not deal with substantive changes to variable coding procedures or variable definitions.

offenders in Trojan and Salfati's (2009c) study. In other words, when only single-victim offenders were examined, this variable co-occurred with violent criminal history variables, yet when serial offenders were included it had a strong co-occurrence with the instrumental offenses. The authors stated that this may suggest that sexual offenses mean something different for serial compared to single offenders (Trojan & Salfati, 2009c). In addition, it has been suggested that a sexual element exists in many cases of serial homicide and the homicides are likely to be preceded by sexual offenses (e.g., Canter et al., 1996; Hickey, 2006; Schlesinger, 2004). This latter point particularly advocates for its examination in studies using serial homicide samples.

### Weapon-Related Offenses

Similar to sexual offenses, weapons-related offenses (i.e., offenses such as carrying a concealed weapon but excluding crimes where the weapon was used against a victim, such as aggravated assault) were included because the variable's co-occurrences changed when serial offenders were added into the sample used by Trojan and Salfati (2009c). In addition, weapon use may be an important discriminator between serial and single homicides. According to national statistics, 70% of homicides involve a firearm (Federal Bureau of Investigation, 2004). In contrast, some authors contend that serial homicide offenders prefer less impersonal, close contact weapons (Holmes & Holmes, 2002). For example, 55% of a sample of serial offenders provided by Godwin (2000) killed their victim either by ligature strangulation, manual strangulation, or the victim was beaten with the offenders' own hands or feet. Because these methods are less likely to result in a prior weapons-related charge, weapon offenses may be an important point of difference between serial and single offenders.

### Assault

While 25% of the original single-victim sample used by Trojan and Salfati (2009b) did have prior convictions for assault offenses, proportionally this offense was more common among serial homicide offenders (56%) (Trojan & Salfati, 2009c). This finding that more than half of the serial offenders had prior assault offenses is contrary to what was expected based on the relevant serial homicide literature. For example, only eight percent of Hickey's (2006) sample committed prior assaults. Therefore, it was decided to include it in the current study.

### Robbery and Armed Robbery

These offenses were included in the current analyses due to the fact that in both of the studies by Trojan and Salfati (2009b, 2009c), robbery and armed robbery showed a high degree of co-occurrence with one another in cases across the sample, but while co-occurring with other instrumental variables, the association with the remaining instrumental variables was not as strong. These offenses have an identifiable instrumental goal (i.e., material or financial gain) but the willingness to confront a live victim incorporates a more aggressive means of obtaining that goal. It was suggested by Trojan and Salfati (2009b, 2009c) that these offenses show a blending of the instrumental/violent themes and may indicate a potential sub-group of instrumental offenders who are willing to more aggressively pursue obtainment of a desired goal or item.

### Theft and Burglary Offenses

Theft and burglary offenses were included because of the high prevalence of pure property offenses among serial homicide offenders (e.g., Godwin, 2000; Hickey, 2006) suggesting that they may be core prior offenses among serial offenders. In the sample provided by Trojan and Salfati (2009c), a higher proportion of serial homicide offenders had prior convictions for both of these offenses compared to the single homicide offenders.

### Vice-Sex Offenses

Vice-sex (e.g., solicitation of prostitution) offenses were one of the only violent offenses that had proportionally more serial offenders compared to single offenders in Trojan and Salfati's (2009c) sample. Some authors have also suggested that prostitutes are uniquely vulnerable to violence, including homicide, and are sometimes selected as victims by serial offenders due to their vulnerability and availability (e.g., Salfati et al., 2008). Therefore, serial offenders may be more likely to have patronized prostitutes in the past and prior offenses for vice-sex offenses may be important in differentiating single and serial offenders' criminal history profiles.

### Disorderly Offenses

Disorder offenses (e.g., disorderly conduct, etc.) were included as an important criminal history variable due to its extremely high prevalence among single-victim offenders in the first study by Trojan and Salfati (2009b) with more than 50% of the sample having prior convictions for disorder offenses. This suggests that it may be an offense that differentiates single from serial offenders' criminal histories.

### Damage Offenses

The final variable selected for examination was offenses involving criminal damaging. Legally, these offenses are property offenses because they are not committed directly against a human victim. However, they clearly involve an element of direct violence although the violence is aimed at a physical structure, instead of a person. Similar to robbery and armed robbery damage offenses involve a blending of the instrumental and violent themes, as proposed by Trojan and Salfati (2009b, 2009c) so its inclusion was deemed appropriate.

### 5.3.7 Analyses

To answer the primary aim of this study, the ten variables selected for examination were combined into individual profiles for each offender which could then be compared to one another in terms of their overall offending patterns for these variables using Multidimensional Scalogram Analysis (MSA).

MSA is a type of Multidimensional Scaling Procedure that can be used to examine the association between individuals in a sample across multiple variables simultaneously (Canter, 1985). Each case is examined and a profile is developed that indicates the presence or absence of the variables for that particular case; variable presence is indicated by a 2 and variable absence is indicated by a 1. For example, in a profile comprised of three variables, two cases could have the profiles of 112 and 122. In this instance, the offenders have the same score on the first offense variable (absent in both profiles), the same on the last variable (present in both profiles), and differ only in terms of the second variable (absent in the first profile; present in the second profile). Once these profiles are developed for each offender in the sample, offenders could be compared manually to determine which individuals are similar or different, but such a process would become cumbersome with a large number of cases across a larger number of variables. For this reason, MSA produces a geometric plot to represent the strength of the similarities between cases based on their profiles. In this plot, profiles appear as points in the space and those points (profiles) that are more similar will occur closer to another (Guttman & Greenbaum, 1998). In situations where two individuals have the same profile, they are represented by a single point on the visual MSA plot. In the current study, this would mean that such individuals have committed the exact same types of prior criminal history offenses.

MSA attempts to find the best fit between the spatial configuration of the profiles and their true rate of co-occurrence so that the plot can be divided into regions that represent cases that are more similar to one another, here, in terms of their prior criminal offenses. These regional divisions help to identify thematically similar groups of cases. In order to determine how well the spatial configuration of profiles in the main plot represents their true co-occurrence, MSA calculates a coefficient of contiguity, ranging from 0 to 1. A coefficient of 0.9 or higher is generally considered a good 'fit' (Borg & Shye, 1995; Wilson, 2000).

The nature of MSA precludes the use of a large number of variables and generally, an MSA profile contains only between ten and fifteen variables (Borg & Shye, 1995). Including a higher number of variables would make it difficult to extract meaningful patterns in the plot due to the high degree of overlap that it would create throughout the geometric space.

In addition to the main plot, MSA also produces an individual item plot for each variable contained in the profiles. In the current study, there is one item plot for each of the ten criminal history variables being examined. These plots maintain the same configuration as the main plot (i.e., cases will appear in the same place for the main plot and each of the item plots) and again are represented as points in space. These item plots allow the researcher to identify regional divisions where the offenders' scores are the same on that particular criminal history variable (Porter & Alison, 2006b). An example from the current study would be an item plot that divides the sample into those who committed prior assaults from those that did not commit assault and would be located in the same region of the item plot. In this manner, these item plots can be overlapped with one another to determine how each variable used in the analysis is contributing to the overall configuration and thematic regions within the main plot.



Each of the points in Figure 5.4.1 represents an offender profile. If two or more offenders have the exact same profile they are represented by the same point and the numbers in the plot indicate the number of offenders represented by that particular profile. Here the sample of 87 offenders (80 single-victim and 7 serial) were collapsed into forty-seven distinct profiles.

The first important aspect of the main plot is a clustering of profiles in the center of the plot, many of which represent several individual offenders and one that in fact represents 15 offenders with same criminal history profile. This indicates that there is a large group of offenders with remarkably similar criminal history profiles and are therefore difficult to distinguish from one another at least according to the variables that are examined here. The remaining offender profiles spread out from this central cluster across the remainder of the plot and are mostly unique profiles, different from other offenders in the sample.

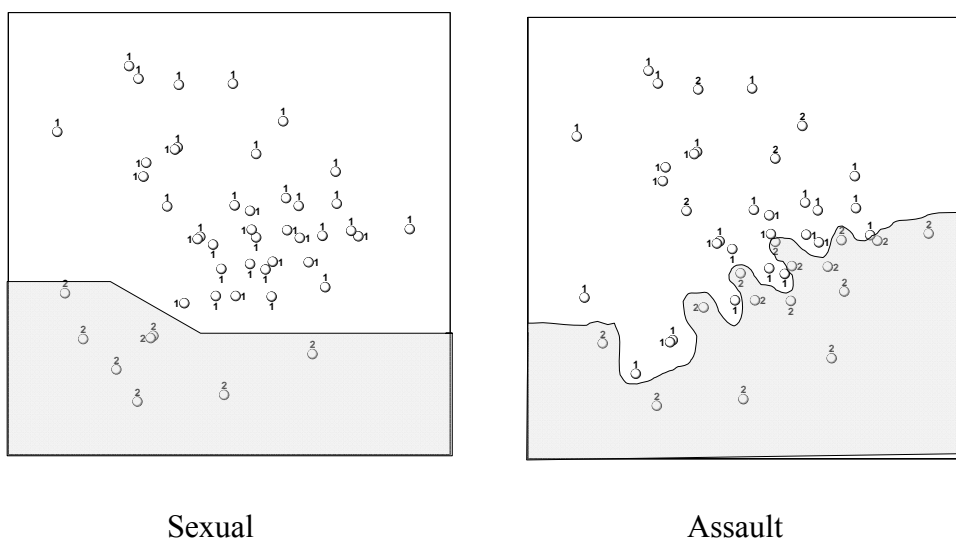
A second important aspect of the main plot in Figure 5.4.1 is that almost all of the serial homicide offenders have profiles that are unique from the single-victim offenders and from each other. In fact, only one serial homicide offender profile overlapped with one single-victim offender.

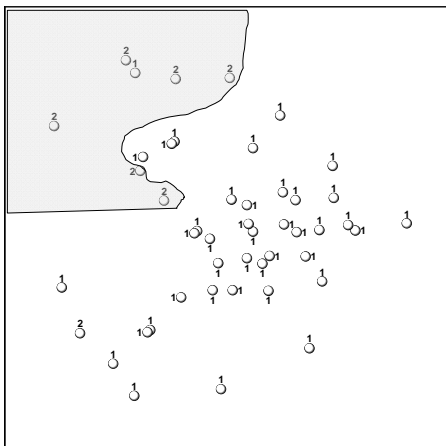
MSA is based on the premise that cases occurring closer to one another are not only similar but that by examining divisions between groups of co-occurring offenders, thematic regions will be evident. The configuration of profiles in the main plot shows that five of the seven serial homicide offenders are similar to one another in that they occur towards the bottom of the plot. There are also fewer single homicide offenders in this region compared to the remainder of the plot. This indicates that there are some offenses likely to appear in the serial offenders' criminal backgrounds that share a common link and possibly differentiate them from

most single offenders. To determine what variables are contributing to the regional distribution of profiles in the main plot, the item plots for the ten criminal history variables were examined.

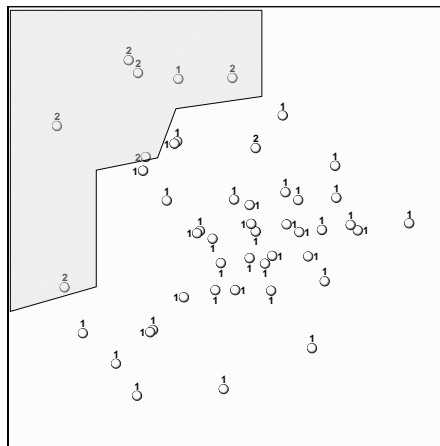
Again, the item plots maintain the same configuration as the main plot, but should divide the plot into two regions where offenders with that specific criminal offense in their background occur separately from those whose profile does not contain that offense. Once all the plots are so divided, they can be overlapped with one another to understand what offenses are contributing to the co-occurrence of cases within the main plot and their thematic links.

The ten item plots for the variables included in the current analyses are presented in Figure 5.4.2.

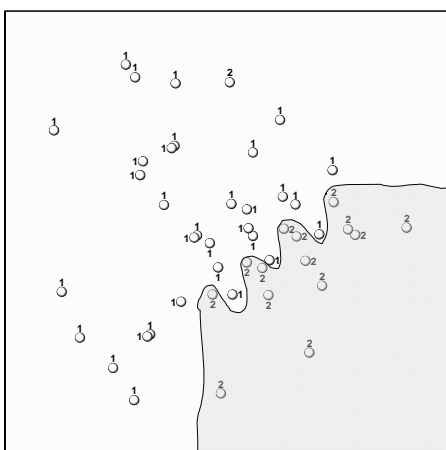




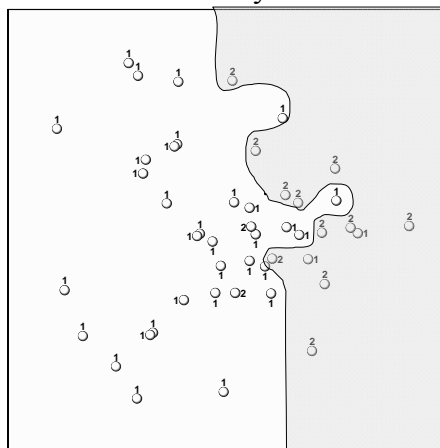
Armed Robbery



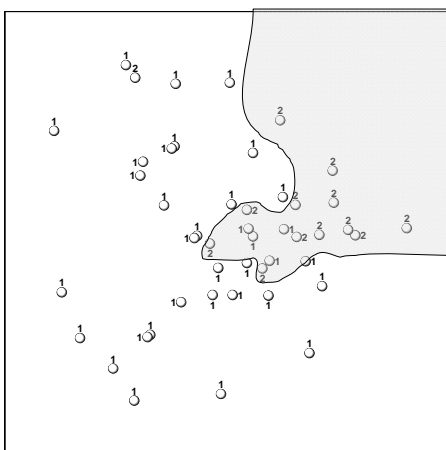
Robbery



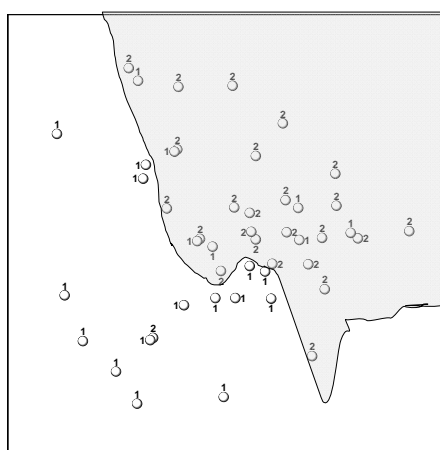
Burglary



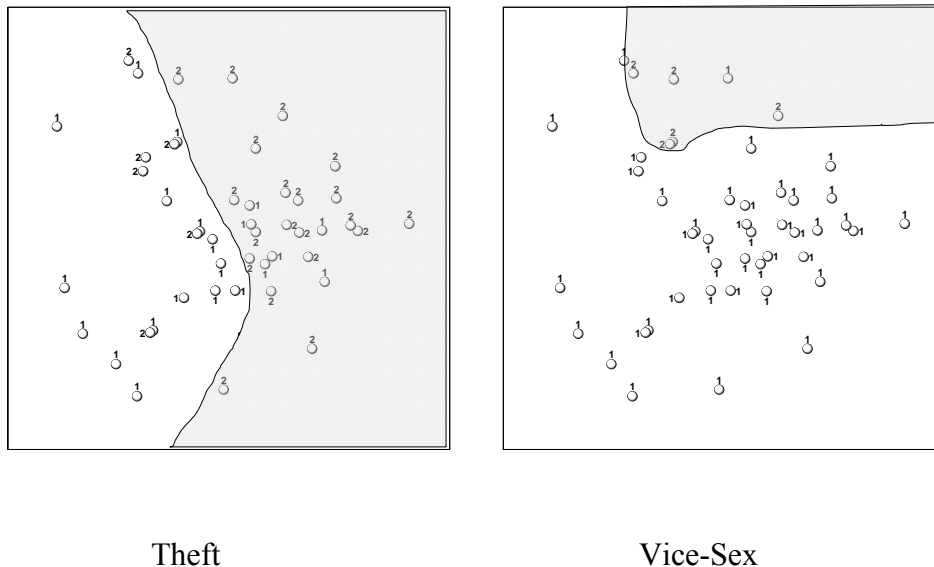
Damage



Weapon



Disorder



**Figure 5.4.2: Multidimensional Scalogram Analysis Item Plots for each of the ten criminal conviction variables. Divisions are drawn to indicate where most cases demonstrating that variable are present.**

Points labeled with a 2 in the item plots indicate that that particular offense was present in that offender's profile and those labeled with a 1 indicate the absence of that offense in the profile. The shaded regions indicate where most offenders who committed that offense are located. Given the distinct regions evident in the item plots in Figure 5.4.2, it is possible to create an overall thematic plot summarizing how the variables within these regions are contributing to the configuration of offender profiles within the main plot.

Superimposing the divisions for the item plots in Figure 5.4.2 shows four areas where the variables overlapping in that region indicate four thematic groupings, occurring within the four quadrants of the main plot and these thematic groupings are represented in Figure 5.4.3:

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<p><i>Instrumental (Approaching: Violence)</i>  <b>Robbery, armed robbery</b></p>	<p><i>Violence/Instrumental (Property and Indirect Violence)</i>  <b>Theft, vice-sex, damage, disorder, weapon</b></p>
<p><i>Instrumental/Violence (Person-Oriented)</i>  <b>Sexual, assault</b></p>	<p><i>Violence/Instrumental (Against People and Property)</i>  <b>Sexual, assault, burglary, theft, damage</b></p>

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**Figure 5.4.3: MSA summary plot depicting thematic regions based on item plots analyses.**

In the upper left-hand quadrant of the plot, robbery and armed robbery strongly overlap with one another, which is in accordance with the findings of Trojan and Salfati (2009b, 2009c) who found a strong co-occurrence between these variables across the sample as a whole. These offenses are instrumental in that they clearly involve an identifiable goal, material gain, but the goal is pursued through more aggressive means compared to other instrumental offenses, such as theft, in that a person is directly confronted in robbery or armed robbery. Essentially, these offenses represent a blending of the violent/instrumental themes where a person is being targeted for instrumental purposes. Additionally, robbery and armed robbery, particularly when occurring together in the same offender's backgrounds, may be offenses that differentiate serial and single

offenders, as only one serial offender had armed robbery in their profile and a separate, sole serial offender had robbery in their criminal background profile.

In the upper right-hand quadrant is an instrumental offense (theft) and indirectly violent offenses (damage, weapon, vice-sex, and disorder), none of which involve the direct targeting or confrontation of people as victims. Instead these offenses are purely instrumental, indirectly violent, or involve violence against an object. However, while divisions are evident in the item plot for theft (refer to Figure 5.4.2), it is not as clear as other offenses and occurs over a wide area on the right side of the plot. This suggests that it may be a core offense for both single and serial offenders and less useful in differentiating between them. This offense has been identified in a large proportion of single and serial offenders by other studies (e.g., Hickey, 2006; Soothill et al., 2002).

Across the bottom of the plot, sexual and assault offenses strongly overlap, and as indicated by the main plot in Figure 5.4.1, most of the serial offenders occurred in this region. This reflects the findings of Trojan and Salfati (2009c) who found that both of these offenses were proportionally more likely to be found among serial offenders.

However, in the lower left-hand corner only sexual and assault offenses overlap, while in the lower right-hand region of the plot assault and sexual offenses overlap with three other offenses, damage, burglary and theft offenses. Essentially, the lower left quadrant of the plot contains offenses that directly target people as victims, for either instrumental (sexual) or violent (assault) purposes. In contrast, the lower right quadrant contains a mixture of instrumental (i.e., sex, burglary, theft) and violent offenses (i.e., assault, damage) that target both people and property. This is reflective of the debate as to whether sexual offenses are truly instrumental or violent. It is possible that the patterns depicted in the MSA in Figure 5.4.1 and the item plots in

Figure 5.4.2 are indicative of two sub-groups of offenders with a history of sexual offenses in which one group primarily commits offenses that directly target people as victims and a second who commits these offenses within a broader background of purely instrumental offenses and greater versatility in offending overall.

## **5.5 DISCUSSION**

The aim of the current study was to examine how offenders differ from one another on the whole as well as how single and serial offenders differ when they were directly compared across multiple variables that may be important in differentiating between them. Because the current study sought to directly compare individual offenders across their criminal backgrounds to identify thematically similar groups of individuals in a manner not done in prior studies, an MSA was conducted on offender profiles composed of ten offense variables across a sample of serial and single homicide offenders. By combining the variables into profiles it was possible to examine how criminal history offenses truly co-occur in specific offenders' backgrounds and if meaningful patterns exist according to the relationship between offenders to gain a fuller understanding of the theoretical differences and similarities between the criminal histories of single and serial homicide offenders.

The results demonstrated four thematic regions in which offenders' profiles co-occurred according to a blending of violent and instrumental offenses, but were also distinguished by whether offenses involved a person as the target of the offense or did not involve people as victims. In other words, the results indicated that the thematic groupings were differentiated according to the degree of violent offenses it contained, and whether those violent offenses were direct or indirect, and whether the offenses were person-oriented, more object/property oriented, or both.

Additionally, the results suggest that further sub-groups may exist among offenders within a single offense. Individuals who had sexual and assault offenses in their profiles strongly co-occurred with one another. However, these offenders were further sub-divided into two groups – offenders in which only these offenses were present and offenders who also committed other instrumental and violent offenses, not involving a person as a victim. This latter group of offenders demonstrates a mixture of directly violent offenses (assault), violent offenses against property (damage), person-oriented instrumental offenses (sexual) and instrumental offenses against property (theft, burglary). Moreover, because serial offenders were shown to typically have criminal history profiles that were unique from other offenders and as generally falling into these two thematic regions, they may be more applicable to profiling techniques provided that in addition to discriminating between their criminal histories, their crime scenes are also easily distinguished. A focus on prior sexual offenses and how these offenses co-occur with violent or other instrumental offenses may be best suited for differentiating offenders and has been suggested by prior studies (e.g., Schlesinger & Revitch, 1999). This highlights the importance of considering patterns in offenders' criminal histories based on how offenses and individuals co-occur rather than examining them in their singularity. However, a group with a high degree of versatility in offending that blends instrumental and violent themes, also involving offenses with a person or object-focus, would be difficult to profile using criminal history unless they show a high degree of consistency in their crime scene actions that effectively differentiate them from other offenders. Unfortunately, because the current study only compared offenders in terms of their criminal history profiles and does not link prior offending to homicide crime scene behavior, this will have to be left to future studies.

Future studies should begin to directly link the patterns in offender criminal history identified in the current study and elsewhere (e.g., Salfati, 2000; Trojan & Salfati, 2009b; Trojan & Salfati, 2009c) to the offenders' crime scene behaviors. This would include examinations of whether there is continuity in the themes present in both an offender's criminal history and their crime scene behavior at a subsequent homicide crime scene. Full thematic continuity would be evident if offenders who predominantly commit prior instrumental offenses engage in instrumental crime scene behaviors, such as stealing from or sexually assaulting the victim, and those with more violent criminal histories commit more hostile and violent actions at the homicide scene, such as excessive wounding to the victim. If it is determined that offenders with thematically similar criminal backgrounds also commit similar behaviors at the homicide crime scene(s), the use of criminal history as a tool to narrow down suspect pools in terms of offender profiling may be possible.

The findings of the current study in relation to differentiating serial and single homicide offenders should be treated with some caution given the small sample of serial homicide offenders. As stated previously, the current study was exploratory in nature and sought to identify basic trends in offender criminal history and how homicide offenders are similar to one another. Part of this process was to view the issue in a new way using MSA to identify thematically similar groups of individuals and the results demonstrate this to be an appropriate methodology. Previous studies have argued that even sample sizes as small as 15 can produce stable structures in an MSA (Wilson & Canter, 1990; Wilson & Mackenzie, 2000) so it may be particularly appropriate to examinations of offenses that are admittedly rare, such as serial homicide. Because the current study sought to understand general patterns in the criminal histories of homicide offenders, the findings at least provide a picture of thematic groups of

homicide offenders in general. However, to refine the thematic patterns identified here and to more fully differentiate between single and serial homicide offenders, future studies should re-examine the framework of the current study using larger samples of serial homicide offenders.

## 5.6 CONCLUSION

By comparing single and serial offenders directly in terms of ten variables that may be important in refining their respective differences, the analyses in Chapter 5 point to the possibility of an additional facet to the violent/instrumental framework where offenders are further differentiated according to whether their offenses involve a person as a victim. These results also suggest that there may be sub-groups of offenders, particularly serial offenders who directly target people as victims in the context of both instrumental and violent offenses versus those showing a more versatile pattern of prior offending.

This possibility is particularly interesting due to the fact that one of the original four theoretical frameworks in Chapter 1 – the circumplex model – anticipated the possibility that offenders may be differentiated within an overall framework through an extra dimension of person versus object oriented offenses. As discussed in Chapter 1, a circumplex model essentially proposes that offenders will generally fall into different thematic regions but takes into account gradations within these themes as in a continuum. In other words, offenders can fall anywhere along this continuum but will be principally differentiated according to how they are oriented around an additional dimension – such as whether their prior offenses are person or object oriented. However, a circumplex was not found when the co-occurrences of *variables* were examined as per Aim 2 of the overall study, but the person/object element was hinted at in the current chapter that compared *offenders*. This finding suggests that there may be a missing facet in the violent/instrumental framework proposed in Chapter 4. However, due to the small sample

of serial offenders who were suitable for analysis, this possibility could not be explored further. Although the overall project is largely exploratory due to the lack of research directly comparing single and serial offenders in terms of thematic patterns in their criminal histories, the present results should be considered with caution and only be taken to indicate general trends that can provide a foundation for future studies that attempt to reaffirm or refute the frameworks presented thus far.

The totality of the results presented in Chapters 2 through 5, deal with the central aim of the overall project – to identify patterns in the prior offending of serial and single-victim offenders. In terms of the canonical equation (A to C equation) proposed by Canter (2000) where A refers to the actions committed by an offender at the crime scene and C refers to the characteristics of that offender, only one portion of the equation has been addressed by the analyses up to this point – criminal history as an offender characteristic. What remains of the current study is to examine the offenders' behaviors at the homicide crime scene(s) in order to determine if thematic links can be drawn between offender criminal history and the physical, objective behaviors committed by single and serial offenders at their respective crime scenes.

## **CHAPTER 6: LINKING CRIMINAL HISTORY TO CRIME SCENE BEHAVIOR IN SINGLE-VICTIM AND SERIAL HOMICIDE: IMPLICATIONS FOR OFFENDER PROFILING**

Trojan, C. & Salfati, C.G. (2009). *Linking criminal history to crime scene behavior in single-victim and serial homicide: Implications for offender profiling*. Manuscript submitted for publication.\*

### **6 INTRODUCTION TO CHAPTER**

The final analyses presented in Chapter 6 deal with Aim 3 of the overall project – whether individuals with thematically similar criminal histories commit thematically similar behaviors at the subsequent homicide(s). These analyses unfold in two parts. The first portion of this chapter seeks to identify what patterns are evident in the crime scene behaviors of single-victim and serial homicide offenders and any differences that may exist between these two groups of offenders. As the analyses of criminal history progressed through the preceding chapters, Aim 3 of the overall study was refined to hypothesize that a single thematic framework could be applied to the crime scene behaviors of both single-victim and serial offenders. However, as with criminal history, it was further anticipated that single and serial homicide offenders would differ in terms of where each particular group of offenders' emphasis lied within the overall framework of crime scene behaviors.

Once a framework of crime scene behavior is developed, the second portion of the analyses, and ultimate goal of the overall project, are conducted to determine if there is a link between prior offending and current homicide behavior. This final objective was undertaken through the direct examination of individual offenders' criminal histories and crime scene thematic classifications to support or refute whether profiling homicide offenders based on their crime scene behaviors, using criminal history as a discriminator, is in fact possible.

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\* This chapter is currently under review with the journal *Homicide Studies*.

## 6.1 LITERATURE REVIEW

More than fifty years ago in his influential study of homicide, Wolfgang (1958) noted that homicide was not an aberrant even in an otherwise non-criminal lifestyle and that most who murder have an established criminal history at the time the homicide is committed. This contention has been repeatedly upheld since Wolfgang's study in examinations of both single-victim homicide (e.g., Broidy et al., 2006; Delisi & Scherer, 2006; Soothill et al., 2002) and serial homicide (e.g., Arndt et al., 2004; Canter et al., 1996; Hickey, 2006). Some early behavioral typologies of homicide offenders have even made specific statements about criminal offenses likely to appear in the backgrounds of different 'types' of offenders (see Keppel & Walter [1999] for example), but direct empirical examinations of the patterns in the prior offending of homicide offenders have been slow to develop. The prevalence of a prior criminal record among most homicide and serial homicide offenders suggests that prior offending may be particularly useful to investigators in terms of offender profiling – the use of behavioral evidence at a crime scene to derive characteristics of the offender (Canter, 2000) – as intended by many early typologies. The preceding criminality of homicide offenders is a highly objective offender characteristic that could be quickly acted on by investigators via searches of existing criminal justice databases to narrow down suspect pools using the offender's likely criminal history as a discriminator. In order to accomplish this, however, several criteria need to be met.

First, it must be established that meaningful criminal history patterns in fact do exist that can effectively distinguish between offenders in terms of their criminal backgrounds. Secondly, because offender profiling rests on what Canter (2000) refers to as the A to C equation – where A are the actions committed by the offender at the crime scene and C are their personal or background characteristics – patterns must also exist in offenders' crime scene behaviors. Once

patterns have been identified at both ends of the equation, it will be possible to determine if prior offending and current crime scene behaviors can be linked in a manner useful to investigators.

The current study deals primarily with the second issue by examining patterns in crime scene behaviors among single-victim and serial homicide offenders. Additionally, in order to complete the A to C equation (Canter, 2000) the current study examines how prior offending relates to crime scene behaviors. In this effort, single-victim and serial homicide offenders are directly compared. It is appropriate to examine these offenders together to fully understand how they are similar in terms of their overall criminal offending patterns, both in their background and current crime scene actions, because their similarities and differences will have important theoretical implications in terms of differentiating these offenders and practical implications for using criminal history to profile single-victim versus serial homicide offenders.

### **6.1.1 Offender Criminal History**

Wolfgang (1958) noted that homicide offenders in general are unlikely to be a first time offender when the homicide is committed. In fact, among single-victim offenders, multiple studies have consistently found that more than 50% of homicide offenders have a recorded criminal history prior to the homicide (e.g., Broidy et al., 2006; Delisi & Scherer, 2006; Dobash et al., 2007; Soothill et al., 2002; Wolfgang, 1958). A similar contention regarding serial murder was made by Hickey (2006) who stated that instead “of being faced with a new breed of offender, the criminal justice system may have failed to adequately deal with the “old” criminal before his career of serial killing began” (p. 166). Again, studies have found prevalence rates for serial homicide offenders’ criminal histories as high as 51% (Arndt et al., 2004) and 75% (Canter et al., 1996). Hickey (2006) found that 68% of his sample showed a combination of prior criminal and antisocial behaviors. These statistics show that serial and single offenders are both

likely to have a recorded criminal history and they may be more similar in their criminal backgrounds than previously thought. In fact, Wright et al. (2008) found that the criminal histories of single and multiple homicide offenders did not significantly differ and that multiple homicide offenders do not specialize in murder. At the present time, however, it is unclear as to exactly what can be ascertained from the prior offending of those who commit homicides and those who murder multiple victims serially in terms of its application to later homicide crime scene behavior.

Most early typologies of homicide and serial homicide offenders examined prior criminal offenses in their singularity – listing specific offenses likely to appear in the backgrounds of different offender ‘types’. This approach does not account for whether the named offenses are the only offenses likely to be present in a particular ‘type’ of offender’s background or may mislead investigators when other offenses are present in a case that are not listed in that type. To avoid this pitfall, a study of offender criminal history was recently undertaken that sought to identify patterns in prior offending according to how offenses *co-occurred* in cases across a sample of homicide offenders (Trojan & Salfati, 2009c).

Trojan and Salfati (2009c) examined the prior convictions of a sample of single-victim and serial homicide offenders to determine if patterns of offense specialization were evident and what differences, if any, existed between single and serial offenders. This study measured criminal specialization according to themes – groups of offenses linked by a common underlying psychological or theoretical construct (Canter, 2000) – as opposed to considering someone a specialist only if they committed the same legally defined offense repeatedly. Using this thematic approach, Trojan and Salfati (2009c) found that a single thematic framework could be used to conceptualize the prior convictions of both single and serial homicide offenders in that two

groups of offenses co-occurred across cases in the sample, those pertaining to a violent versus instrumental theme. The violent theme contained offenses that involved direct violence against a person, such as assault and domestic violence, those involving indirect violence without physical contact, such as harassment, and violence against property, such as criminal damaging (Trojan & Salfati, 2009c). The instrumental theme was comprised primarily of offenses aimed at monetary or material gain with or without confrontation of a victim, such as theft, burglary, and robbery, but also contained offenses that were instrumental to the offender in that they allowed the offender to avoid something negative, such as evasion of arrest. Furthermore, a higher proportion of serial offenders were convicted of the majority of the instrumental offenses and a higher proportion of single-victim offenders were convicted for most of the violent offenses (Trojan & Salfati, 2009c). This led the authors to hypothesize that serial homicide offenders would be more likely to specialize in instrumental offenses. To address this, each case was individually examined and an offender was allocated to one theme over the other if they had at least two times the number of convictions in the dominant theme (Trojan & Salfati, 2009c). Using this approach, 78% of serial offenders and 72% of single-victim offenders could be allocated to a single dominant theme; the remaining offenders were considered generalists (Trojan & Salfati, 2009c). While the violent/instrumental framework could be applied to both serial and single offenders, important differences were found in terms of the degree of specialization for each theme. Single-victim homicide offenders were almost equally likely to specialize in instrumental (52%) or violent (48%) offenses, but the majority of serial homicide offenders were allocated to the instrumental theme (86%) (Trojan & Salfati, 2009c), suggesting that serial offenders may demonstrate offending patterns that are more goal-oriented compared to single-victim offenders, but whether such a pattern is evident in their crime scene behaviors remains to be seen.

Examining patterns in the prior offending of single and serial homicide offenders in isolation has its merits in that it contributes to our overall understanding of the criminal trajectories of these offenders and their progression to homicide. However, the overall criminal offending patterns both preceding the homicide as well as the behavioral patterns that emerge at the homicide crime scene would allow us to also understand the relationships between prior and current actions that could have practical applications in addition to its theoretical implications. As the research cited here has shown, serial and single-victim offenders have both similarities and distinct differences in their criminal history that can be used to begin the process of fully differentiating these individuals and it is at least reasonable to expect similar findings in regards to the behaviors committed at their respective homicides.

### **6.1.2 The Nature of Single-Victim v. Serial Homicide**

National homicide statistics demonstrate that approximately 23% of homicides are committed in the course of another felony (i.e., robbery, rape, burglary, etc.) and 44.4% of homicides occur during the course of an argument (Federal Bureau of Investigation (FBI), 2004). General trends indicate that female victims are significantly more likely to be murdered by a current or former intimate partner, while males are more likely to be murdered by an acquaintance or friend (Bureau of Justice Statistics (BJS), 2006). This indicates that the average single-victim homicide arises from an interpersonal dispute occurring between individuals known to one another or suggests a more impulsive and reactive violent response to a specific situation. Therefore, single-victim homicide offenders may primarily display impulsive or hostile crime scene actions that are centrally aimed at inflicting harm upon the victim, and rarely progressing beyond the physical act of murder as compared to serial homicide offenders who may display a higher degree of control or cognition in their behaviors.

Studies of large samples of serial homicide have suggested that it is predatory and highly likely to target strangers (e.g., Godwin, 2000; Hickey, 2006), which may be reflections of the means by which offenders rationally choose to satisfy their needs by minimizing the risk of detection and maintain control of their crimes. In other words, serial offenders may be more likely to go beyond the physical process of killing the victim either to satisfy an ulterior goal or to distance themselves from the victim and homicide, physically or psychologically. This suggests that serial homicide may best be viewed as less impulsive than single-victim homicide, with a higher degree of control exhibited in their homicide behaviors.

In this sense, it is possible that serial and single-victim homicide offenders may be conceptualized within a single framework of crime scene behaviors that progresses from hostile behaviors where the central focus is simply to harm the victim to much more controlled actions where the offender is acting at a more cognitive level engaging in behaviors that go above and beyond killing the victim. As outlined above, however, differences would be expected between single-victim and serial homicide offenders in terms of where their emphasis lies within this framework. If such patterns in crime scene behavior are identified, it would then be possible to link individual offenders' criminal history to their crime scene behaviors to determine how these two ends of the behavioral equation relate to one another. Building upon the assumptions of early behavioral typologies that included prior offending as characteristic of various types of offenders, previous studies have begun to lay a foundation for our understanding of the link between prior criminal offending and homicide crime scene behaviors.

### **6.1.3 Early Approaches to Linking Criminal History to Offender 'Types'**

Keppel and Walter (1999) named specific offenses likely to appear in the backgrounds of each homicide offender type in their typology. Anger-excitation murderers would have a record

of offenses reflective of paraphilias or drug-related charges and anger-retaliatory murderers would display a more violent background with prior domestic violence and assault offenses, as well as reckless driving. The remaining two offender types, power-assertive and power-reassurance, would have a history of burglary, theft, and robbery, and larceny, offenses involving fetish behaviors, and unlawful entry respectively. To date, these assumptions regarding offender criminal history have not been empirically tested. Furthermore, while the list of offenses assumed to differentiate offenders in Keppel and Walter's (1999) typology is specific, base rates for the presence of these offenses in either homicide or serial homicide in general or for each type of offender compared to the others are not provided by the authors. Some statistics suggest that several of these offenses may be common among both serial and single homicide offenders. Hickey (2006) found that nearly half (45%) of his sample of serial homicide offenders had prior convictions for theft, burglary, or robbery and Godwin (2000) found the same offense convictions in more than 60% of his serial homicide sample. Soothill et al. (2002) found a similar result for single-victim homicide offenders. If these offenses are present in the backgrounds of many single and serial homicide offenders, they are of limited utility in understanding how offenders are different, because they characterize the typical offender.

Other early behavioral typologies have given a limited account of how prior criminal behavior plays a role in the progression to homicide, focusing primarily on offenses assumed to be related to the motivation for the murder. For example, in an examination of sexual homicide by Ressler et al. (1995), a typology was proposed that sought to differentiate between crime scene types in terms of the degree of organization and disorganization present at the crime scene that was assumed to correspond to similar organized and disorganized personal characteristics. In looking at the offenders' backgrounds, the authors found that of the 34 single and multiple victim

offenders, 13 had four or more prior sexual assault convictions (Ressler et al., 1995). However, this statistic groups both single and serial sexual offenders together without differentiating between them. Again, if sexual assault is likely to be present in both groups, then it will be of limited utility in identifying unique patterns in these offenders' criminal histories that could be used in profiling. Moreover, the authors noted behavioral characteristics of each type of offender that could potentially be used to discriminate their respective criminal histories, but they did not extend these homicide crime scene behaviors to past criminal behavior. For instance, it is stated that organized offenders are likely to use alcohol during the commission of the crime (Ressler et al., 1995), but did not state whether or not these offenders may have prior arrests or convictions for alcohol-related offenses. Additionally, the authors cited fire-setting (28%), destruction of property (39%), stealing (56%), and assault on adult victims (84%) as existing in the backgrounds of sexual murderers but do not extend this information to the differentiation of organized and disorganized offenders or the relation to crime scene behaviors. After subsequent empirical tests of this model, as well as an alternate behavioral typology (Holmes & Holmes, 2002), failed to provide empirical support for the typologies' ability to effectively differentiate between the proposed types of offenders/offenses (see Canter et al. [2004] and Canter & Wentink [2004] for a discussion), new research began to emerge from within the field of Investigative Psychology (Salfati, 2009) out of the recognition for the need to empirically test models of homicide and serial homicide. These studies sought to improve behavioral profiling through the development of testable, empirically based models of crime scene behavior and a number of studies were conducted that examined a variety of violent offenses, including homicide and serial homicide (e.g., Bateman & Salfati, 2007; Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003).

In one of the earliest attempts to use a thematic approach in linking crime scene behavior to offender backgrounds, Salfati (2000) extended Feshbach's (1964) model of hostile and instrumental aggression to homicide and found that homicide crime scenes could be differentiated "in terms of the expressive and instrumental role the victim had to the offender" (p. 274). Expressive homicides centered on the victim as a person and instrumental homicides centered on the victim as an object to be used to satisfy some ulterior goal (Salfati, 2000). Salfati (2000) then examined offender characteristics in terms of instrumentality and expressiveness and found that instrumental backgrounds were partially defined by a co-occurrence of criminal history variables, including theft and sexual offenses. Although the legal classifications of these offenses differ, Salfati (2000) suggested that they are thematically similar in that both "are invasive on the victim and the offender stands to gain instrumentally from the crime" (p. 281). This highlights how a thematic approach can provide a more detailed picture of overall offending by focusing on how criminal offenses co-occur rather than examining them in isolation. This overcomes the problem of using rigid lists of offenses that overlook underlying theoretical links between different legally defined offenses and may be a more appropriate approach in identifying the relationship between prior and current offending behavior.

The discussion to this point suggests that there is some reason to believe that criminal history will be reflected in current homicide crime scene behavior. However, in a study of rape in the U.K., Mokros and Alison (2002) found that offenders who displayed "some resemblance in their criminal histories" did not commit their rapes in a similar manner (p. 39). It is unknown at present if the same statement applies to examinations of homicide. Trojan and Salfati (2009c) demonstrated that there are patterns in the prior offending of single-victim and serial offenders that can be used to differentiate offenders' backgrounds from one another. The current study

examines whether similar patterns are evident in the actions committed by offenders at their subsequent homicide crime scene(s) that can then be used to create a bridge between prior criminal offending and current crime scene behaviors.

## **6.2 AIMS OF THE CURRENT STUDY**

The current study aims to determine if single-victim and serial homicide offenders can be conceptualized along a single framework of crime scene behavior and to determine if offenders are primarily differentiated by the degree to which they dominate within the thematic regions identified. The second aim of this study is to individually link each offender's criminal history, as found by Trojan and Salfati (2009c) to the offender's homicide crime scene behavior to identify whether or not their prior offending and current behaviors are thematically similar.

## **6.3 METHODS**

### **6.3.1 Data Sources, Selection Criteria and Samples**

Because the current study builds on the findings of Trojan and Salfati (2009c) in trying to link criminal history to crime scene behavior, the same samples are used.

Serial homicide cases were drawn from closed, fully adjudicated state and local cases that were contributed from law enforcement agencies from around the country for the purpose of research. All identifiers, including names of victims, suspects, offenders, officers, departments and correctional agencies, are removed. Only aggregate data are reported on. Only cases involving a single offender and a minimum of three victims, at least two of whom were deceased, were included in the sample. Finally, the homicides had to occur over time in discrete, separate incidents and to have occurred without the direction of any criminal or political organization in order to exclude mass murderers and 'contract' killers from the sample.

Single-victim homicide cases were collected from the homicide case files of the Cincinnati Police Department. Cases were drawn from all homicides occurring in that city between 1997 and 2006. To be selected for inclusion, each case had to involve a single offender and a single targeted victim and be resolved by a conviction.

After data collection, several cases were excluded from the single-victim sample and from the serial homicide sample because it was determined that the cases violated one of the above criteria of inclusion. This resulted in initial samples of 17 serial homicide offenders and 137 single-victim homicide cases. For analyses, cases were further selected according to two criteria. First, because criminal convictions were examined instead of arrests, offenders with no prior convictions were dropped from both samples. Juvenile offenders were removed from the single-victim sample because a large proportion of their offenses were status offenses, such as truancy, which do not have equivalents in adult populations making them unsuitable for comparison to the remaining cases; there were no juvenile offenders in the serial homicide sample. This resulted in final samples of 9 homicide series and 122 single-victim homicides and comprised the samples used in the current analyses. It is recognized that the serial homicide is small. However, the overall goal of the study by Trojan and Salfati (2009c) and the current study was to explore trends and patterns in prior offending, current crime scene behavior, and the links between them that could aid in the development of preliminary frameworks to address a generally neglected topic in the offender profiling and investigative psychology literature in a new way and to guide future studies.

Despite the small number of homicide series that could be used in the current study, these 9 series involved a total of 45 victims. This provided a sufficient sample of crime scenes that could be examined in the current analyses of crime scene behaviors. All crime scenes were

examined in the analyses conducted to answer Aim 1 of the current study to identify patterns in crime scene behavior across cases in the sample. However, in order to answer Aim 2 that attempts to link criminal history to crime scene behavior, the degree of consistency among serial homicide offenders across their series had to be taken into consideration. In other words, to link the offenders' criminal history thematic classification to a thematic behavioral crime scene pattern, a single theme had to be dominant across their series. The number of victims per offender in the sample ranged from three to six, but to allocate a serial offender to a single dominant theme for their entire series, only the first three in each series were used in this portion of the study. This approach was adopted for several reasons. The first three homicides in the series were chosen in part due to necessity (one offender had committed a total of only three homicides). The first three homicides in a series are important from an investigative standpoint in terms of linking crimes early in the series before additional victims accumulate (e.g., Bennell & Canter, 2002; Salfati & Bateman, 2005; Snook et al., 2005). Finally, a common series length was used for all offenders, because behavior can be expected to change over time (Salfati & Bateman, 2005) and using different series lengths can bias the results by giving too much weight to more prolific serial offenders that may display increased or decreased behavioral stability over time (Bennell & Canter, 2002; Bennell & Jones, 2002). For these reasons, the current study allocated the nine serial homicide cases to a dominant crime scene theme for the series as a whole if two of the first three crime scenes were of the same thematic type.

### **6.3.2 Data Collection and Variables**

All data was collected using the Homicide Profiling Index (HPI) version 3 and version 4 (Salfati, 2005). The HPI is a coding dictionary comprised of more than 200 variables across a wide range of items such as crime scene behavior, offender and victim background

characteristics, motivation, post-crime behaviors, offense timing and victim-offender relationship (Salfati, 2005). It contains detailed variable definitions and coding instructions to ensure confidentiality of the data collected and coding reliability. The HPI was developed specifically to be used with homicide case files and has shown inter-rater reliability ratings as high as 89% (Salfati, 2005).

Because single-victim and serial data was collected at two different points in time, two versions of the HPI were used. HPIv3 was used to collect single-victim data and HPIv4 was used to collect serial homicide data. The use of two different versions of the HPI is not problematic because there were no substantive changes to the definitions of the variables used in this study between the HPIv3 and HPIv4.

The HPI uses a numerical coding scheme that helps to ensure the confidentiality of the information collected given the sensitive nature of the information contained in a homicide case file. A dichotomous coding method is used for most variables, which has been shown to enhance reliability of data collection (Canter & Heritage, 1990; Salfati, 2005), where variables are scored as either absent (0) or present (1). Variables that cannot be coded according to a dichotomous coding scheme are made categorical and a number is assigned to each category.

The variables included in the HPIv3 and HPIv4 were selected because they had been identified as important in homicide research (see Salfati [2005] for a discussion) and the crime scene variables in the current study were selected to maintain consistency with prior thematic studies of homicide and serial homicide (e.g., Salfati, 2000; Salfati, 2003; Salfati & Bateman, 2005; Salfati & Canter, 1999). However, only variables that were present in at least one single-victim *and* one serial homicide case could be included because these offenders were being directly compared in the same analyses.

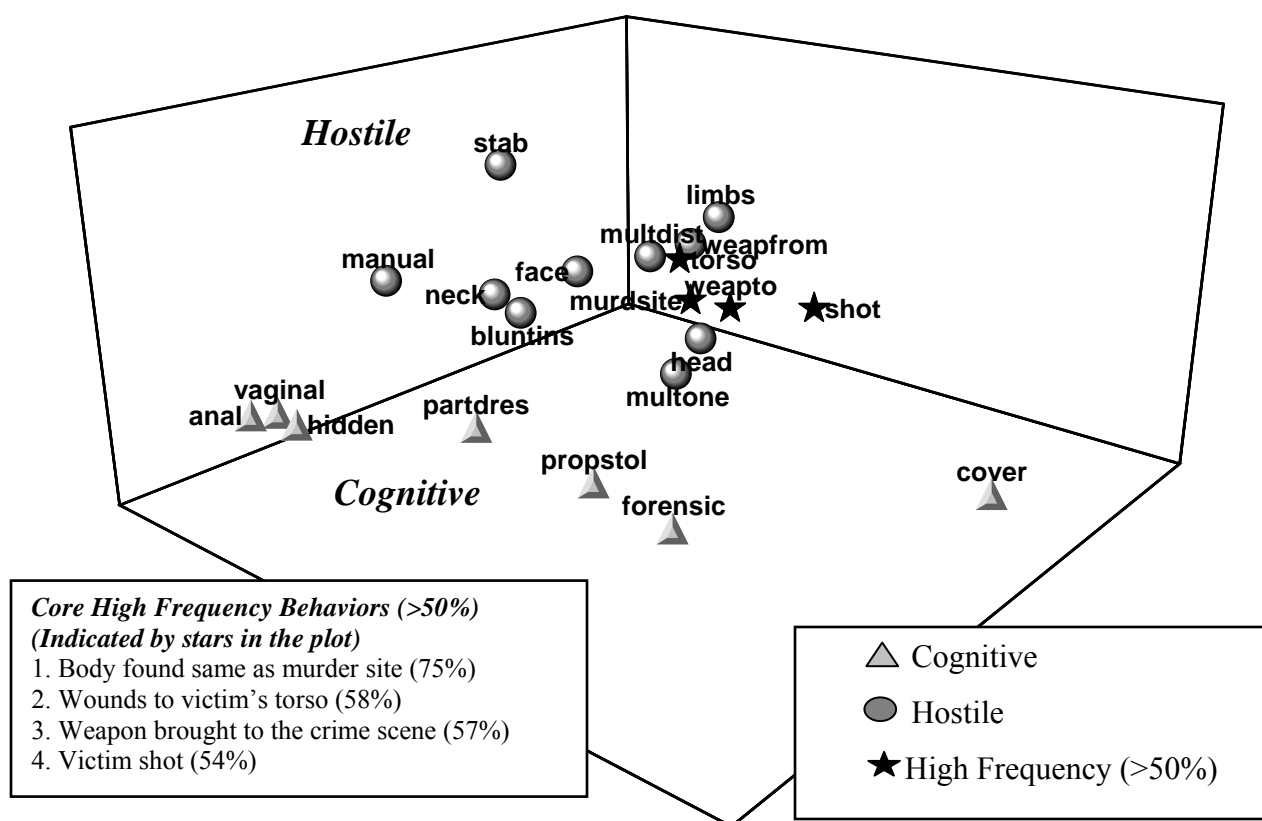
### **6.3.3 Analyses**

To identify thematic patterns in the crime scene behaviors used in this study, as per Aim 1, Smallest Space Analysis or SSA was used. SSA collectively analyzes all variables simultaneously and produces a geometric output of the variables' relationships to one another (Canter & Heritage, 1990). This plot is a visual representation of an underlying matrix of association coefficients and the rank order of these coefficients appear as distances between variables in the geometric space (Salfati, 2000). The relationship between variables is interpreted by examining the physical space between the variables, which are represented as points in the plot. The closer two points occur in the plot, the greater the likelihood of their co-occurrence in any given case in the sample; those points (variables) that occur farther apart are less likely to co-occur (Canter & Heritage, 1990). Variables that occur in the same region of the plot share a common underlying theme (Canter & Heritage, 1990). How well the visual plot represents, or 'fits', the underlying association matrix is measured by the coefficient of alienation and a coefficient of less than 0.2 is considered a good 'fit' (Salfati & Bateman, 2005).

## **6.4 RESULTS**

### **6.4.1 Aim 1: SSA of Crime Scene Behaviors**

In order to answer Aim 1 of the current study, whether a single thematic framework could account for crime scene actions of single-victim and serial homicide offenders, an SSA was run on the combined samples of offenders. The resulting SSA is seen in Figure 6.4.1.



**Figure 6.4.1: Smallest Space Analysis of Crime Scene Behaviors: SSA showing thematic division between hostile crime scene actions aimed at killing the victim and cognitive crime scene actions going above and beyond killing the victim. Coefficient of alienation = 0.15467.**

As stated previously, each of the labeled points in Figure 6.4.1 represents one of the crime scene variables included in the analyses. Variables occurring closer to one another are more likely to co-occur in a given case and those in the same region share a common underlying theme (Canter & Heritage, 1990). In accordance with Aim 1, a thematic division is evident in the plot between actions that are hostile, aimed at direct harm to the victim, and cognitive actions that go above and beyond killing the victim.

### 6.4.1.1 Hostile Crime Scene Behaviors

The variables in this region involve the infliction of direct harm to the victim in some way and how the victim was killed, where they were wounded, and how the wounds were inflicted. According to Feshbach (1964), hostile aggression is centrally aimed at inflicting harm to a victim and this concept of hostile/expressive aggression introduced by Feshbach was extended to studies of homicide by several authors (e.g., Block, 1977; Block & Block, 1993; Block et al., 2000; Salfati, 2000; Salfati & Canter, 1999).

Examination of the basic variable frequencies, shown in Table 6.4.1, helps to understand the general nature of crime scene actions in this sample in terms of the framework.

**Table 6.4.1: Crime scene actions**

<i>% Occurrence</i>	<i>Label</i>	<i>Variable Description</i>	<i>Theme</i>
≥ 50%	murdsite	Body found at same location as murdersite	...
	weapto	Offender brought weapon to the scene	...
	shot	Victim shot	...
	torso	Wounds to the torso	...
29 to 49%	face	Wounds to the face	Hostile
	head	Wounds to the head	Hostile
	limbs	Wounds to the limbs	Hostile
	multdist	Multiple wounds distributed	Hostile
	weapfrom	Weapon from crime scene	Hostile
17 to 28%	stab	Victim stabbed	Hostile
	manual	Manual wounding	Hostile
	bluntins	Blunt instrument used	Hostile
	neck	Wounds to the neck	Hostile
	multone	Multiple wounds to one body area	Hostile
< 17%	anal	Anal penetration	Cognitive
	vaginal	Vaginal penetration	Cognitive
	hidden	Body hidden/buried	Cognitive
	partdres	Victim found partially dressed	Cognitive
	propstol	Property stolen from victim	Cognitive
	forensic	Remove or avoid leaving forensic evidence	Cognitive
	cover	Victim's body covered	Cognitive

All of the hostile variables occurred in 17-49% of cases in the sample, demonstrating they are fairly common features of the homicides in the sample. Moreover, those behaviors occurring in roughly one-third to one-half of cases are more frenzied hostile actions indicating a sudden attack on the victim using a weapon available at the scene, attacking the more vulnerable parts of the victim's body, and inflicting multiple wounds to different parts of the body. Collectively, these behaviors can be taken to indicate a sudden attack arising during the course of some sort of interpersonal dispute. As previously stated, statistics show that 44% of homicides occur during the course of an argument (Federal Bureau of Investigation, 2004) and what may be evident in this portion of behaviors is that most homicides arise from situational influences to which the offender reacts aggressively. However, due to the fact that these actions occur in nearly one-third of the homicides, they are less useful in differentiating between homicide offenders but do demonstrate the situational element or reactive aggression (Cornell, Warren, Hawk, Stafford, Oram, & Pine, 1996) that has been shown by prior studies to exist in many homicides (e.g., Salfati, 2000; Salfati & Canter, 1999). The remaining hostile actions involve the manner of death or a more concentrated attack to a single area of the body.

#### *6.4.1.2 Cognitive Crime Scene Behaviors*

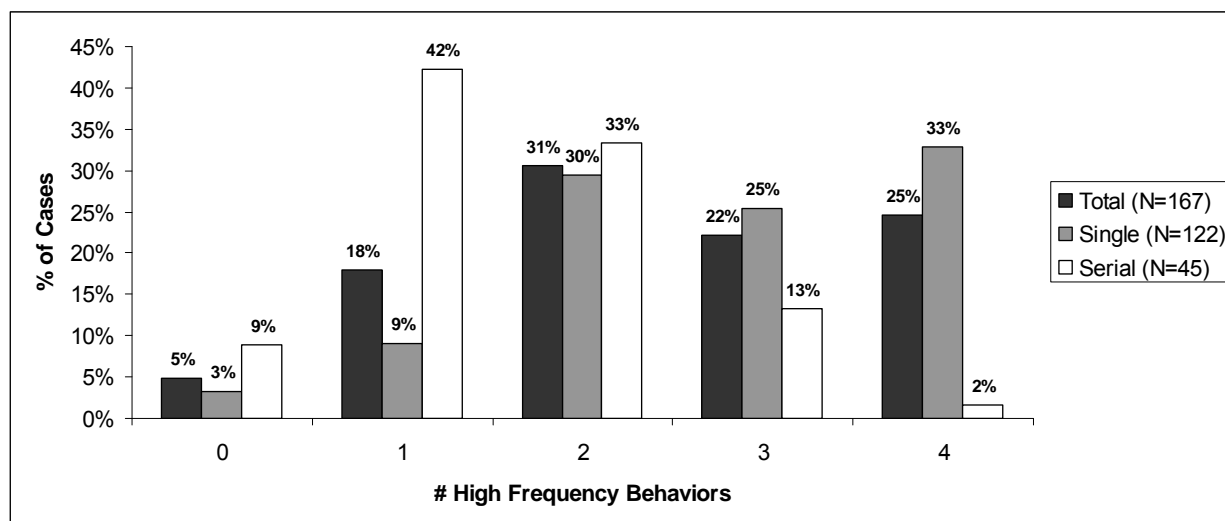
The remaining behaviors occurring in the lower portion of the SSA plot in Figure 6.4.1 are behaviors that are not necessary to complete the homicide but show the offender to be acting at a more cognitive level where they are taking their time to engage in behaviors beyond merely killing the victim. Several of these behaviors – vaginal/anal penetration and theft – suggest some sort of ulterior goal or motive of the offender or may be engaged in opportunistically upon completion of the homicide. The offenders also took care not to leave or to remove forensic

evidence from the scene, which again indicates that the offender is acting at a more cognitive level. Other behaviors involve physical or psychological distancing from the victim or from the homicide itself through hiding or covering the body (Salfati, 2003).

#### *6.4.1.3 Frequency Analyses and Serial/Single-Victim Comparison*

The frequency groups listed in Table 6.4.1 include four high frequency behaviors found in at least 50% of cases in the sample. This frequency structure demonstrates a continuum of behaviors from highly impulsive behaviors, such as leaving the body at the murder site and shooting the victim to more controlled homicide behaviors where the offender is acting at a more cognitive level. The impulsive high frequency behaviors are not useful in developing a thematic framework because they are characteristic of homicides in the sample in general and they cannot effectively differentiate between offenses to a useful degree (Canter & Wentink, 2004). However, subsequent analyses showed them to differentiate between serial and single-victim homicides to a significant degree.

Given the previously cited assumption that single-victim homicide is largely an impulsive act (e.g., Salfati, 2003) it would be reasonable to expect these high frequency behaviors to be more common among single-victim offenders. As seen in Figure 6.4.2, more than one-half of the single-victim sample committed three or all four of these impulsive behaviors compared to only 15% of serial homicide offenders.



**Figure 6.4.2: Distribution of high frequency behaviors across serial and single-victim crime scenes (N = 167)**

In fact, 12% of single-victim homicide offenders and none of the serial offenders committed *only* these high frequency behaviors. Conversely, more than one-half of serial offenders committed none or only one of these behaviors compared to only about 12% of single-victim offenders. Although only 45 crime scenes that were part of a series were included in the current analyses and a small sample limits the potential generalizability of the findings, the general trends highlighted in figure 6.4.2 are consistent with findings published elsewhere regarding the more impulsive nature of homicide (e.g., Block & Block, 1993; Salfati, 2003; Schlesinger, 2004).

To further examine potential differences between single-victim and serial homicide offenders, offender type – serial versus single – was treated as an external variable. This involves calculating proportional scores for each of the behaviors in the analyses to reflect the percentage of single-victim and the percentage of serial offenders who engaged in that particular crime scene action. As expected given the findings reflected in Figure 6.4.2, a higher proportion of single-victim offenders was found for all of the high frequency impulsive behaviors and three of

the hostile behaviors in the next frequency group, and serial offenders were proportionally more likely to commit *all* of the cognitive crime scene actions. A series of chi-square tests was run to test the significance of these relationships and single-victim offenders were significantly more likely to leave the body at the murder site ( $\chi^2(1) = 9.538$ , Fischer's Exact Test (FET) = .004), shoot the victim ( $\chi^2(1) = 21.497$ , FET < .001), injure the victim's torso ( $\chi^2(1) = 21.565$ , FET < .001), and injure the victim's limbs ( $\chi^2(1) = 5.540$ , FET = .024). In accordance with what was expected given the external variable analyses, serial offenders were significantly more likely to engage in *all* of the cognitive behaviors in the model (all FET < .05). Additionally, there were three hostile behaviors that were significantly more likely to be committed by serial offenders: using a blunt instrument ( $\chi^2(1) = 9.083$ , FET = .005), wounds to the neck ( $\chi^2 = 6.464$ , FET = .014) and multiple wounding to one body area ( $\chi^2(1) = 15.583$ , FET < .001); all remaining hostile behavioral relationships were not significant.

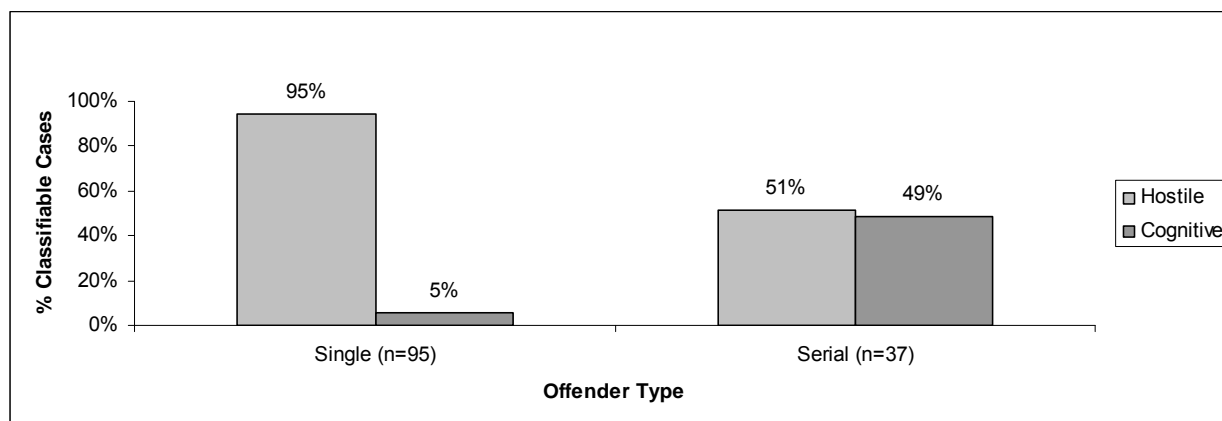
Taken collectively, the analyses thus far suggest that single-victim homicide is more likely to be highly impulsive compared to serial homicide that, in turn, is more likely to involve controlled, cognitive actions. In terms of differentiating the crime scenes of serial and single-victim offenders, the cognitive behaviors may be more useful than the hostile actions many of which are equally likely to be committed by serial or single-victim offenders. Given these findings it is reasonable to expect that when individual cases were examined to determine whether each crime scene could be allocated to a dominant theme, hostile or cognitive, serial crime scenes would be significantly more likely to be allocated to the cognitive theme.

#### *6.4.1.4 Thematic Dominance*

To determine if homicide crime scenes could be allocated to a single-thematic region in the cognitive/hostile framework, each of the 167 crime scenes was examined and a proportional

score was calculated for each theme reflecting the proportion of behaviors within that theme committed by the offender. The resulting proportional scores were compared and an offender was allocated to a single theme if they had at least two times the proportional score compared to the second theme. If a score did not meet this criterion, the scene was considered “mixed” or unclassifiable. Fifteen single-victim offenders committed only the high frequency behaviors and, therefore, were not used for this portion of the study. The inclusion of an objective criterion for allocating offenders to one theme over another is important because many early typologies were criticized for not including explicit criteria by which individuals were assigned to specific types when overlap between types occurred in a given case (Canter & Wentink, 2004). This particular cut-off criterion was selected to maintain consistency with previous thematic studies (e.g., Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004; Salfati, 2000; Salfati & Haratsis, 2001). (See Trojan and Salfati [2009a] for a complete discussion of this procedure and a discussion of alternative methods.)

The results showed that 87% of 152 crime scenes were allocated to a single, dominant theme; 89% of single-victim crime scenes (N =95) and 82% of serial offenders (N=37) were classifiable. Figure 6.4.3 shows the further breakdown of these classifiable crime scenes according to the percentage classified as hostile versus cognitive for serial and single-victim offenders.



**Figure 6.4.3: Distribution of classifiable crime scenes (N = 132)**

Single-victim offenders were overwhelmingly allocated to the hostile theme, while serial offenders were almost equally likely to be allocated to either theme. Despite this, of those allocated to the cognitive theme 78% were serial offenders and 22% were single-victim offenders, and this difference was statistically significant ( $\chi^2(1) = 34.836$ , FET < .001).

#### 6.4.1.5 Summary of Aim 1

Aim 1 of the current study was to determine if a single thematic framework could be used to conceptualize crime scene behavior and if serial and single offenders differed primarily in terms of their emphasis within the framework. The results demonstrated that the crime scene behaviors could be differentiated according to a hostile versus cognitive focus, where hostile actions centered on the infliction of harm to the victim and cognitive behaviors went beyond the physical murder. Secondly, a closer look at the frequencies of all crime scene behaviors revealed a continuum of actions where the behaviors progressed from highly impulsive behaviors down to more controlled actions. A similar continuum, referred to as a modulating facet, was found in a sample of U.K. homicide offenders by Salfati (2003). However, modulating facets are extremely rare in studies using SSA and the study by Salfati (2003) is the only example able to be located

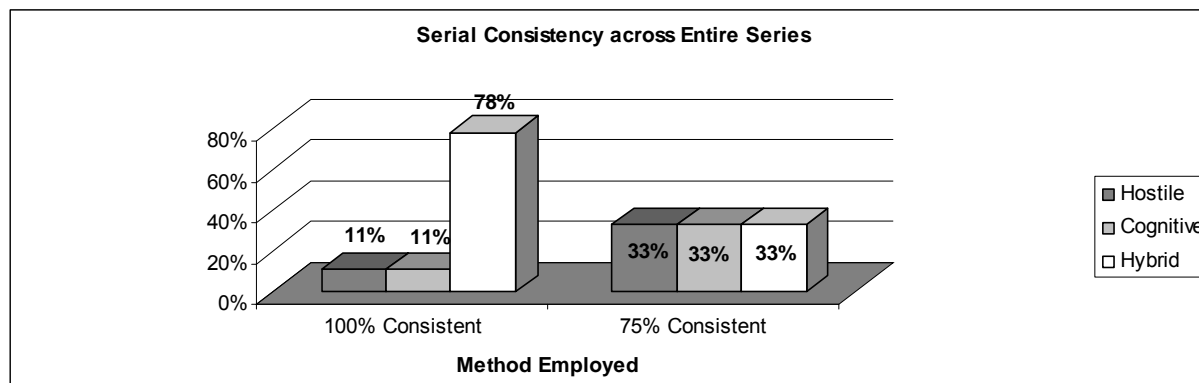
by the present author in the relevant literature. Subsequent analyses revealed a significant point of difference between serial and single-victim offenders in that single-victim offenders were more likely to engage in most of the impulsive high frequency behaviors and serial offenders were more likely to engage in *all* of the cognitive actions. Finally, most cases could be allocated to a single dominant theme using a stringent criterion and serial offenders were significantly more likely to be allocated to the cognitive theme compared to single-victim offenders.

#### **6.4.2 Aim 2: Linking Criminal History to Crime Scene Behavior**

Aim 2 of the current study was to determine if offenders with similar criminal histories commit their homicides in a thematically similar manner. Based on the findings presented thus far in the current study and the previous findings of Trojan and Salfati (2009c), if prior offending were truly reflected at the crime scene, it would be reasonable to expect those with an instrumental criminal history to commit more controlled, cognitive actions and those with more violent criminal histories to commit more violent, hostile homicides. Such consistent thematic patterns across both the offender's background and current homicide(s) would be ideal in terms of behavioral consistency and offender profiling.

Linking offenders according to their dominant criminal history and crime scene theme is straightforward in single-victim homicide, but becomes more complicated when considering the varying number of crime scenes for serial homicide offenders. Although not central to the current study, behavioral consistency across a series of homicides is a central issue to the field of Investigative Psychology (e.g., Bateman & Salfati, 2007; Salfati, 2008; Salfati, in press-a). For this reason, it was decided that the total series for each offender would be examined for thematic consistency according to two methods. Proportions were calculated for the offenders who demonstrated (1) 100% consistency across the totality of their crime scenes and (2) 75%

consistency across their series. Using these two methods, 22% (n=2) of offenders were consistent across their entire series and 67% (n=6) offenders remained consistent across 75% of their series, including cases that were not classifiable to either theme. The distribution of how cases were classified across their series is seen in Figure 6.4.4 below:



**Figure 6.4.4: Distribution of crime scenes across total series**

However, for the reasons cited in the methods section of the current chapter regarding the methodological issues involved in using a different number of crime scenes to examine serial homicide, only the first three in the series were examined to assign a thematic label for the totality of the series for each serial offender. An offender was allocated to a single thematic region if two of the three scenes have the same classification, cognitive or hostile. Using this approach, three series of homicides were considered mixed. All offenders were again individually examined to match criminal history to crime scene behaviors.

For single-victim offenders, the most common criminal history to crime scene pair was an instrumental criminal history and hostile crime scene (26%). This is in accordance with previous literature showing that most homicides are expressive/hostile and most offenders have

instrumental backgrounds (e.g., Salfati, 2000; Salfati & Canter, 1999). In agreement with the hypothesis stated at the outset of this section, the next most common pair was a violent criminal history and a hostile crime scene (24%). However, the third most common pair was a generalist (unclassifiable) criminal history and a hostile crime scene (17%). All other possible pairs, including cases with only high frequency prior offenses or crime scene actions and generalist criminal history or mixed crime scene (i.e., unclassifiable) were found in less than 10% of single-victim cases. The implications for offender profiling are rather daunting. Essentially, these results show that most single-victim crime scenes have the same thematic classification and offenders are almost equally likely to have a pattern of either violence or instrumentality in their criminal background and a decent number have no pattern in their criminal background. This suggests that under the current crime scene model and the criminal history model provided by Trojan and Salfati (2009c), it would be exceedingly difficult to profile single-victim offenders using criminal history as a discriminator in refining suspect lists.

For serial homicide offenders, the most common criminal history to crime scene pair was an instrumental criminal history and a cognitive crime scene (33%), which is in accordance with the stated hypothesis. Again, however, a substantial portion of the serial homicide sample would not be applicable to profiling, because 22% had an instrumental background and mixed series and 22% had a generalist criminal history and mixed series. These results suggest that when a series of homicide crime scenes display the controlled, cognitive behaviors analyzed here, they most likely have an instrumental, as opposed to violent, criminal background. However, this only applies to one-third of the serial homicide sample.

Table 6.4.2 examines the distribution of only those cases whose criminal history *and* crime scene behaviors could be allocated to a single theme (N = 70, serial n = 6, single-victim n = 64).

**Table 6.4.2: Distribution of combinations of classifiable crime scene and criminal history themes**

<b>Serial Offenders (N=6)</b>		
<b>Criminal History Theme</b>		
<b>Crime Scene Theme</b>	<b>Violent (n=1)</b>	<b>Instrumental (n=5)</b>
<b>Hostile (n=3)</b>	1 (17%)	2 (33%)
<b>Cognitive (n=3)</b>	0 (0%)	3 (50%)
<b>Single Offenders (N=64)</b>		
<b>Criminal History Theme</b>		
<b>Crime Scene Theme</b>	<b>Violent (n=32)</b>	<b>Instrumental (n=32)</b>
<b>Hostile (n=61)</b>	29 (45%)	32 (50%)
<b>Cognitive (n=3)</b>	3 (5%)	0 (0%)

As seen in Table 6.4.2, of the classifiable serial cases more offenders had an instrumental background (83%) but were equally likely to have a hostile or cognitive crime scene (50% each). Fifty percent of the classifiable serial cases had an instrumental criminal history and committed cognitive behaviors across the homicides in their series, 33% had an instrumental background but committed hostile behaviors across the series, and 17% had a violent criminal history and committed hostile behaviors across the series. However, these findings obviously need to take into account the fact that only six serial homicide offenders could be classified at both ends of the behavioral equation. This may affect the generalizability of the findings; replication studies could refute/confirm these findings. For single-victim offenders, one-half had an instrumental criminal history and committed a hostile homicide, 45% had a violent criminal history and committed a hostile homicide, and 5% had a violent criminal history but committed a cognitive

homicide. However, these relationships were not significant with one exception – single-victim offenders were significantly more likely to commit a hostile versus a cognitive crime scene ( $\chi^2(1) = 52.563$ , FET <.001).

## 6.5 DISCUSSION

In the current study, a combined analysis of single-victim and serial homicide offenders yielded a single thematic framework of crime scene behavior. The thematic regions were comprised of hostile actions aimed at inflicting direct harm to the victim versus those where the offender is engaging in actions that go beyond the physical process of killing the victim and is operating at a more cognitive level. Furthermore, a continuum similar to that found by Salfati (2003) was evident in which behaviors progressed from impulsive to frenzied behaviors aimed at completing the murder to more cognitive actions where the aggression becomes more controlled and goal-focused. Examination of individual cases showed that single-victim offenders were overwhelmingly more likely to commit a hostile homicide and serial offenders were equally likely to commit cognitive or hostile homicides. Still, serial offenders were significantly more likely to commit the cognitive behaviors, highlighting one important point of difference between these two types of offenders. Compared to single-victim offenders, serial homicide offenders were significantly more likely to engage in the cognitive crime scene actions suggesting that the current framework does go some way in terms of differentiating these two groups of offenders but is less useful in terms of differentiating single-victim offenders from one another and serial offenders from one another.

As with the study of rape by Mokros and Alison (2002), most offenders in the current study who had thematically similar backgrounds did not go on to commit similar homicides. Additionally, the findings of the current study showed that a large portion of single-victim

homicide offenders would be difficult to profile because their crime scenes were remarkably similar in terms of the behavioral evidence present at the scene and a substantial portion of serial offenders had either a generalist/unclassifiable criminal history and/or demonstrated a mixture of hostile and cognitive crime scene behaviors. Only a small sub-group of the serial homicide offenders demonstrated thematically consistent behavioral patterns in both their criminal history and crime scene behaviors with an instrumental criminal background and cognitive series. In most of these crime scenes, an instrumental goal may have been at work with the dominant cognitive behaviors involving theft or sexual assault of the victim. As mentioned previously, other authors have suggested a thematic link between sex and theft-related behaviors in that in both cases the offender gains instrumentally from the crime (see Salfati, 2000) and perhaps this group of offenders who seek to gain something tangible from their homicides should be examined as a separate, distinct group because they may be more applicable to profiling.

In addition, the initial sample of 17 serial homicide offenders demonstrated that 30% had no prior arrests and nearly 50% had no prior convictions. This may suggest a further sub-group of serial homicide offenders who have no or a minimal criminal background. This is in accordance with the prevalence rates of prior studies of serial homicide (e.g., Canter et al., 1996; Hickey, 2006) and future studies should compare the homicide series of offenders with no prior criminal record to offenders who have been arrested or convicted of crimes prior to the series.

The current study examined single-victim and serial homicide together because few studies had directly focused on how patterns in prior offending relate to actions at a subsequent crime scene and examining them together to fully understand their similarities before relegating them to separate examinations based on their distinct differences was thought to be appropriate. Perhaps, however, examining these groups separately would help to further identify points of

refinement within the frameworks proposed here and by Trojan and Salfati (2009c), which may make it easier to identify links between current and prior offending. Such an approach has been undertaken in previous studies of single-victim (Salfati, 2000) and serial homicide (Salfati & Bateman, 2005). The repertoire of behaviors engaged in by single-victim offenders in the current study was rather narrow compared to other samples (e.g., Salfati, 2000; Salfati & Canter, 1999) and to the current sample of serial homicide offenders who engaged in a wider variety of behaviors at the crime scene. However, because the offenders were examined together, only behaviors that occurred in cases in *both* samples could be used in the analyses. Expanding the samples of single-victim, and particularly serial, offenders or examining them in separate analyses would probably allow for the inclusion of a wider variety of crime scene behaviors that could be included in the current framework, which may be helpful in further differentiating these offenders.

In terms of linking criminal history to crime scene behaviors thematically, the results of the present study provide mixed implications for using criminal history to profile homicide offenders. Deriving profiles of an offender's likely criminal history from their actions at the homicide crime scene(s) may be possible. The study by Trojan and Salfati (2009c) and the current analyses found thematic patterns at both ends of the equation. There are distinct patterns in the criminal backgrounds of both serial and single-victim homicide offenders and in their respective crime scenes. Moreover, the patterns identified were able to differentiate between offenders in most cases. However, it is clear from the current results that how these two different facets of an offender's overall offending behavior relate to one another is not fully understood at present. In other words, it is unclear exactly how prior criminal offending can be linked to the

current homicide crime scene actions and additional studies seeking to establish this connection should be undertaken.

## **6.6 CONCLUSION**

The primary goal of the overall project as originally proposed was to focus on whether or not patterns existed in the prior offending of single-victim and serial homicide offenders and most of the preceding chapters have dealt with this aim directly. However, this project was undertaken in order to determine if such patterns could be extended to behaviors committed at a subsequent homicide(s) in order to provide a link between an objective and useful offender characteristic and the offender's actions, which would have tremendous utility to investigators.

As Chapter 6 discussed, this link between prior and current behavior is not clear and profiling offenders based on their criminal history is more difficult than anticipated by the early profiling literature. The current study used a method of examining specialization that did not rely on restrictive legal definitions and concrete repetition of a single offense and avoided the use of a rigid classification system of crime scene behavior that cannot account for situational variations in behavior. Still, these two facets of homicide offenders' overall criminal behavior could not be linked in the majority of cases. Essentially, most single-victim and serial homicide offenders with thematically similar criminal histories did not go on to commit thematically similar homicides. The final concluding chapter discusses the broader theoretical and practical implications of the results for offender profiling, investigations of homicide, and policies regarding homicide offenders. The limitations of the current study not cited elsewhere are also discussed and suggestions are made for future research.

## CHAPTER 7: DISCUSSION AND CONCLUSION

### 7 INTRODUCTION

This study – oriented around a theoretical model which assumed that there would be a thematic link between prior and current offending behavior – was undertaken in response to early research and typologies of homicide and serial homicide that made specific assumptions about the likely criminal history among various types of offenders (e.g., Keppel & Walter, 1999). While early offender profiling techniques and typologies arose specifically to provide investigators with a tool to narrow down suspect pools in difficult investigations, as Alison and Canter (1999) point out, most typologies arose in the form of autobiographies constructed on the basis of investigative experience without reference to empirically driven research or psychological or theoretical principles (e.g., Douglas & Olshaker, 1995; Michaud & Hazelwood, 1998; Ressler & Shachtman, 1992; Vorpapel & Harrington, 1998). In response to this, studies housed within the field of Investigative Psychology (IP) began to focus more on *how* such information was derived by directly testing the tenets of these typologies and developing new, testable and empirical frameworks (Bateman & Salfati, 2007; Bennell & Jones, 2005; Canter & Fritzon, 1998; Canter & Heritage, 1990; Canter & Larkin, 1993; Canter & Wentink, 2004; Canter et al., 2000; Canter et al., 2003; Canter et al., 2004; Hakkanen, Lindlof, et al., 2004; Hakkanen, Puolakka, et al., 2004; Kocsis et al., 2002a; Kocsis et al., 2002b; Lundrigan & Canter, 2001; Porter & Alison, 2006a; Salfati, 2000; Salfati & Bateman, 2005; Salfati & Canter, 1999; Santtila, Hakkanen, et al., 2003; Santtila, Ritvanen, et al., 2003). The current study sought to

contribute to this growing body of research and determine if prior offending can be used to aid investigations of homicide and serial homicide in a manner not done to date.

The overall goal of this project was to directly examine criminal offenses preceding a homicide or series of homicides and was undertaken for three broad reasons: (1) to determine if meaningful patterns exist in the criminal histories of homicide offenders; (2) to identify similarities and differences between single-victim and serial homicide offenders that may help to differentiate their criminal trajectories leading to the homicide; and (3) to determine if there is consistency between thematic patterns in prior offending and thematically similar behaviors committed at an offender's subsequent homicide(s). These overarching aims would have tremendous implications for the existing psychological and criminal justice literature on homicide and serial homicide in terms of how single-victim and serial homicide offenders truly differ and homicide as a culminating act within an overall criminal lifestyle. In addition, if prior offending can be linked to a subsequent homicide, such information would have direct practical implications for homicide investigators who could use criminal history as another tool in narrowing down suspect pools in the investigation of homicide. While this study was largely exploratory in nature given the lack of direct examinations of homicide offenders' criminal histories and those comparing single-victim and serial homicide offenders, many of the results of the current study confirm what is known about single-victim and serial homicide, yet other findings raise cautions about common assumptions regarding homicide offenders and their overall criminality. The major findings of the study are summarized below.

## **7.1 SUMMARY OF RESULTS**

### **7.1.1 Aim 1: Frequency of Offending**

The current study found that the majority of both single-victim and serial homicide offenders had a recorded criminal history prior to their homicide or first homicide in a series. Furthermore, most offenders had, on average, been arrested and convicted multiple times, with single-victim offenders arrested and convicted more frequently, on average, compared to serial offenders.

The findings of the current study regarding the frequency of offending demonstrated that offender criminal history at least has the potential to be a useful piece of information for investigators because it is a characteristic likely to appear in most homicide offender's backgrounds. However, in order to directly apply this information, the central aim of the current study was to explore patterns in prior offending that could be used to differentiate the criminal histories of serial and single-victim offenders.

### **7.1.2 Aim 2: Testing the Frameworks: Patterns in Criminal History**

The current study had originally proposed four potential frameworks that could conceptualize the prior offending of serial and single-victim homicide offenders (refer to Chapter 1). While the second framework – a continuum of criminal specialization – was primarily supported, the results indicated that both single-victim and serial offenders could be considered to specialize in thematically similar groups of offenses, but the differences between them instead involved where the offenders' emphases lied within the framework. Because the purpose of the present study was to identify patterns that could have direct implications for profiling offenders based on their criminal history, the current study broke from traditional specialization literature

that tended to focus on the legal classification of offenses. Instead, an approach was adopted that examined how offenders commit offenses that share a common underlying theme. In this manner, the results demonstrated that the criminal backgrounds of homicide offenders overall, both serial and single, showed a co-occurrence of convictions in instrumental and violent – both directly and indirectly violent – themes. Interestingly, however, the original framework proposed that single-victim and serial offenders would differ in terms of the *degree* of specialization, but the results indicated that both groups of offenders were almost equally likely to be allocated to only one thematic group and considered specialists. Yet, the offenders could in fact be differentiated according to the *type* of specialization displayed. Serial offenders were proportionally more likely to have prior convictions for most of the instrumental offenses and were overwhelmingly more likely to specialize in instrumental offenses, while single-victim offenders were nearly equally likely to be allocated to the instrumental or violent theme.

In studies looking at criminal convictions along with other offender characteristics, there is some support for the notion that most homicide offenders in fact do display a predominantly instrumental background (e.g., Salfati, 2000; Salfati & Canter, 1999). Therefore, the current findings are in agreement with the existing IP literature. Examining the criminal convictions of single-victim and serial homicide offenders according to how these convictions co-occur across the sample, not only highlighted one potentially important point of difference between these offenders – that serial offenders would more likely commit offenses linked by a theme of instrumentality prior to the homicide series – but allowed for a more detailed examination of the offenders themselves through the construction of criminal history profiles.

Rather than comparing the offenders on variables that may or not be important in defining differences between single and serial offenders, a subsequent set of analyses selected

variables shown to be important in differentiating these offenders in the current analyses and those identified in the existing literature. These ten criminal conviction variables were combined into offender profiles so that individual offenders, serial and single, could be directly compared according to their criminal history profiles. The results indicated a potential refinement in the instrumental/violent criminal history framework in which offenders were differentiated according to how instrumental offenses overlapped with varying degrees of violent offenses and whether the offenses primarily involved the targeting of a person as a victim, did not directly involve a victim, or both. Particularly important was that serial offenders tended to have criminal history profiles unique from one another and from single-victim offenders. Moreover, among the serial offenders there was an overlap of offenders who targeted people as victims in both instrumental (i.e., sexual offenses) and violent offenses (i.e., assault) and a second group of serial offenders who committed instrumental and violent offenses against a person as a victim and other purely instrumental offenses. These results suggest the possibility of two sub-groups of serial homicide offenders. Studies have suggested a sexual element in many cases of serial homicide (e.g., Holmes & Holmes, 2002; Ressler et al., 1995; Schlesinger, 2004) and the current study suggests that simply looking at the frequency of prior sexual offending in the backgrounds of offenders may be less useful than examining how sexual offenses co-occur with other offenses to refine potential sub-groups of offenders. However, these conclusions are purely theoretical at this point, due to the small sample of serial offenders used in the current study.

The patterns identified here provide a foundation for examining how prior offending may be thematically linked to crime scene behavior. The next step was to examine if a thematic framework existed in single and serial offenders' crime scene actions. Offender profiling is based on the idea that there is an underlying psychology to the actions committed at a crime scene and

the personal characteristics of the offender (Alison & Canter, 1999). In this respect, offender profiling assumes thematic consistency in the sense that those with thematically similar backgrounds will commit thematically similar homicides.

### **7.1.3 Aim 3: Linking Criminal History to Crime Scene Behavior**

The analyses of offenders' crime scene behaviors demonstrated thematic divisions between crime scene actions that were hostile – aimed directly at inflicting physical harm to the victim (Feshbach, 1964) that did not extend beyond the physical process of murder – and cognitive behaviors that went above and beyond the actions necessary to carry out the murder. Furthermore, closer examination of the framework revealed a modulating facet in which the elements of the themes are occurring along a continuum. Essentially, the crime scene actions in serial and single-victim homicide occurred along a continuum from highly impulsive actions that characterized the sample as a whole, to more frenzied hostile actions, to more targeted hostile actions, to more controlled and cognitive actions. A series of chi-square tests was conducted to determine if serial and single-victim offenders fell primarily at opposing ends of this continuum of crime scene actions. Three of the four high frequency behaviors indicating a high degree of impulsivity were significantly more likely to be committed by the single-victim offenders, while all of the cognitive actions were significantly more likely to be committed by the serial homicide offenders showing that these offenders did tend to fall at opposing ends of the continuum.

However, despite the apparent importance of the cognitive actions in differentiating serial from single offenders, when offenders' crime scenes were individually examined to determine if the scene could be allocated to a dominant theme – cognitive or hostile – the serial offenders were almost equally likely to be allocated to either theme. Still, these offenders were allocated to the cognitive theme to a greater degree compared to the single-victim offenders whose themes

were overwhelming hostile. The final step in the analyses was again to individually examine all cases in the sample and determine if thematic consistency was in fact evident between prior offending and current homicide behaviors in the manner assumed under the concepts of offender profiling.

Overall, the results for this portion of the study indicated that the majority of single-victim and serial homicide offenders cannot be effectively profiled using their criminal history. This is in accordance with previous research that has found it possible to identify patterns in the crime scene behaviors and offender characteristics, but not a clear link between the two elements (see Wilson & Alison [2005] for a discussion). In the current study for single-victim offenders, nearly all crime scenes were classified as hostile; in other words, single-victim homicide was aimed at directly harming the victim and once the homicide was complete, few offenders engaged in any subsequent behaviors. For serial offenders, only one-third of offenders demonstrated thematic consistency between their prior offending and current crime scene behaviors – those with an instrumental criminal history and a cognitive series of homicides. Many of the remaining serial homicide offenders were likely to be unclassifiable at either end of the behavioral equation, in their criminal history and/or crime scene behaviors. In conclusion, while meaningful patterns existed in the criminal histories and homicide crime scenes of single-victim and serial homicide offenders and it was possible to differentiate between them at both ends of the behavioral equation – how these two facets link up could not be answered by the current study. The theoretical implications and implications for offender profiling and homicide investigations are discussed below.

## **7.2 THEORETICAL IMPLICATIONS AND IMPLICATIONS FOR OFFENDER PROFILING AND HOMICIDE INVESTIGATIONS**

### **7.2.1 Links to Prior Studies of Homicide and Relevant Literature**

The finding that the majority of single-victim homicide offenders had been arrested and/or convicted prior to the homicide is in accordance with the findings of multiple studies (e.g., Broidy et al., 2006; Delisi & Scherer, 2006; Sothill et al., 2002; Wolfgang, 1958). Additionally, the finding that more than two-thirds of serial offenders in the current study had a recorded criminal history is similar to the findings of prior studies of serial homicide offenders (e.g., Arndt et al., 2004; Canter et al., 1996; Godwin, 2000; Hickey, 2006; Wright et al., 2008).

Additionally, the results of the current study regarding single-victim and serial homicide offenders find support in the general homicide and serial homicide literature. The bulk of the research on homicide suggests that it is highly situational in nature (e.g., Schlesinger, 2004) and may be an impulsive reaction to an adverse situation or dispute committed by an individual who has developed aggressive scripts through prior aggression in interpersonal interactions in the past and more readily relies on them in current situations (Salfati, 2003). While most individuals are able to control their reactions to frustrating situations, this mechanism may be under-controlled in violent individuals (Toch, 1992) and such individuals may be predisposed to react in an aggressive manner due to a lower degree of self control (Gottfredson & Hirschi, 1990). According to Gottfredson and Hirschi (1990) such individuals are impulsive and may not possess the cognitive skills involved in offense planning or long-term goal directed behavior and, due to this impulsivity, may engage in behaviors analogous to crime, such as drinking and drug use. As discussed in Chapter 4, single-victim offenders in the current sample were proportionally more likely to be convicted of criminal offenses pertaining to alcohol use and disobeying city/local

ordinances in support of this notion. Moreover, in the current study, single-victim offenders had been, on average, arrested and convicted more often than the serial offenders in addition to rarely going beyond the physical process of killing the victim to engage in actions that require some measure of cognition or control. Taking this literature into consideration, it was logical to expect single-victim homicide offenders to concentrate at the more impulsive end of the continuum of crime scene behavior proposed in Chapter 6 and the results confirmed this. The current study demonstrated, in fairly clear terms, that the typical single-victim homicide event is impulsive and committed by someone with an established criminal history, suggesting that Gottfredson and Hirschi's (1990) general theory of crime in relation to low self-control even applies to the most serious offense. In addition, most single-victim offenders did not engage in behaviors at the homicide that went beyond inflicting harm to the victim. The finding that single homicide offenders' crime scenes were typically hostile is in accordance with previous research demonstrating that most homicides are expressive or hostile in nature (e.g., Block & Block, 1993; Salfati, 2000; Salfati & Canter, 1999). However, the current study also suggests that low self-control as a theoretical paradigm may be less useful in enhancing our understanding of serial homicide.

Douglas et al. (1992) state that serial murders are "hypothesized to be premeditated", involve planning, careful selection of a specific victim type and the offender "carefully monitors his behaviors to avoid detection" (p. 21). Canter et al. (2004) found that more than 50% of a sample of 100 serial homicide offenders engaged in actions that either went beyond merely killing the victim, such as positioning the victim's body, torturing the victim, and sexually assaulting the victim before death, and actions designed to conceal the crime, such as removing the murder weapon, and concealing the victim's body. Therefore, it is not surprising that the

current study found that all of the cognitive behaviors within the hostile/cognitive framework (refer to Chapter 6) were significantly more likely to be committed by the serial homicide offenders, even considering the small sample size.

In terms of linking criminal history to crime scene behavior, the results of the current study stand in direct contrast to the assumptions of early typologies that offenders with similar crime scene actions would have similar criminal backgrounds. However, the results are consistent with more recent empirical research. Wilson and Alison (2005) discuss how studies using thematic behavioral analysis techniques have developed and have been largely successful in identifying core behaviors of certain offenses and themes of offending behavior that are useful in terms of differentiating behavioral patterns of offending. However, linking the identified themes to distinct offender characteristics has been less successful (Wilson & Alison, 2005). For example, in an examination of stranger rapes, Hakkanen, Lindlof, et al. (2004) identified three behavioral themes of crime scene behavior and four themes of offender characteristics, but only found a significant association between one crime scene and characteristic theme. Mokros and Alison (2002) failed to find any significant association between offending behaviors in rape and prior convictions, offender age, and various socio-demographic features. However, a different picture emerges from the study of sexual murder by Kocsis et al. (2002b). Kocsis et al. identified four themes of crime scene behavior in sexual homicides (in addition to a central, undifferentiated cluster of variables characteristic of the sample on the whole) and each of the four themes were found to be related to distinct offender characteristics. This finding is particularly interesting given the results of the current study in which a small group of serial homicide offenders, approximately one-third, did demonstrate thematic consistency across their prior offending and homicide crime scene behaviors. As discussed in Chapter 6, this group of

offenders demonstrated an instrumental background and cognitive crime scenes, but moreover typically engaged in cognitive actions at the homicides with an instrumental goal, such as sexually assaulting and stealing from the victim. While the current study is limited in terms of the small sample of serial offenders, given the prevalence of sexual behaviors among serial offenders and prior sexual offenses in the sample, it may be the case that as with the study by Kocsis et al. (2002b) sexual murders and their associated perpetrators are more able to be differentiated and therefore more suitable to profiling.

Despite the sample limitations, however, the current study can still contribute to the offender profiling and criminal justice literature and does so in three broad ways as outlined here. First, the criminal history prevalence rates established in the current study show that the majority of homicide offenders have committed offenses prior to the homicide(s) and confirm previous research, as highlighted in previous sections. This supports the contention made by Wright et al. (2008) that “classification of criminals into specific offender types may be unjustifiable” because offenders who commit only a single type of offense rarely exist (p. 395). Stated differently, it may be inappropriate to consider offenders as purely robbers, rapists, or murderers and stepping away from rigid perspectives based on such labels would go some way in understanding overall offending careers, escalation, and potential investigative and policy recommendations based on such an understanding. In the current study, although thematic specialization patterns were evident, these offenders clearly committed years of offenses prior to the culminating act of homicide. This provides a starting point for studies examining more traditional criminal justice topics such as escalation to violence, which is discussed in more detail below.

In addition, the criminal justice literature has been largely silent regarding the reliability, validity, and utility of offender profiling techniques, relegating much of the debate to the fields

of psychology and Investigative Psychology. Even within the IP field, empirical studies of offender profiling are relatively new, first appearing in the 1990s, and have been pioneered by a small number of researchers (see Salfati [2009] for a discussion of the evolution of Investigative Psychology); however, interest in the empirical validation of profiling techniques seems to be increasing and increased research and extension into related fields, specifically criminal justice, can be expected. The lack of examination in the criminal justice literature is unusual because the purpose and intent of offender profiling is to assist criminal justice practitioners, specifically, law enforcement agencies. The current study sought to address a generally neglected topic in offender profiling – that individuals with similar crime scenes would have similar criminal backgrounds – and provides a foundation for future studies seeking to determine if criminal history is as useful of a tool in investigations of homicide as assumed in the early offender profiling research (see Keppel & Walter [1999] for example).

Finally, as discussed throughout this study, serial and single-victim offenders are typically assumed to be very different types of offenders, both in their personal and background characteristics and how they commit their homicide(s). In addition to the current study's findings that a single thematic framework could conceptualize the prior offending and crime scene behavior of both serial and single offenders, prior studies have shown them to be similar on multiple measures including background characteristics and criminal history (e.g., Canter et al., 1996; Kraemer et al., 2004). As explained by Canter et al. (1996), this raises the question of whether or not excess investigative resources, such as use of a task force or special agents with expertise in profiling, are warranted. Obviously, such a stern conclusion warrants further study prior to any sort of investigative or policy recommendation. The point not to be overlooked, however, is the contribution of the current study in highlighting some of the potential points of

commonality between these offenders calling into question much of the criminal justice literature assuming that serial homicide is fully remarkable and deserving of theoretical explanations completely separate from single-victim homicide.

### **7.2.2 Theoretical Implications**

The current study sought to compare the criminal histories of serial and single-victim offenders in a manner not done to date – by focusing on thematic co-occurrences between prior offenses. The theoretical backing for undertaking such an examination was that if offenders' criminal histories could be differentiated from one another it would provide a useful, empirically driven framework that could be linked to crime scene behavior and be of use to investigators. However, the totality of the results in the current study indicated that it would be difficult at best to profile offenders based purely on their criminal history. This reintroduces the fundamental assumptions that underlie the entire notion of offender profiling.

According to Mokros and Alison (2002) offender profiling is based upon the notions of offender consistency and a homology between offenders' actions and characteristics. In other words, for offender profiling to 'work' offenders must demonstrate a sufficient degree of behavioral consistency across offenses and demonstrate a lower threshold of behavioral variation than found "in a random comparison of different offenders" (Mokros & Alison, 2002, p. 26). In addition, the homology assumption must be satisfied, which holds that the more similar two offenders are in terms of their respective crime scene behaviors, the more similar they will be in terms of their personal characteristics. Both conditions are intertwined in that an individual must remain sufficiently consistent in their own behavior in order for similarities between individuals to hold (Mokros & Alison, 2002). Mokros and Alison (2002) go on to provide possible explanations for the lack of support for a direct and simple homology of offender characteristics

and behaviors. Given the findings of the current study that did not find a link between prior offending and current crime scene actions in most cases, a closer examination of these issues, relevant literature, and related aspects of offender profiling is necessary.

After failing to find direct support for the homology assumption in cases of stranger rape, Mokros and Alison (2002) firmly state that the homology assumption may be too simplistic and “the pragmatic approach of assuming a homology of actions and characteristics is likely to fail if there is no clarification of *why* such a homology should exist” (p. 40, *emphasis in original*). They further call for testable, empirical models to be developed that are built upon a theoretical framework that can provide reasons as to why certain characteristics should be linked to offending behavior. The present study attempted to do this by drawing directly from the existing literature on homicide and serial homicide to propose four testable, theoretically based models of prior offending. In other words, as outlined in Chapter 1, the very frameworks proposed were derived directly from the existing literature and theoretical perspectives pertaining to homicide and serial homicide as a way to view criminal history as occurring within the context of offending behavior before and during the homicide. Despite this, in most cases offenders with similar criminal histories did not go on to commit similar homicides suggesting that even with theoretically driven models, the link between offender’s actions and this particular characteristic may not be as simple as assumed.

In terms of behavioral consistency as a necessary condition of offender profiling, studies of behavioral consistency among general populations have supported a significant degree of cross-situational consistency (Funder & Colvin, 1991) and consistency across self-report measures of interpersonal violence (Hilton, Harris, & Rice, 2003). Studies of behavioral consistency in serial homicide are more rare, but provide a relatively bleak picture. Studies of the

consistency of individual behaviors and groups of behaviors across a series of homicides have typically only identified a small sub-sample of offenders who remain consistent across the first few homicides in a series (e.g., Bateman & Salfati, 2007; Salfati & Bateman, 2005). The current study did briefly examine the issue of behavioral consistency at the crime scenes of serial homicide offenders and, in accordance with these earlier studies, found that only two offenders remained fully thematically consistent across all the crime scenes in their series and only four out of nine remained fully consistent across the first three scenes in the series.

The general lack of a high degree of behavioral consistency in serial homicide may be due to several factors, such as situational influences (e.g., Canter, 2000; Mokros & Alison, 2002) and the process of learning (Canter & Youngs, 2003). Pertaining to the first issue, studies have begun to attempt to identify which behaviors may be less prone to situational influences. For example, Sorochinski and Salfati (2009) examined consistency in serial homicide in terms of thematic patterns across three behavioral sub-groups of offending behavior. They found that, in general, the least consistent group of behaviors were those pertaining to wounding of the victim, which may be attributable to situational influences present in the homicide. The most consistent sub-group of behaviors dealt with the interaction between the victim and offender – more specifically, with the role the victim is assigned by the offender. Taking this into consideration, it is possible that there may groups of behaviors within a given offense that will remain more consistent due to a decreased likelihood of being impacted by situational influences, which may be more useful in establishing behavioral consistency. In the same vein, there may be certain behaviors that are better than others in terms of differentiating offenders and crime scenes. This possibility was explicitly suggested by Mokros and Alison (2002) who stated that “it is possible that some aspects of crime scene behavior are better predictors of characteristics than others” (p.

40). This issue of identifying the most salient variables in conceptualizations of offending behavior will be reconsidered in the next section in relation to the implications for offender profiling as an investigative tool.

The second issue that may impact behavioral consistency – the process of learning – has particular relevance to the current study's focus on prior offending within a framework of criminal specialization. According to Britt (1994), the idea of criminal specialization is rooted within the criminal career paradigm, in which, over the course of an individual's offending career they gain experience with particular crimes and "recognize that they are more skillful at those crimes" (p. 173). Stated differently, as an offender gains experience in a particular area of crime they will learn what behaviors and skills best help them to achieve their purported goals (Simon, 1997). In this manner, specializing in a crime becomes cost-effective and offenders will demonstrate greater specialization in the types of offenses they commit. In contrast to the criminal career model, control theory would propose that offenders will demonstrate versatility in offending because lack of self-control can be manifested in different ways and in different criminal offenses (Britt, 1994; Gottfredson & Hirschi, 1990; Mazerolle et al., 2000; Simon, 1997). However, this dichotomy of views regarding offender specialization may not be appropriate to examinations of offending specialization when the purported intent is to identify broader patterns of offending linked through common underlying theoretical constructs (Farrington et al., 1988). As the current study demonstrated, how specialization is conceptualized and measured will have different implications for how to best examine specialization within an overall offending career. Because the current study examined criminal offending on the whole and did not include a timeline of the offenses preceding the homicide(s), it cannot directly contribute to the theoretical discussion regarding the learning process that may be at work in the

progression to homicide. According to Wright et al. (2008), “an offender is more likely to have a versatile career the earlier that career starts” (p. 390). Increased specialization later in the offender’s career may indicate learning processes. If that is in fact the case, the current study may have been able to detect high percentages of specialists in the samples used because criminal history was viewed collectively – across the offender’s total offending background. The addition of a timeline of offending, would allow for the consideration of whether or not varying degrees of specialization are more or less evident at different times in the offender’s career and the implications this may have for escalation to homicide. However, the results presented in the current study at least establish that homicide occurs within the context of an overall criminal background. It is theoretically plausible that once better behavioral measures are developed and the progression and escalation from general criminal offending to homicide is more completely understood, that offenders may be shown to demonstrate behaviors at a homicide crime scene that indicate learning from prior criminal experiences. However, the current project, and the bulk of the literature summarized throughout the preceding chapters, demonstrates that extending these theoretical possibilities to practical applications in actual investigations is premature.

This section has dealt with the central issues of *how* a particular behavior or characteristic is measured and *why* certain features become the central focus in studies seeking to differentiate individuals will impact the manner in which this information can assist in the further development of empirical models of offender profiling and how the information is applied to investigations of homicide. Drawing from these theoretical issues, the section below addresses the implications of these principles and the findings of the current study for offender profiling research and practice, as well as homicide investigations.

### **7.2.3 Implications for Offender Profiling and Homicide Investigations**

“Offender profiling has become part of public consciousness even though many people are not really sure what it is and the great majority of people have no idea at all of how it is done. This ignorance is just as prevalent in professional circles as amongst the lay public.” (Canter, 1999, p. vii) For this reason, the most appropriate tactic for researchers is to aim to educate colleagues examining violent offending and law enforcement personnel by empirically testing assumptions that already exist in the profiling literature and provide objective information and reliable data so investigators can make their own informed judgments.

Due to the theoretical difficulties outlined in the previous section regarding the homology assumption and how characteristics can be linked to behaviors, a modest approach that aims to assist in suspect prioritization using base rate frequencies may be warranted (Mokros & Alison, 2002). Unfortunately, the current study can only state that the majority of homicides, whether committed by a serial or single-victim offender, involve an individual with some type of prior criminal record. In other words, the offender has, most likely, already come in contact with the criminal justice system. Furthermore, certain offenses were much more likely to be present among either single-victim or serial offenders. However, the application of this information to an investigation would presuppose that a series has been identified or ruled out and it is consequently known that the homicide was a one-off crime or part of series.

In terms of crime scene behaviors, the serial homicide offenders in the current study were significantly more likely to engage in much more controlled, cognitive actions at the scene. This may suggest that these behaviors play an important role in differentiating the crime scenes of serial and single-victim offenders and could, therefore, assist in identifying a crime scene as likely to have been committed by a serial offender. However, given the small sample of serial

homicide offenders, this possibility absolutely necessitates further examination and replication on larger samples prior to application to any investigative policy or guideline.

While the suggestion that the most appropriate application of the current findings may be to provide base rates of offending seems meager, this does go beyond what was provided by many early offender profiles and typologies of offenders. In an examination of professionally constructed profiles that were used in actual investigations, Alison et al. (2003) found that “the overwhelming majority of statements made about the offender(s) were not discussed in terms of any grounds, warrants, or backing to support the claim...[i]n other words, over 80% were unsubstantiated” (p. 178). The lack of empirical backing for the assertions made in such profiles and in early typologies and the lack of attention paid to the utility of examining frequencies of behaviors and characteristics across multiple types of offenders (e.g., Holmes & Holmes, 2002; Keppel & Walter, 1999; Ressler et al., 1995) is a significant shortcoming of such work. Even if the base rates provided are low, it at least provides an objective measure that investigators can judge in terms of its utility in identifying a suspect. For example, consider the current results presented in Chapter 6. Of the single-victim offenders who committed a hostile homicide, 45% had committed prior offenses linked by an overall violent theme and 50% committed prior offenses that were instrumental in nature. Investigators can, at the very least, decide that this information – presenting roughly a 50-50 chance that the offender will have a violent or instrumental criminal history – is not useful in prioritizing suspect lists and decide to focus on other background characteristics in reducing a suspect pool.

Beyond the provision of base rates across various offense behaviors and offender characteristics, offender profiling as an investigative tool will be best assisted by revisiting in more detail the fundamental assumptions underlying it. The issue of identifying the most salient

behavioral features of various types of offending and the most salient offender characteristics that may be linked to behaviors has been discussed in depth in relation to the canonical (A to C) equation (Canter, 1995; Canter, 2000). As discussed previously, the Actions to Characteristics equation involves identifying the actions committed at a crime scene that can be reliably and empirically linked to characteristics of the offender. This process involves determining what features best differentiate between different types of offenses, such as sexual murder versus rape (Salfati & Taylor, 2006) and what features differentiate between sub-groups within an offense, such as domestic versus stranger homicide. At the same time, behaviors or characteristics that characterize a group as a whole will not be useful to investigators in terms of prioritizing suspects.

The current study found patterns at both ends of the A to C equation proposed by Canter (2000), but not how the two ends of the equation may be connected. Until future studies are able to make this connection to aid in investigations, preventative measures, particularly for single-victim homicide that is a much more common phenomenon than serial homicide, may be the best policy. Targeted enforcement policies aimed at habitually violent offenders may be more appropriate. The following is offered as an example of such a policy and relevant to the current study because it was undertaken in the same city from which the single-victim sample was derived.

The *Cincinnati Initiative to Reduce Violence* (CIRV) is a community based approach undertaken by law enforcement and prosecutors, social service agencies, street workers, and community organizations to increase the targeting of individuals and groups of individuals identified as chronically violent (Engel, Baker, Tillyer, Eck, & Dunham, 2008). Based on the principle of specific deterrence, if any known associate of an identified violent group is arrested

for homicide, all individuals within that group will be subjected to more targeted law enforcement scrutiny and investigation and harsher criminal penalties for any offenses, though only the individual committing the homicide is charged with the initiating murder (Engel et al., 2008). If individuals within a targeted group choose to desist offending, educational, employment, social service and other opportunities or services are provided to the offenders. CIRV is based on previously successful programs aimed at the reduction of homicide and gun violence (Engel et al., 2008).

Since the findings of the current study support the notion that most single-victim homicides are situational in nature and likely to be committed impulsively by individuals who are more prone to aggression, targeted enforcement of habitually violent offenders may be the best option in attempting to prevent a homicide from occurring.

For serial homicide, empirical models of serial homicide behaviors need to be developed and those that have been offered (Salfati & Bateman, 2005; Sorochinski & Salfati, 2009) need further consideration. For such models to have direct implications for investigations of homicide, specific focus should be given to the area of behavioral consistency as central to linkage analysis – linking a series of crimes together and to a given offender (Bateman & Salfati, 2007) – and the behaviors or groups of behaviors that repeatedly show the highest degree of consistency. At the very least, more detailed knowledge of the factors that best assist in linkage analysis could aid investigators in identifying a series early on and in interrupting it before additional victims accumulate.

### **7.3 LIMITATIONS AND FUTURE RESEARCH**

In addition to the limitations regarding the samples used in the current study discussed previously in Chapter 4, 5, and 6, and those identified in the current chapter, there are other

elements of the current study that should be taken into consideration. First and foremost, it is impossible to say with absolute certainty that if not arrested, the single-victim offenders in the current study would not have committed additional homicides, thereby becoming multiple or serial homicide offenders. In the same vein, it is plausible that additional victims may have been claimed by the serial homicide offenders in the current sample which were not linked to their series by investigators. These are problems that are simply inherent in research pertaining to single and serial homicide and studies such as the current one can only consider offenders in relation to the homicide or homicides for which the offender was actually convicted.

Furthermore, the overall purpose of the current study was to examine the criminal histories of offenders on the whole. In other words, the intent was to look at the totality of offenses at the time a homicide or when the first homicide in a series was committed in order to determine how such information could be linked to crime scene behaviors. The current study does not consider criminal offenses committed after a homicide but before the offender's arrest, nor does it consider crimes taking place throughout a series of homicides. Examining these additional factors is important for our understanding of overall offending as it occurs in conjunction with homicidal acts and whether patterns in escalation are evident in the criminal histories of single-victim and serial homicide offenders. Finally, the current study looked at criminal history as a characteristic that could be useful to investigators if it could be linked to crime scene behavior. Therefore, the current study did not examine the crime scene behaviors of offenders with no criminal history and compare their actions to those with a criminal record. There could be important practical and theoretical differences between these individuals and such comparisons are certainly important from an investigative standpoint but went beyond the aims of this study and are more appropriate to future examinations.

The most serious limitations of the current study are imposed by the small sample of serial homicide offenders, as first discussed in Chapter 1. While the reasons for the difficulty in obtaining a larger sample have been discussed, it is appropriate to revisit the implications of this. First, small samples have inherent problems with generalizability and, therefore, any comparison of the present study's results to other examinations of serial homicide should take the sample size here into consideration. Secondly, since a larger, random sample was not possible in the current study, the sample may be biased and unrepresentative of serial homicide in general. Comparison of the current findings to prior studies of serial homicide were undertaken where appropriate, but replication studies are of central importance in terms of testing the models of criminal history/crime scene behavior developed here and the conclusions drawn from them. These limitations do not negate the findings of the current study, which was the first study to address directly and specifically the patterns in prior offending among single and serial homicide offenders and the link to crime scene behavior using MDS techniques. Therefore, the current study is simply a first step for more in-depth examinations of these issues.

Taking these limitations into consideration, the following suggestions are offered for future research in addition to those suggested in the previous section that may directly aid investigations and profiling of offenders. Given the notion that homicide offenders are likely to be drawn from the general criminal population (e.g., Canter et al., 1996; Gottfredson & Hirschi, 1990; Wolfgang, 1958), the thematic approach used in the current study could be useful to examining patterns of specialization among general offender populations or other specific types of offenders, such as rapists. While the thematic method demonstrated that meaningful patterns existed in the criminal histories of homicide offenders in the current sample, as with other MDS examinations of broader groups of offender background characteristics (e.g., Salfati, 2000;

Salfati & Canter, 1999), future studies could explore alternative methodologies to gain a richer understanding of offending specialization.

In terms of specialization in particular, but potentially applicable to crime scene behavioral analysis as well, latent class analysis (LCA) could be an appropriate, alternative methodology. Similar in general intent and theoretical underpinning to SSA, LCA searches for patterns that may be evident in data to develop broader groups of individuals or classes rather than simply confirming categories that are predefined (McGloin et al., 2009). However, LCA presumes that the latent classes are static; if it is believed that individuals do not remain static or consistent within the identified classes, latent transition analysis (LTA) can be used instead. Because LTA accounts for the possibility that “the latent classes are dynamic and that individuals can develop or move through them” (McGloin et al., 2009, p. 249), it may be more appropriate to examinations of the consistency of homicide behavior or escalation in offending.

The idea that behavioral consistency can be impacted by a process of learning, and more specific to the current study, the theoretical possibility that learning from prior criminal offenses can impact the manner in which an offender carries out a homicide or series of homicides should also be a subject of future examination. However, this would most likely have to be conducted in two phases. First, the most salient behaviors that may indicate learning from prior criminal activity need to be identified. For instance, in an examination of rape, offenders who took precautions to not leave fingerprints were four times more likely to have a prior burglary conviction and those who destroyed semen as evidence were four times more likely to have a prior sexual offense conviction (Davies et al., 1997). The authors suggest that this latter behavior may be a direct result of learning from a preceding sexual offense conviction about the potential evidential value of such forensic evidence (Davies et al., 1997). The second phase would involve

offender interviews as a way to understand how prior offenses influenced a later homicide. Beginning with the development of empirically derived models of offending behavior can provide for more structured offender interviews in which theoretically derived and empirically based questions can be “explored in an interview setting” (Salfati & Bateman, 2005, p. 142). Such models and interviews can provide a richer understanding of the influence of prior offending behavior on subsequent offenses.

Returning to the A to C equation (Canter, 1995), perhaps future studies need to more carefully consider the variables selected – both in deciding what variables best conceptualize a particular offense and what variables are most useful in offender differentiation. For instance, crimes can be considered within the context of interpersonal interactions between a victim and offender and Canter (2000) points out that the role of the victim to the offender in these transactions can be of central importance. A number of empirical models of crime scene behavior in homicide, serial homicide, and arson have focused on the role of the victim to the offender or the victim-offender relationship as important in differentiating crime scenes (e.g., Canter & Fritzon, 1998; Canter & Heritage, 1990; Salfati, 2000; Salfati & Canter, 1999). This provides an example of a concerted effort on the part of empirical research to identify the factors that best differentiate offenders.

Future studies should examine other potential facets of offending behavior that may be useful to investigators. In identifying the salient features likely to best differentiate offenders and the link between these features to offending behavior, research should consistently focus on those characteristics of offenders that can be actually acted on by investigators to a practical degree (Canter, 2000). In this respect, studies could accomplish this by exploring fairly well established patterns of offending behavior and how they link to offender characteristics. For

instance, geographical profiling – the idea that the locations where an offender commits their offenses maintain some degree of predictability and can be linked to the offender’s likely home base (Lundrigan & Canter, 2001) – has found substantial support in empirical examinations of different offenses including serial homicide (e.g., Canter & Gregory, 1994; Godwin & Canter, 1997; Lundrigan & Canter, 2001) and serial rape (e.g., Canter & Larkin, 1993). In terms of future research, studies could take the fairly predictable patterns that offenders demonstrate in terms of how they travel to commit offenses to other characteristics of the offender. Some studies have already begun this process using criminal history. Warren, Reboussin, Hazelwood, Cummings, Gibbs and Trumbetta (1998) found the number of previous property crimes in the criminal records of serial rapists was positively correlated with the distance they traveled to commit their offenses, as was the number of previous rape convictions. This provides an example of how combining an established technique with other specific offender characteristics can provide additional tools to investigators in terms of suspect prioritization – here by using criminal history to prioritize suspects within the likely geographic area where they reside based on the principles of geographic profiling.

Finally, various aspects of offending behavior that have been previously identified as blockades to differentiating offenders should be reconsidered from a new perspective. As a concrete example, consider the findings in Chapter 6 that 95% of the single-victim sample committed hostile behaviors at the crime scene aimed at direct harm to the victim and, in general, single-victim offenders demonstrated a high degree of impulsivity in their criminal behaviors. This has been attributed largely to the situational nature of many homicides, leading to the conclusion that single-victim homicide is typically difficult to profile because it arises out of situation-specific interpersonal disputes. However, this view does not take into account *the type*

*of situation*. Impulsive, situational homicides can arise out of domestic disputes, felony crimes, arguments (Schlesinger, 2004), or gang disputes (FBI, 2004) to name only a few. The current study was centrally aimed at comparing serial and single homicide offenders and, due to the lack of studies that directly undertake such a task, examined both groups of offenders collectively as a foundation for understanding their respective similarities and differences. This approach was also undertaken due to the lack of clearly defined behavioral features, observable at the crime scene that would have allowed for a more narrow focus on offender sub-groups within these offender types. However, if such clear boundaries between sub-groups existed, the latter approach may have been possible. Once studies have directly undertaken detailed examinations of the salient behavioral features that are evident at the various scenes of these potential sub-groups of homicide that effectively differentiate between them, it may be possible to look for more specific links to offender characteristics, including offender criminal history.

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