Criminal Profiling

International Theory,
Research, and Practice

Edited by
Richard N. Kocsis, PhD

✳ HUMANA PRESS

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Dedication

Ezt a konyvet neked irtam Anyukam szereto fiad Rihard.

About the Editor

RICHARD N. KOCSIS, PhD, is a forensic psychologist in private practice. He is the author/co-author of close to 90 scholarly publications (articles, book chapters, etc.) on the topics of criminal profiling, serial violent offenders, and their criminal investigation. He has served as an expert consultant to law enforcement, emergency, and prosecution agencies as well as private law firms. In addition to his clinical and forensic work, he has held various academic positions in the areas of forensic psychology and criminology including Lecturer in Investigations (Policing). In 2000, he was awarded the Australian Museum's prestigious *Eureka* prize for critical thinking in recognition of his scientific research in the area of criminal profiling.

Preface

International Perspectives into the Practice and Research of Criminal Profiling

Today criminal profiling is no longer viewed as some secretive, mysterious technique that police from the United States of America exclusively indulge in when seeking to solve high-profile aberrant forms of crime. Although popular culture representations of criminal profiling still mostly favor such depictions by emphasizing this context, the reality is that individuals from a range of occupational and disciplinary backgrounds from around the world are involved in the practice loosely referred to as "criminal profiling." Different nomenclature is adopted from time to time to describe essentially the same practice such as "offender profiling," "psychological profiling," "personality profiling," and "crime analysis," and indeed different techniques are often employed, but nonetheless as an endeavor profiling has expanded both in application and in popularity across the world.

Criminal profiling has evolved chiefly because researchers and commentators from around the globe have spent many years examining the perpetrators of serious crimes such as murder, rape, and arson. In particular, they have concentrated their efforts on studying the motivations and actions of violent offenders while seeking to document the experiences of both the victims and the perpetrators of crime. Many have also sought to assess the input of investigative experience employed in criminal investigations and the influence of expert witnesses on jury decisions and examined at length the assessment and treatment of the protagonists of crime. Although many practitioners such as criminologists, sociologists, psychologists, psychiatrists, and police have devoted much of their time to examining these important issues, many have done so within the context of criminal profiling and how such studies can better inform the practice of profiling.

Criminal profiling at its core is concerned with understanding crime from the perspective of both the perpetrator and the victim. Specifically, it is concerned with identifying, that is, predicting who is most likely to offend in

given ways and who may be most at risk in terms of being a victim of crime. Societies all around the world have historically been interested in understanding and explaining the phenomenon of crime and its myriad of manifestations which is why perhaps the profiling of all manner of crimes has gathered so much interest around the world and continues to occupy our collective fascination.

This book has sought to focus this interest in criminal profiling by bringing together some of the more interesting analyses undertaken in countries such as the United Kingdom, the Netherlands, Finland, France, Belgium, Canada, Italy, Switzerland, Australia, and of course the United States of America by drawing together the work of international authors in the field of criminal profiling. Put simply, the aim of this book is to highlight differing perspectives and challenges in profiling by discussing work that has been undertaken to date and identifying the research that remains to be done if criminal profiling is to be developed into a robust, scientific endeavor. This book is not confined to examining simply the various applications of profiling and discussing the various techniques it employs but endeavors to explore the legal and policy dimensions concerning its admissibility in various criminal jurisdictions and the theoretical assumptions underpinning its practice. The broader intent of this book is to encourage continued interest in criminal profiling with the view to promoting its further development to the point where it can be used in a reliable, responsible manner. Ultimately, it is hoped that criminal profiling will assist in improving our comprehension of crime in its many and varied forms and help societies the world over to prevent and combat crime in the future.

Richard N. Kocsis, PhD

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Notes on Contributors

ERIC BEAUREGARD PhD is an assistant professor in the Department of Criminology at the University of South Florida, USA. He has been involved in the assessment of sex offenders for 8 years while working as a clinical criminologist for the Correctional Service of Canada. His research and clinical work center on sex offenders, sexual homicide, psychological and geographic profiling, and the hunting process of sex offenders.

ALEKSANDRA BELOFASTOV has a Doctor of Psychology degree in Clinical Psychology (with a specialization in Forensic Psychology) from Monash University in Victoria. She has been working in a medium/low-secure forensic mental health hospital in the United Kingdom for over 3 years. Her clinical work involves the assessment and treatment of individuals detained under the Mental Health Act (1983); many of whom have committed sexual offenses. Clinical and research interests include psychological understandings of symptoms of severe mental illness and their potential relationships to criminal behavior, rehabilitation utilizing the Good-Lives framework, and victim-related issues.

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JOCELYN BRINEMAN received her BA in Psychology from the University of North Carolina Wilmington and is presently completing her PhD in Clinical-Health Psychology at University of North Carolina at Charlotte. Her research

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RAY BULL PhD is a professor of forensic psychology at the University of Leicester. His major research topic is investigative interviewing. In 1991, he was commissioned by the Home Office (together with a Law Professor) to write the first working draft of the *Memorandum of Good Practice on Video Recorded* document *Achieving Best Evidence in Criminal Proceedings: Guidance for Vulnerable or Intimidated Witnesses, Including Children* (ABE). In 2002–2003, he led the small team commissioned by government to produce an extensive training pack relating to ABE. In 2004, he was commissioned by the Scottish Executive to draft guidance on *the taking of evidence on commission.* In 2005, he received a Commendation from the London Metropolitan Police for *innovation and professionalism whilst assisting a complex rape investigation.* He has authored and co-authored many articles in quality research journals and has co-authored and co-edited many books including *Investigative Interviewing: Psychology and Practice* (1999—a second edition is now being written). In recognition of the quality and extent of his research publications, he was, in 1995, awarded a higher doctorate (Doctor of Science). *Interviews With Child Witnesses for Criminal Proceedings*. He was part of the small team commissioned by the Home Office in 2000 to write the 2002 government.

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JAMES S. HERNDON has a PhD in industrial/organizational psychology from Old Dominion University and EdD in counseling psychology from the University of Sarasota. He has been a police psychologist for 20 years. He served as the Staff Psychologist for the Orange County (FL) Sheriff's Office from 1992 to 2002. Prior to that, he was the Executive Director of Police Psychological Services of Hampton Roads, Virginia. He is a Past President of the Council of Police Psychological Services (COPPS) and a Past President of the Society for Police and Criminal Psychology (SPCP). He holds a diplomate in police psychology from SPCP and is the Chair of the Diplomate Committee. He serves on the editorial board of the *Journal of Police and Criminal Psychology*. Additionally, he holds diplomate status from the American College of Forensic Examiners. He currently consults with law enforcement agencies on organizational and operational issues and serves as an adjunct professor at four colleges and universities in Florida.

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CAROLINE B. MEYER finished Basel University Law School in Switzerland in June 2001 (M. Law summa cum laude), after being editor of the University's Law Review for two years. From 2001 to 2004, she was employed as a scientific research assistant at Basel University and as a tutor for students in private and criminal law; published papers and book chapters. In 2003, she began her PhD project on comparative law approach regarding personality and publicity rights in North America, Germany and Switzerland. The same year, she was elected by the government of Basel as chairwoman of the Dispute Resolution Tribunal on Landlord and Tenant Law. In 2005 and 2006, she clerked at a well-known law firm (where she is presently working again) and at the Criminal and the Civil Court in Basel in preparation for the Swiss bar exam. Her thesis was completed and submitted in March 2007. More information is available at www.criminalprofiling.ch.

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PART I

PROFILING CRIMES OF VIOLENCE

Chapter 1

Homicidal Syndromes
A Clinical Psychiatric Perspective
George B. Palermo

Summary

After a brief review of pertinent sociological, neurological, and psychological theories of crime, an overview of the various types of single and multiple homicides is presented. Anger and uncontrolled destructive hostility are thought to be the basis of homicidal acting-out in all groups.

INTRODUCTION

Homicide, the taking of one or more human lives, is the worst manifestation of interpersonal violence and often mirrors the personality of the offender. Great passion and emotions are frequently behind the act of murder. Holmes and Holmes summarized well the personality of the violent offender as the "result of a special combination of factors that include biological inheritance, culture, and environment as well as common and unique experiences. Because of this unique combination, the violent personal offender will commit crimes as an outgrowth of an existing pathological condition" *(1, p. 46)*.

Homicide, from the Latin *homicidium*, is a term composed of *homo,* meaning "man," and *cidium* derived from the verb *caedo*, meaning "to cut" or "to kill." From a legal point of view, there is a difference between homicide and murder: homicide is defined as "the killing of one human being by another," whereas murder is "the crime of unlawfully killing a person, especially

with malice aforethought." *(2)* There are various types of homicide, including intentional homicide, manslaughter, reckless/negligent homicide, felony and suspected felony homicide, argument-motivated homicide, and homicide due to unknown motives. Homicide may be further differentiated into single or multiple homicides. Examples of single homicides are parricide, spousal homicide, jealous paranoia homicide, filicide, matricide, patricide, and drive-by shootings. Multiple murders are classified as mass murder, spree murder, and serial murder.

From an epidemiological point of view, we encounter social periods with varying levels of homicide. These fluctuations are the result of different factors. One can safely say, however, that the frequency of homicide generally reflects not only the character of the person who commits the homicide but also the moral and socioeconomic status of the society in which he or she lives.

From a historical point of view, homicide is part of humankind. It is ubiquitous and has been reported since earliest recorded history. Although initially it may have been a means of protecting one's property or of providing food for one's family, over time it has become a predatory means of carrying out vengeance at all social levels (e.g., Cain's killing of Abel or present-day kidnappings and killings for political reasons). Great writers, such as Dante, Shakespeare, and Dostoyevsky, have rendered immortal famous and infamous homicidal acts in their works *(3)*.

In an attempt to reach a better understanding of such destructive types of behavior, various theories have been proposed to examine factors thought to be at the basis of homicidal violence and violence in general: sociological theories, neurobiological theories, and psychological theories. Thus, as can be seen, the approach is a multifactorial one.

SOCIOLOGICAL THEORIES OF CRIME

Sociological theories that have attempted an interpretation of homicidal violence are many, including those of Lorenz *(4)*, Sutherland *(5)*, Durkheim *(6)*, Merton *(7)*, Reik *(8)*, and Glueck and Glueck *(9)*. Wolfgang and Ferracuti *(10)* asserted that homicidal tendencies belonged to the so-called subculture of violence. They claimed that this behavior is typical of urban ghettos, a mixture of learned violence and social rebellion against blocked opportunities and the inability to obtain occupations commensurate with their skills. Others, such as Foucault, Rousseau, and Marcuse, viewed violence as the consequence of a social vacuum *(3)*.

Homicide is more frequent in large and medium-sized cities, where stress may, at times, cause people to give vent to violent homicidal impulses, especially when the individual is in a state of disinhibition because of drugs

or alcohol. Merton's strain theory of violent aggression can well explain such behaviors *(7)*.

Homicide is present at all levels of society. It seems, however, that there is an inverse rapport between social status and homicidal tendencies. Scholars have found that individuals at risk of committing, or who have committed, homicide are likely to be members of socially dysfunctional families, live in substandard economic conditions, and tend to use drugs and alcohol and to behave antisocially. These persons are socially dysfunctional and are subject to social emargination *(3,11)*.

Other factors contributing to homicide, frequently found among the violent/antisocial group, are poor school achievement, lack of specific skills, and lack of steady employment. Langevin and Handy *(12)*, in a 1987 study, found that perpetrators of homicide are frequently unmarried (50% less than the general population). Daly and Wilson, analyzing the relationship between homicide and family (intimate homicide), noted that the homicidal offender usually does not kill consanguineous family members, but their homicidal fury is more likely to be directed at acquired relatives, such as a spouse or in-laws *(13)*.

In the 1970s, Abraham Maslow *(14)* proposed a theory of basic needs—what he believed to be fundamental for each individual to achieve social maturity. They include physiological needs (hunger, thirst, sleep, etc.), personal security, affection/love and self-esteem, and a chance to achieve the highest level of social maturation possible for the individual in a progressive fashion. If one believes that the satisfaction of the above needs is necessary for good social development, one can argue that frustration at any of those levels may lead to antisocial behaviors, one of which may be homicide. In other words, Maslow's theory may also be applied to explain cases of homicidal violence.

Personal space is often equated with a sense of security. Lorenz *(4)* and Ardrey *(15)* found that even the primate subjects of their experiments cherished their own shelter and tended to fight away unwelcome strangers. We all recognize the importance of adequate space when in an overcrowded situation. That space may be a room, a house, or even a nation. Wars have been fought claiming the necessity for space. However, limiting the discussion to the overcrowding of a home, or even a jail cell, there can be no doubt that it may be an incentive for arguments and physical struggle, often with deleterious consequences. Correctional institution management is quite aware of the so-called vital space, and some US federal judges have ruled that prisoners need 60 square feet of cell space *(16)*.

Sociological theories have taken into consideration economic and social opportunities when trying to explain the rise and fall of homicidal violence. In fact, microlevel interpersonal dynamics may be influenced by macrolevel social dynamics. The latter factor may include blocked opportunities, the consequence

of economic frustration, and/or the unequal distribution of economic possibilities and their restrictive realization. Only rarely expressed socially, this type of homicidal violence is frequently acted out in the domesticity of a person's home, and the victims are well known to him or her. Exceptions to this are found in those adolescent violent crimes in which the victims are strangers—in some mass murders, in sexual killings, and even more so in serial killing.

Messner *(17)* subscribed to the possibility that economic inequality is positively related to the societal level of homicide. Durkheim *(18)* asserted that as a society becomes larger, it becomes progressively more heterogenous and differentiated, and instead of benefiting from competitive individuals or group contributions, this may lead to an apathetic stance and anomie. It is such a state of anomie that breeds homicide.

Chamlin and Cochrane, subscribing to the ideas of Messner, are of the opinion that "ascribed economic inequality undermines the legitimacy of the social order…[and society] simultaneously loses its moral authority and thereby the capacity to regulate the behavior of [its] members…[and] will be positively related to homicide rates…" *(19, p. 22)*. Although it should be recognized that ascribed/illegitimate economic inequality may undermine the moral authority of a conventional society, as proposed by Chamlin and Cochrane, this author believes that it is only partially and indirectly responsible for the fluctuation in the rates of homicide.

Both social and psychological factors contribute to homicidal aggression. Bergson recognized this when stating that society may exert a constraint on violent people, he rightly added, "For society to exist at all, the individual must bring with it a whole group of inborn tendencies; society, therefore, is not self explanatory, so we must search below the social accretion" *(20, p. 270)*. Below that social accretion, there are people with their individuality who remain unknown in their totality because of the complexity of their nature.

From Lombroso's long-outdated theory of the born criminal to the more recent dyscontrol theory of Menninger, the act of murder, short of those cases in which there is premeditation, organization, and clear planning, is viewed today as the outcome of an individual's disorganization and his or her incapacity to control basic dangerous impulses, internal or external *(21,22)*.

NEUROBIOLOGICAL THEORIES OF VIOLENT CRIME

Neurobiological theories attempt to explain homicidal violence as the result of neurohumoral dysfunction at the level of the brain, with the involvement of the amygdalae, the hippocampus, the hypothalamic nuclei, especially the preoptic area, and also the prefrontal lobes *(23)*. Investigative

biology has pointed out the involvement of above brain areas in the homicidal syndrome, including also the limbic system and the mid-temporal region, which are the sites of emotional trigger zones. The controlling influence for emotional reaction resides in the prefrontal cortex, which exercises cognitive control and regulation of affect. Early damage to the fronto-orbital cortex is frequently associated with behavioral and affective changes. In addition, the dysfunction of several neurotransmitters, such as acetylcholine, dopamine, and serotonin at brain level, may predispose an individual to uncontrolled violence. It is well-known that the above dysfunctions are contemporaneous to electrical discharges, especially in the limbic system. The violent individual may also possess a personal predisposition to a destructive type of behavior when exposed to or under the effect of negative environmental noxae.

Prefrontal lobe dysfunction is not infrequent in the homicidal person. Usually, these offenders show impulsivity, lack of control, an inability to modify or control their tendency to antisocial behavior, poor objectivity, poor discriminative capacity, and a lack of appreciation of the consequences of their actions or an inability to properly assess the situation with which they are confronted. At times, like "good" psychopaths, they place themselves above the law. Alcohol, cocaine, ecstasy (recently), and the large group of opioids may act as co-factors in precipitating their often-destructive violence by disinhibiting self-control.

PSYCHOLOGICAL THEORIES OF CRIME

Violent people show typical personality traits. Those traits are more marked in persons at risk for homicidal violence. They include egocentrism, impulsivity, narcissism, obsessive compulsion, paranoia, sadism, aggressiveness, ambivalence, and emotional lability. These traits frequently form patterns of personality disorders found in homicidal offenders. They are frequent contributors to homicidal aggression and are probably determinant in many cases of such aggression because, in the last analysis, people are assumed to be free to exercise their will and, unless psychologically deranged, are responsible for their decisions.

James *(24)*, more than a century ago, wrote that human behavior can be explained by understanding humankind's instinctive tendencies. Freud *(25)* elaborated on the role that emotions and feelings play in the genesis of hostility in human destructive aggression.He recognized that a libidinal force is present in all human beings, and just as that force may drive one to achieve good goals, it may equally direct one to destructive aggression, including homicide,

by overcoming the control of the superego and the ego and allowing basic negative emotions to be expressed in all their fury.

The most common emotion behind any violent criminal act, and particularly in cases of homicide, is anger. Anger promotes aggressive feelings, and the quality and intensity of the aggression bring about the violence. Many cases of homicidal aggression are reactive because of impulsivity. Frustration and fear and a general behavioral immaturity are often found in those who kill. These are the characteristics found in the majority of homicidal people, people who are thought to be normal in their daily behavior but, because of their inner conflicts, are like time bombs. They suddenly explode, and their destructive fury kills both those known and those unknown to them—intimates and strangers. Rarely do the mentally ill kill others, and when they occasionally do so, they are generally under the influence of delusions or hallucinations.

In a 25-year longitudinal study of homicide and of the relationship between homicide and major mental disorders, Schanda and colleagues *(26)* found that such disorders were associated with an increased likelihood of homicide, especially in males and females suffering from schizophrenia and in males suffering from a delusional disorder. They also found that the increased likelihood of homicide in people suffering from major mental disorders cannot be fully explained by comorbid alcoholism.

BRIEF STATISTICS

The United States has the highest number of homicides among developed countries. However, statistics reveal that it is a rare occurrence: only one-tenth of 1% of the index crimes in 2002 and 1.1% of violent crimes *(27)*. During the same period, 14 of every 10,000 arrests were for homicide, and the clearance rate for homicide was 64% *(28)*. The homicide ratio was 5.6 per 100,000 inhabitants. Victims reportedly knew their assailant in 43% of the cases. The victims of homicide are almost evenly divided between Whites and non-Whites; 77% are male and 88% are adults. In 2002, Blacks were six times more likely to be murdered than Whites *(29)*. Stranger homicides are more likely to crossracial lines than those that involve friends or acquaintances *(30)*.

In 2002, an analysis of single homicides found that Blacks were seven times more likely than Whites to commit homicide. To be more specific, 52.1% of all homicides were committed by Blacks, 45.9% by Whites, and 2% by others. Blacks were approximately 12% of the population at the time. Fox and Levin *(31)* found that homicides committed by Blacks are drug related in two-thirds (66.7%) of the cases and are workplace related in almost one-third (27.2%).

The total number of US homicides dramatically decreased from the 23,040 level of the mid-1980s to 15,151 of 2004 *(32)*. However, the homicide rate jumped 2.1% during the first 6 months of 2005, and it is possible that the annual number will be up as well when compared with 2004. The 2.1% increase mostly involved, but was not limited to, the southwestern states.

SPOUSAL HOMICIDE

Some 4000 American females are reported to be victims of homicide each year *(33)*. Many of them are victims of spousal homicide, the tragic conclusion of domestic violence that involves intimate partners or other family members. Spousal homicide usually follows long-standing verbal, psychological, and physical abuse. The homicide is most often perpetrated by the male against the female spouse or co-habitant. It is the epilogue of frustrated self-realization, a struggle for dominance and despair. Paranoid tendencies fueling behavioral dyscontrol precipitate the killing in most cases. The closeness between the spouses seems to be conducive not only to positive feelings but also to negative ones.

It has been reported that women are more likely to be victimized through assault, battery, rape, or homicide by a current or former male partner than by all other assailants combined *(34)*. One in-depth study of one-on-one murder and non-negligent manslaughter cases across a 5-year period found that over half of the female victims in the study were killed by male partners *(35)*. In 1996, the Federal Bureau of Crime Statistics reported that 1500 American women were murdered by their husband or boyfriend each year *(36)*. Domestic violence statistics from 1997 report that 430 males were murdered by intimate partners (wives, ex-wives, girlfriends, common-law wives, and homosexual partners) compared with 1174 females murdered by intimate partners *(37)*. In 1998, almost 2000 persons were victims of intrafamilial violence resulting in homicide and non-negligent manslaughter *(38)*. In 2000, 1247 women and 440 men were reported to have been killed by an intimate partner *(39)*, and in 2002, in the United States, 1817 females were murdered by males in single-victim, single-offender incidents. Of that number, only 142 victims were killed by strangers *(40)*. In 2004, of those offenders victimizing females, 21% were described as intimates and 34% as strangers. By contrast, of those offenders victimizing males, 4% were described as intimates and 50% as strangers *(41)*. Frye et al. *(42)*, in discussing femicide, found that the deaths were caused by shooting (42%), stabbing (21.4%), strangulation (10.2%), bludgeoning (8%), burning/asphyxiation (6.1%), and others (12.3%). Intimate homicide is reportedly more frequent in rural areas *(19,43)*. Women are often killed during

a pregnancy, and the killers in such cases are most often the biological father of the child or the husband or boyfriend of the victim.

The typology of the perpetrator in cases of intimate violence, male or female, is that of a passive–aggressive, young adult, with poor self-esteem, insecure, and socially inadequate, who occasionally uses drugs and alcohol and exhibits proneness to explosive behavior. The background frequently includes a dysfunctional family, including sexual abuse as a child.

HOMICIDE RESULTING FROM JEALOUS PARANOIA

Domestic violence as described in the section "Spousal Homicide" frequently reflects the psychopathology of the offender. In cases of jealous paranoia, one of the spouses, usually the husband, suffers from suspicious feelings. He expects to be harmed or exploited, is fearful, and believes that other people regard him as an inferior. But mostly, he questions his partner's loyalty and especially sexual fidelity. Often, these feelings have no basis in reality but are a reaction formation to basic feelings of personal inadequacy or repressed conflicts. Control of the victim becomes paramount, and the victimizer may use various forms of intimidation of the partner thought to be unfaithful.

The main characteristic of the person suffering from a delusional disorder of the jealous type is the belief that his or her spouse or lover is unfaithful. This belief is arrived at without due cause and is based on incorrect inferences supported by small bits of "evidence" (e.g., disarrayed clothing or spots on the sheets), which are collected and used to justify the delusion. Men, who are mostly affected by the disorder, are said to suffer from the Othello syndrome. Less than 0.2% of psychiatric patients are affected by it. The delusions of jealousy can lead to significant verbal and physical abuse, and the aggressive attitude at times degenerates to the point of physical injury or even the murder of the suspected unfaithful partner *(44)*. The murderer occasionally commits suicide, at the time of the murder or later. The perpetrator may be addicted to alcohol or drugs. The association between this disorder and alcohol addiction was already reported by von Krafft-Ebing *(45)* at the end of the 19th century.

In homicides of the jealous paranoia type, arguments and discussions disrupt a marginal homeostasis, and the aggressor acts out of sudden rage, committing the ultimate crime of passion. Feelings of shame, humiliation, and loss of self-esteem may precipitate the destructive acting-out, reviving partially repressed rage. In such cases, the homicidal act by the jealous paranoiac is often due to a temporary psychotic break with reality that prompts the sick partner to act in a highly destructive way against the other, often one he or she claims to genuinely love.

FILICIDE

It is not only spouses who are the victims of homicide within the home. In the family, where one would expect to find love and nurturing, children may become victims of their parents' or stepparent's destructive moods or paranoia. In such instances, they are subjected to harsh treatment, at times are injured, and even murdered. The killing of a child may be descriptively and arbitrarily classified on the basis of the child's age at the time of the offense: neonaticide (within 24 hours of the child's birth), infanticide (from 24 hours to 1 year of age), and filicide (from 1 to 18 years). Filicide is further divided into early filicide (age 1–12 years) and late filicide (age 12–18 years). The frequency of neonaticide and infanticide is much higher than that of filicide.

The brutal killing of children, or their exposure to the elements with the intent to cause their death, has ancient roots, both mythological and historical. Children have been viewed as future competitors, the private property of their parents, sacrificial lambs to the gods, or, more simply, as just a bother. Hesiod (eighth century BCE) described the manner in which God Kronos, who personified the sky, believing that his children would dethrone him killed, by swallowing them, all the newborn children he had from Gaia, the personification of the earth. In the well-known Greek tale, Laius, King of Thebes, decreed the death of his infant son Oedipus because of his fear of a prophecy that he would eventually be killed by him. Jocasta, the mother of Oedipus, without the knowledge of Laius, ordered the infant to be exposed, but the baby was saved by a shepherd, raised by another king, and eventually unknowingly killed his father Laius, fulfilling part of the prophecy. In ancient Jericho (5000 BCE), as well as in later Mediterranean cultures such as the Carthaginian and Egyptian, and yet others such as the Gallic and Scandinavian, children were killed by stoning in a sacrificial offering to the gods. Philo, a Jewish philosopher during the early years of the Christian era, reported frequent child killing in his society by strangulation and drowning. It was frequent at the time of the Emperor Constantine in early Rome, as well as in European countries during the 18th and 19th centuries *(46)*.

Studies show that infanticide and filicide have plagued the world in the past and still continue, although to a lesser degree. "The further back in history one goes, the lower the level of child care and the more likely children are to be killed, abandoned, beaten, terrorized and sexually abused," wrote DeMause *(47, p. 1)*. Infanticide continued throughout the middle ages and became quite common in England, where strangling, smothering, neck breaking, and throat cutting were frequent ways of disposing of unwanted children. The reasons for such inhuman behavior were varied but often were poverty, unwanted

pregnancies, or paternal decision. Fathers, in many of the above cultures, held the power of life and death over their children.

Gelles and Cornell in reference to present-day domestic violence, wrote that "people [especially children] are more likely to be killed, physically assaulted, hit, beaten up, slapped or spanked in their own home by other family members than anywhere else, or by anyone else, in our society"*(48, p. 11)*. An analysis of maternal infanticides for the period 1982–1996 by Gauthier et al. *(49)* seemed to confirm the hypothesis that economic stress contributes to such violence, especially in those areas where extreme poverty exists amid extreme wealth. It appears that at present there has been a decline in the rate of infanticide in Black families *(50)*. This is probably because of better socioeconomic conditions, better education, and more agencies devoted to helping women in critical situations, for example, with family counseling or advice on family planning. Unfortunately, however, infanticide rates for White children and children of other racial groups have remained stable. Hopefully, addressing personal and social factors will help make this type of felony a rarity among all groups.

The killing of one's own children is an unnatural act, and the inner motives for doing so are many. The act of neonaticide may be caused by realistic reasons, such as the fear of public opinion in an unwed, young, and immature woman or the refusal of a pregnancy that is the consequence of a rape or incest. Drug or alcohol intoxication of either parent may lead to violent acting-out. It may be the result of deranged mental status of the mother or father or, occasionally, of a depressive reaction of a mother who is incapable of establishing a proper emotional bond with the infant. In a semipsychotic state of mind, the mother sees the child as an intruder, a parasite who is disrupting her life, and, in a highly emotional state, she may kill the child. At times, the infant may be killed by the mother as a retaliatory act against the husband. This is referred to as the Medea syndrome.

Considerable research has been done on infanticide *(51–53)*.Various studies have indicated that when the mother is the killer, her immaturity is the most important reason for the crime. Older children are usually killed by a psychotic parent. One study found that the method used by psychotic women to kill their children was more likely to be with a knife or a gun but that younger children were less likely to be killed with a weapon *(54)*.

Research has shown that there are ethnic differences between Blacks and Whites in cases of filicide; this depends on the racial and economic composition of the city from which the study sample was taken. Goetting *(55)*, in a study of child murder in Detroit, found that the majority of offenders who killed their own children were Black, young, uneducated, and often had a previous

arrest record. The methods and weapons used were drowning or asphyxiation for neonaticide and infanticide and a knife or gun for older children. Most of the mothers who used knives or guns were found to be psychotic. The mothers who committed neonaticide were generally young, unmarried, dependent on their family, were attempting to conceal their pregnancy, or, in some cases, totally denied their pregnancy. Some were socially isolated and were unable to form a good and stable relationship. Women who kill older children are frequently affected by psychotic depression or a schizodepressive illness, as in the case of the widely reported filicides committed in 2001 by Andrea Yates, who drowned her five children in a bathtub.

Marleau et al. *(56)* found in their study that older children are more at risk of being killed by their father, unemployed at the time of the offense, at times separated from his spouse, psychotic, or intoxicated by drugs. However, a recent retrospective study by Bourget and Gagné of paternal filicide in Quebec, for the period from 1991 to 2001, identified 77 child victims of 60 male parent perpetrators *(57)*.

PARRICIDE

Parricide includes the killing of one or both parents or stepparents, grand-parents, or other close relatives. Among the factors at the basis of parricide, whether the killer is adolescent or adult, there are personal and family conflicts, drug abuse, and sexual abuse. Heide *(58)* classified young parricide offenders in three types: severely abused children, severely mentally ill children, and dangerous antisocial children. Le Bihan and Benézéch *(59)*, in a recent analysis of 42 parricides in France, found that most offenders were single and living with their parents. Thirty-five were suffering from paranoid schizophrenia, six from chronic delusional disorder, persecutory in type, with command auditory hallu-cinations. The victims were mothers (49.0%), fathers (40.8%), and grandparents (10.2%). In a recent analysis of parricide, Johnson-Smith *(60)* found that the 10 youths included in the study suffered from psychosocial and psychological deprivation; however, only one was psychotic.

MATRICIDE

In cases of matricide, an offending son often has a symbiotic relationship with his mother. He may wish, with his desperate act, to free himself from his state of dependency on her, a dependency that he believes has not allowed him to grow up. At times, the dependency is mixed with strong Oedipal feelings, for which he feels deeply guilty and angry. Matricide by a daughter may be motivated by feelings of ambivalence in the daughter or by subconscious

feelings of rivalry for the affection of the father. The daughter, as well as the son, may also be suffering from a psychotic break with reality or a chronic delusional disorder.

PATRICIDE

In killing a father, a son or daughter, usually adolescent, may be prey to mixed feelings toward him. The father is often perceived as punitive, restrictive, and unloving. At times, these children are suffering from psychosis, either depressive or schizophrenic in type, or from a paranoid delusional reaction. However, in most cases, there is no evidence of mental illness but simply a passive-aggressive personality disorder with antisocial behavior. It should be noted that in rare cases of matricide and patricide, motives may be a desire for financial benefits.

Although the number of intimate and intrafamilial violence cases is relatively high, the majority of single homicides take place outside the family, frequently on the street or in bars, the result of arguments or fights or as an unintended act during the course of another felony, such as burglary or rape. Drive-by shooting is often a form of immature juvenile bravado, at times a part of gang initiation rites. These last murderers do not usually have a serious psychiatric disturbance but suffer from a chronic maladaptive life style and an antisocial personality disorder. They belong to the subculture of violence.

MULTIPLE HOMICIDE

Multiple homicides are, as is evident from the term, those in which there is more than one victim. They are subdivided into spree killing, mass killing, and serial killing. At times, the spree and mass killers may commit suicide, the mass killer *in loco* (at the place of the homicide), whereas the spree killer is more likely to do so later. The various types of multiple killing differ from one another on the basis of the following:

1. The personality and psychopathology of the killer.
2. The *modus operandi* of the killer.
3. The *locus delicti.*
4. The type of victim.

SPREE KILLING

The spree killer is an individual who embarks on a murderous rampage. His killing takes place within a given period of time, generally hours or days, with an interval, or time break, between the killings. The killer appears to

be under pressure, poorly organized, and hunting for humans. The killer is in the grip of strong emotions and attacks people indiscriminately. Therefore, there is no similarity among his victims, who may be of different sexes, ages, or races. The crimes may take place at different locations. Spree killing has some similarities to running amok, a Malay word that means "out of control" and often equates with suicide. The person who runs amok is usually a man, desperate and weary of his life. It can be opined that the Western spree killer is also basically a desperate suicidal person.

Typical spree killers were Mark James Robert Essex who, in 1972, kept the city of New Orleans under siege, eventually killing eight people, and, more recently, Andrew Cunanan who, in 1997, killed the Italian fashion designer Gianni Versace in Florida after a killing spree across the United States that left four other people dead. Occasionally, it is difficult to differentiate the spree killer from the mass murderer.

Andrew Phillip Cunanan had led a flamboyant life style in San Diego, CA. He was soft-spoken, unassuming, and friendly. Openly homosexual, he craved attention, especially from older, wealthy gay men. At the time of his killings, he led authorities on a massive manhunt throughout the United States. His spree killing was preceded by a personality change, a depressed mood disorder, after he allegedly lost the financial support of his older friends. The rejection apparently caused him to snap. Indeed, in Minneapolis, MN, he killed two former lovers, bashing in the head of one and shooting the other in the head. In his frantic destructive rampage, he killed an older real estate man in Chicago, IL, unknown to him with pruning shears and a saw blade. Later, he shot a New Jersey cemetery worker and, after stealing the victim's car, drove to Miami, FL. In Miami, he shot and killed Versace at the gate of his home as he was returning from buying the morning newspaper. A few days later, Cunanan shot himself to death while hiding on a houseboat in Miami.

The above case portrays well the killing spree of a young person who was unable to contain his anger and his feelings of rejection, lashing out at the world with destructive force, careless of the consequences.

Mass Murder

During the last few decades, people have increasingly become dissatisfied with their way of life. Interpersonal relationships established in a highly mobile society are often superficial and reflect a cultural tendency to excessive relativism and individualism. Many people are overwhelmed by the changes in an increasingly technological world. A sense of insecurity and disenchantment with life is evident among the members of society often leading to feelings of

anger, hostility, and frustration. The above is believed to have contributed to the increase of violence in the United States, including recurrent episodes of mass murder.

Mass murder consists of the intentional killing of a group of people (two or more). Except for the family annihilators, it frequently occurs in a public place, such as a restaurant, post office, school, or anywhere people are assembled together. A common expression for such a type of killing is "going postal." A recent mass murder that concluded with the suicide of the killer took place in a postal facility in Goleta, CA, in 2005. The case was most unusual, in that the killer was a woman *(61)*.

Contrary to random killings, drive-by shootings, and serial murders in which the victims, although numerous, are killed, usually by a single individual, one at a time, mass murder involves the killing of several innocent people at an unknown, unexpected moment and at or about the same time. "Mass murders occur more often in cities, as do, for that matter, homicides in general," asserted Levin and Fox, adding that, "some massacres…apparently occur when the killer breaks under the strain of urban life" *(62, p. 53)*. This type of crime attracts public attention because of its suddenness and the usually large number of victims. Because mass homicides evoke a great deal of publicity, it can be argued that the perpetrator of such crimes suffers from a celebrity mania.

Mass killers can be divided into three major types—family annihilators, pseudocommandos, and hit-and-run killers *(63)*. Motivations vary between altruistic feelings, anger, revenge, and "pay-back" time. Mass murderers often have experienced impaired child attachments and traumatic experiences during their development. They harbor distorted thoughts and fantasies, become isolated, preoccupied, and disregard socially accepted constraints on behavior *(64)*.

At times, the mass murderer's action is viewed as the action of one who went "berserk." Such an expression well portrays the fury of the mass killer at the scene of the crime. It derives from the wild Norse warrior "berserk…grandson of the mythical eight-handed Starkaddes, [who] never fought in armor but in his *ber sark* or bear skin" *(65, p. 174)*. Eventually, the word berserk came to portray a predatory group of brawlers and killers who disrupted the peace of the Viking community between 870 and 1030 AD Norwegian historians write of Berserks, a giant type of people, who, taken by a wild fury, became extremely strong, insensible to pain, irrational, and who behaved like wild animals *(65)*. Their physical strength was thought to be of a superhuman nature. It was later theorized that the Amanita Muscaria mushroom may have induced their irrational senseless destructive behavior, similar to the effect of hashish on the members of Assassin Sect in ancient Persia and Egypt *(66)*.

Mass murderers are mostly White males whose age range is wider than that of serial killers. With an average age range that varies from 15 to 60, almost all mass murderers are males with a racial composition that closely approximates that of the general population *(67)*. They are impulsive in their killing and unconcerned about being captured or killed during their offense. The killer is not concerned with leaving evidence that may lead to his arrest. Occasionally, the mass murderer has periods of obsessive rumination about an undefined destructive act. That gives the impression that the crime is somewhat premeditated. However, although the idea of wanting to kill people, massacre them, may be ruminative in character, the place where the act will take place is not usually preestablished. Frequently, the killer possesses an arsenal of guns—handguns, rifles, and/or semiautomatic weapons. The killer has at times displayed moody, antagonistic, rebellious, frustrated, and violent behavior and has occasionally been under the care of mental health personnel.

Notes, when found, and statements, when given, bespeak deep frustration with perceived wrongs by employers, authority figures, and/or the social system at large. The offense is usually locally limited and non-repetitive. Alcohol use or the use of illicit drugs may be present in the life history of the mass murderer. Because of his sudden acting-out, people at large think of him as having committed a "crazy" act or at least to have been an individual with a shaky inner self, unable to withstand stress and prone to explosive behavior. The mass murder often ends in suicide, but the dynamics in these cases are not like those in the ordinary murder–suicide or in the extended suicide, such as in cases of jealousy, which may be the expression of extreme possessiveness or of misguided altruism as, for example, when parents kill their children to "protect" them from real of imagined dangers but are reminiscent of Samson's death when he killed himself while killing the Philistines, his enemies. It assumes the role of a social protest for perceived social inequities or injustices *(67)*.

In the recent past, younger White males, aged 11–17, achieved sudden notoriety as mass killers in and around schools in the United States. The two groups, adults and adolescents, differ not only in age but in the apparent motivational dynamics of their crimes and in the finale of their actions. The adults frequently commit suicide at the site of the mass homicide or are killed or taken into custody by the law-enforcement officials. Few of the younger age group has so far been reported to have committed suicide at the scene of the crime. Thus far, no study, however, has attempted to analyze any difference in the propensity of adult and juvenile mass murderers to commit suicide after the act.

The young killers, like their adult counterparts, seem to be unable to contain their destructive hostility. Their actions appear to be fueled by fantasies and, as in the adults, their emotions are not well rationalized. Often, the juveniles are reported to be shy, submissive, or aloof, with unconventional behavior, and to have resented parental and authority figures. They are not only angry but in need of self-assertion. Their actions are regarded as unconscionable and are certainly inconsistent and incongruous with their status as young adolescents. Their killing seems to have had strong ludic characteristics. Although the characteristics of both adult and juvenile offenders may show similarities in the homicidal act itself, the juveniles are obviously emotionally immature, although at times apparently bright and cognitively intact. They are reported to have been obsessed with the violent pop culture, music, films, and video games. They gave ample warning signs at home and at school not only with their behavior but through their writings, poems, and, in the case of at least one juvenile killer, a simple last will *(3)*.

Personality-wise, both adolescent and adult killers range from immature to inadequate (as are many adolescents) with a plethora of neurotic feelings to a frank paranoid personality (usually in the adults, mixed with depressive states). Some may suffer from a borderline type of personality, with sudden shifts in mood or panic states and a strong and long-standing antisocial pattern of behavior. Generally, the acting-out is "the culmination of a continuum of experiences, perceptions, beliefs, frustrations, disappointments, hostile fantasies and (perhaps) pathology" *(68, p. 153)*. The above may have been present for some time prior to the offense. There is certainly planning in the politically motivated pseudocommando type of mass murder, and planning is also present in family altruistic mass murder.

Sensationalism is common to the pseudocommando type of mass killers and to some family annihilators. However, this destructive sensationalism reaches its worst in the mass murder typical of terrorism. The September 11, 2001 terrorist attack on the World Trade Center Complex in New York City, and suicide bombings testify to the sadistic intentions of the perpetrators of this modern form of programmed political mass murder.

In summary, despair, revenge, and notoriety seem to be common to all mass murders. The idea of "pay back" time occurs in many cases. These killers, through the vicissitudes of life, often came to perceive society and/or some of its members as responsible for their personal suffering. However, their life history points out their personal psychopathology. They are reported as people who harbored intense destructive hostility which, at a certain moment, they were no longer able to contain.

SERIAL HOMICIDE

The term serial homicide conveys the concept and dynamics of the heinous behavior of the killers. These criminals kill a number of victims over a period of time, with a cooling-off period between each crime. The majority of the killings are intentional, well organized, and highly programmed. The *modus operandi* of the killers generally follows a typical pattern, and their so-called signature is often found at the crime scene. Methods used to kill the victims vary, and include strangulation, asphyxiation, stabbing, poisoning, and rarely a firearm or a blunt object.

Already during their adolescence, in addition to a record of scholastic underachievement, some serial killers exhibited daydreaming, lying, bed-wetting, and aggressive behaviors, such as cruelty to animals, assaults on teachers, and fire setting. Nevertheless, these killers are usually intelligent and meticulous. They are highly sadistic, driven by an intense fantasy life, and often of a bizarre sexual type. Their fantasies play an important role in programming their future destructive actions. They entice their victims using credible strategies and then render them defenseless with the use of physical force or drugs. They frequently engage in sadistic acts and sexual activities prior to and after the killing. It can be theorized that their sadistic behavior is due to their arrested psychosexual development or to a regression to a pregenital stage of development, and to a lack of self-control. Driven by destructive hostility, they often dismember the victim's body, and the body parts are disposed of in various ways. At times, the body parts are kept as mementos or fetishes. Some serial killers report having slept with the cadavers, claiming difficulty in separating themselves from them.

Serial killers appear to be law abiding and socially impeccable. They may be outgoing, as in the case of Theodore Bundy, but generally, they are shy and somewhat withdrawn, as in the case of Jeffrey Dahmer. In most cases, their victims share physical and demographic characteristics, especially in the case of lust killers. Bundy, for example, killed mostly young women, college co-eds, of average height with shoulder length hair of similar color. Dahmer, instead, killed young, athletic-looking, mostly, African-American males.

From a psychological point of view, almost all serial killers are free from psychosis, although a few may suffer from a psychotic illness. Serial killers are subdivided into the *visionary*, who are frequently mentally ill, with delusions and command auditory hallucinations; the *missionary*, who want to rid society of what they see as unacceptable people, for example, the homeless or prostitutes; the *hedonistic* type, who enjoy, more than the killing itself, their sadistic compulsive acts against their victims; the *power-control* type, who

enjoy feeling the sense of power they exercise over their victims; and the *lust killer*, who kills for sexual pleasure *(69)*.

Lust killers are further subdivided into organized, non-social serial murderers, disorganized asocial serial murderers, and mixed type. The personality of the organized, non-social serial killer is usually a mixed one, with aggressive, narcissistic, hedonistic, compulsive, paranoid, schizoid, and depressed features. There is a disconnect between sex and affection in the lust type of killers. The victims are reified. The smaller group of disorganized asocial serial killers usually include individuals who are mentally ill.

In regard to serial murders, there are certain misconceptions that need comment, such as the belief that they are usually sexually motivated; that the killers are primarily male and come from a dysfunctional family; that the killers have a "different" type of thinking; that the victims are powerless; and that African-American serial killers are a miniscule number.

The frequent assumption that all serial killing is sexually motivated does not correspond to reality according to Harbort and Mokros. In a longitudinal descriptive study of 61 serial murders in Germany (54 males and 7 females), they found that only 22 of the offenders "could be identified as sexual murderers because their behavior before, during, or after the offense displayed a strong sexual component" *(70, p. 324)*. The serial killers in their study were of average intelligence and showed "deficit in conflict competency, and a passive, at times hostile, basic emotional state paired with a lack of empathy"*(70, p. 320)*. Only three (5.2%) reported having been sexually abused.

It is the general belief that serial murderers are almost always male. Although the number of male serial killers is certainly larger than the number of female serial killers, a large number of female serial killers have been identified *(68)*. Male and female serial killers differ not only in the motivations for their killing but in their method of killing. Males use more brute force and are more likely to strangle/suffocate, stab, bludgeon, or shoot their victims, who are usually strangers. Female killers are more likely to use poison as a destructive tool and to kill people with whom they are acquainted (family members and husbands). The so-called altruistic homicides by nurses (both females and males) are occasionally reported. Although some female serial killers, such as Eileen Wournos, kill out of destructive feelings of revenge or control, the most frequent motivation for female serial killing is reportedly money *(71)*. Male serial killers kill mostly for sex but also for control and money.

The media generally reports crimes committed by White male serial killers, giving the impression that there are no African-American serial killers. This is inaccurate, and to this effect Walsh recently wrote, "It is one of the mysteries of modern criminology that a group [the African Americans]

responsible for a highly disproportionate number of homicides of all other types has gained a reputation for not producing serial killers, or at least for producing a disproportionately low number of them." *(72, p. 272)*. Walsh, after researching various sources, reported that of a combined sample of 413 serial killers (White and Black), between 1945 and the first 6 months of 2004, 323 were White and 90 were Black.

It is frequently asserted that serial killers come from dysfunctional homes. However, looking at the sociopsychological development of serial killers, one finds that this is not necessarily true. For example, Jeffrey Dahmer allegedly came from a home that was fairly cohesive during the formative years of his life, and Ted Bundy reportedly had a fairly good relationship with his adoptive mother. Nevertheless, many other serial killers claimed to have been neglected by their mothers during childhood and could not establish that emotional bonding necessary to learn what love is.

Because of the failure of bonding, some individuals are not only unable to maintain a consistent empathic relationship with others but also lack a proper mental representation of the self and others. This ability has been referred to as mentalizing or theory of mind *(73, p. 16)*. Its lack brings about moral disengagement, lack of self-awareness, personal irresponsibility, unawareness of the psychological impact of behaviors on others, the dehumanization of others (victims), and their reification—treating them as objects. This is typical of such killers.

Serial killers seem to have a particular cognitive map. They view the world as hostile; they are incapable of properly interacting with others and with the outside world in general. They are trapped in a type of circuitous thinking, which is too introspective, dedicated primarily to stimulating themselves with a very active sexual fantasy life to reduce their inner tension. This reinforces their isolation. Isolation and their continuous fantasies charge their violent acting-out, an expression of narcissistic grandiosity, which temporarily re-establishes a certain degree of inner psychological homeostasis. They hold a fundamentally different view of the world. They go against the basic grain of society, almost like a split personality, and place themselves above society's moral dictates. Some serial killers seem to suffer from the syndrome of clinical vampirism, or Reinfield's syndrome, a bizarre disease of the mind in which an individual feels the need for the blood of a victim—sadistic anthropophagy.

One of the reasons people are fascinated by the stories they hear about serial killers is because it is so difficult to believe that such murderers could live undetected in the community for such long periods. That is because they are shrewd manipulators, and the frequently reported belief that the victims of serial killers are powerless people may be partially supported by the fact that these

murderers are frequently highly cunning in their entrapment of the victim. Their narcissism is frequently gratified by the attention the mass media gives to them at the time of crimes. That makes them feel superior and compensates for their feelings of deep inferiority and their deep-seated fear of rejection. But the crimes of serial killers are not only fueled by such factors or motivated by sadistic sexual drives, as, for example, in the past cases of Gilles de Rais, Madame Barthely, and Jack the Ripper, but by uncontrolled, destructive hostility.

CONCLUSIONS

Psychobiological theories assert that an individual predisposition may be present in the makeup of an individual who kills. Persons who kill another may be suffering from a personality disorder, borderline or paranoid, or an intermittent explosive disorder. At times, being narcissistic, they look for notoriety. They may react destructively to real or fancied motives. In the rare cases in which a mentally ill person commits a homicide, one usually finds distortions and bizarreness of perceptions, delusions, or hallucinated commanding voices.

Environmental and social theories support the idea that violence is primarily a learned behavior and that it is the frequent outcome of social neglect and economic deprivation. For example, the loss of a job and unemployment may be perceived by the individual as social humiliation with consequent feelings of low self-esteem. Anger and depression often follow these feelings.

Anger and uncontrolled destructive hostility are at the basis of homicidal acting-out in all groups. It is difficult to predict homicidal outbursts. Changes in behavior, such as irritability, suspiciousness, and voiced anger, may be warning signs and require close scrutiny. In the ultimate analysis, it is an interplay of biological, social, and psychological factors that seem to offer the best understanding of the behavior of these people. And, because social factors are at play in many cases of homicide, society, as Maslow implied, should become more aware of the basic needs of its members and help to fulfill them.

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Chapter 2

Offender Profiles and Crime Scene Patterns in Belgian Sexual Murders

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Summary

This chapter reports on an original empirical study into the demographic and behavioral characteristics of 33 Belgian sexual murderers. The analysis of these offenders and their crimes identified two broad offense templates that typically characterize these crimes. These were, respectively, labeled "opportunistic-impulsive" and "sadist-calculator." The similarities these templates bear to other international models in the area of sexual murder are also considered.

INTRODUCTION

Sexual murder represents one of the most reprehensible forms of crime that still continues in modern society. Defining what exactly is meant by this term however, is not as easy or as clear as one may initially expect. Indeed, many labels continue to be used, often interchangeably, to describe this phenomenon in a nebulous fashion. A few examples include "lust murder," *(1)*, "sadistic murder," *(2)*, "lust killing," *(3)*, and "sexual murder" *(4)* to name a few.

Further compounding this problem of terminology are the various criteria that are sometimes relied on for the definition of what may or may not constitute a sexual murder. For example, Ressler et al. *(5, p. 275)* define sexual murder

using such criteria as, but not limited to, the "victim's attire or lack of attire" or whether there is "sexual positioning of the victim's body." Arguably, the interpretation of such criteria can be quite subjective to the point of being redundant. A victim's attire or lack of attire, for example, could be interpreted quite differently from one victim to the next depending upon a host of circumstantial factors. Similarly, what exactly constitutes "sexual positioning" of a victim is also, arguably, open to individual interpretation and thus difficult to objectively gauge and quantify in the context of scientifically grounded analysis.

Notwithstanding the differences in terminology and definition, a number of scholars have endeavored to examine this crime phenomenon (which will hereinafter simply be referred to as "sexual murder") often with reference to the development of various taxonomies and/or typologies. One of the more prominent taxonomies, particularly in the context of criminal profiling was proposed by Douglas et al. *(6)*, who articulated the classification of sexual murders by four, presumably distinct, subcategories. The first of these subcategories was the "organized" sexual murderer and relates to offenders whose crimes are described as being planned and methodical. Consequently, offenders may use confidence tricks to approach a victim. The second subcategory entitled the "disorganized" sexual murderer represents the antithesis of the organized category with these crimes typically being unplanned and often spontaneous in nature. A third category referred to as the "mixed" sexual murderer accounts for crimes that may reflect aspects of both organized and disorganized characteristics, whereas the fourth category entitled "sadistic" murderer describes crimes where the offender apparently derives pleasure not from any sexual act, *per se*, but rather the torture inflicted on the victim. This form of murder typically requires a secluded location to prolong the period of time the offender spends with their victim.

Another notable taxonomy development in the study of sexual murders is the work of Malmquist *(3)*, who adopted a psychiatric viewpoint in the classification of sexual murders. Malmquist *(3)* nominated three subcategories. The first of which was entitled "rape killings" and was used to describe murders with a sexualized theme. These appeared to be centered around rape/intercourse with the victim. The second category was entitled "lust killings" to describe murders which were overtly sadistic in nature. The third and final category was referred to as "killings to destroy evidence" and accounted for crimes where the evident purpose for the murder was to impede any police investigation.

Subsequently, Kocsis et al. *(7)* nominated four distinct patterns of behavior (or categories) to sexual murders entitled "predator," "rape," "fury," and "perversion." However, pivotal to Kocsis et al.'s typology was the identification

of a constellation of behavioral features that were said to be common to all four of these patterns. Most notable among Kocsis et al.'s typology are the "predator" pattern that describes an organized sadistic pattern of behavior and the "fury" pattern that is indicative of an impulsive almost spontaneous murder.

In the same year, Beauregard and Proulx *(8)* also created a dichotomous classification of sexual murders [later published as Proulx et al. *(9)*], which was comprised of the "sadistic" and "anger" categories. The central feature of the "sadistic" category is an offender who typically plans the murder of a victim with whom he is not previously acquainted. Some of the inherent behavioral dynamics to this category include humiliating the victim, the use of restraints, and the mutilation of the victim's body. In contrast to these attributes, the "anger" category describes murders that do not appear to be premeditated. Accordingly, the use of restraints, for example, does not tend to occur as frequently. Interestingly, however, these offenders may have some acquaintance with the victim and may also humiliate and/or mutilate the victim's corpse.

Recently, Schlesinger *(4)* brought a psychodynamic perspective to the classification and study of sexual murders with crimes being considered in terms of sex drive, fantasies, and conscious/subconscious psychodynamics operating within the offender. Schlesinger *(4)* focuses on the sexual pathologies under-lying these offenses and distinguished these crimes as being either "catathymic" murders or "compulsive" murders. "Catathymic" murders generally feature sudden acts of violence induced by underlying conflicts, which erupt with some trigger. In contrast, "compulsive" murders are determined entirely by internal psychogenic factors within the offender with little environmental influence. The urge to commit murder is powerful and tends to be for purposes of repetition. The sexual motivation here is a fusion of sex and aggression, so that the violent acts are themselves eroticized.

The objective of this study was to add to the body of literature in the psychocriminological study and classification of sexual murder offenses by undertaking an empirically grounded examination of these crimes within the territory of French-speaking Belgium. Such an endeavor, to the authors' knowledge, represents the first of its kind. Furthermore, the study provides an opportunity to comparatively explore the correspondence (if any) between sexual murders from a European sample with some of the aforementioned typologies, many of which originate from North American populations *(10,11)*.

Before embarking on this study, it was necessary to establish some param-eters. One criticism of some of the previous research in this area is that there may be an over-representation of recidivistic offenders (colloquially referred to as "serial killers"). Indeed, Beauregard and Proulx *(8)* contend that the majority of studies on sexual murder are, in fact, too reliant on samples of serial killers

(10,12,13) and thus more representative of a subcategory of sexual murder. That is, such studies may not be a valid reflection of sexual murderers, as a whole, as many crimes of sexual murder may not necessarily involve some of the behavioral and/or motivational features that are typically associated with serial killers.*

In line with these concerns, a broad conceptualization of sexual murder was adopted for this study by using offenses that can be classified as "sex-related" murders. This nuance in terminology is designed to be less reliant on the inference of motivational factors in the offender(s). Thus, cases incorporated into the present analysis were not dependent on the inference that the primary motivational factor within the offender was, for example, the pursuit of sexual intercourse, and so on. Instead, murders were considered on the basis of whether they featured a sexual component at some juncture in their perpetration. Thus, the murders could potentially be initiated for any number of motivational factors, such as financial gain or revenge, but may have become sexually oriented.

Accordingly, this study adopted an exploratory perspective in examining the biographical, psychological, and sociodemographic characteristics of Belgian murder offenses that featured a sexual component during their commission. However, beyond a purely descriptive consideration of these crimes, the frequencies and commonalties, if any, between these offenses were also explored to allow for the consideration of potential links between offenders and the features of their crimes. Finally, this study also sought to examine the presence of any cohesive patterns or themes in the crimes that might be suggestive of offense templates analogous to the typologies of sexual murder crimes previously discussed.

METHOD

Data Collection

The primary source of data that informed this study was police case files concerning sexual murders. Although police case files represent a rich source of information with respect to the behavioral features evident in a crime scene, other sources of information were also consulted, such as psychiatric reports,

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* For example, according to Ressler et al. *(5, p. 20)*, "serial murder is defined as three or more separate events in three or more separate locations with an emotional cooling off period between murders. The serial murder is hypothesized to be premeditated, involving offense related fantasy and detailed planning."

interviews with neighbors concerning the offender's behavior, and public media reports, where available.

The collection of case files was accomplished by first obtaining *procureurs généraux* authorizations from the cities of Mons, Liège, and Brussels. Next, police officers from the homicide units in the cities of Wallonia and Brussels helped to identify from police archives all possible cases of murder that had involved a sexual component dating back to the year 1980. The cases that were ultimately included in the sample all related to murder that had featured a sexual component (as discussed in the introduction) and had yielded a guilty verdict against the charged offender(s). Thus, the collected data pool related to 33 Belgian French-speaking offenders[†] who were responsible for the murder of 28 victims in total.

Procedures

Two separate but complementary levels of statistical analysis were under-taken. First, descriptive statistical analyses were conducted on the data to identify some aggregated impression of these crimes such as any common demographic features among offenders and their victims as well as behavioral factors that frequently arise during the commission of these sexual murders.

The second level of analysis involved multi-dimensional scaling (MDS) of the data using the Statistica (StatSoft Inc.) software package. The MDS program computes coefficients of association between all variables. These coefficients form a spatial representation of items (with points representing variables). The results of this analysis are portrayed in a MDS map that is comparatively easy to interpret particularly with respect to the discernment of thematic patterns among the variables. This particular method of multi-variate analysis was adopted because of its ability to examine multiple relationships between variables as well as its concordance with other psychocriminological research in this field such as that of Kocsis *(14)* concerning the profiling of sexual murders.

The first step to the MDS analysis involved the development of a dichotomous (i.e., 0 or 1) variable list. The basis to these variables emanated from considering all behavioral variables that may be relevant and/or occur during the course of a sexual murder. This consideration of possible variables was augmented with a review of variable lists that have featured in the liter-ature on sexual murders. Initially, 105 variables were nominated. Not all

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[†] Despite the trawl for suitable cases/data extending over a period of approximately two decades, only a single female offender was identified and on this basis was excluded from the present analysis as a probable statistical outlier.

variables were ultimately used, however, because of their lack of relevance and/or whether they could be reliably determined with respect to the available data sources.[‡] A variable list comprising of 20 offender characteristics and 22 crime scene characteristics was ultimately used. Tables describing each of these sets of variables and their corresponding variable acronyms are provided in the Appendix. Each of the sampled sexual murder cases were then examined and details of each case systematically coded through these dichotomous variables and analyzed using the MDS function of the Statistica program.[¶] For ease of interpretation and to be comparable with previous studies that have employed MDS, a two-dimensional solution was adopted.

RESULTS

As previously indicated, two separate but complementary layers of analyses were conducted. Accordingly, the results of each layer of analysis will be described in turn.

Descriptive Statistical Analysis

OFFENDERS

The age of offenders ranged from 17 to 47 years ($\chi = 29.7$) at the time of their offenses, and each predominantly reported themselves as being of a heterosexual orientation (only one offender reported themselves as being of a homosexual orientation). With the exception of one trio and three dual offenders, all sampled offenders had committed a sexual murder. Fourteen or 42% of the offenders did not have any vocational background with 47% of the offenders coming from large families (a minimum of three children). Precise IQ scores for all offenders were not available, but from the available data, their scores ranged from 69 to 110 with 12 subjects possessing IQs lower than 100 and five offenders with IQs higher than 100. With respect to vocational status, 20 or 60.6% of the offenders were unemployed with 8 or 24.2% being employed in blue-collar jobs and 1 or 3% being identified as a student.

In Table 1, it can be seen that 45% of the offenders were brought up by their grandparents or family services. Thus, the parents of these men had neglected and abandoned them. More than 60% had grown up in a chaotic family environment and in an atmosphere of violence. Myers, Burgess, and

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[‡] For example, the presence of paraphilias within the offenders, etc.
[¶] Readers can obtain a more detailed explanation of MDS analytical procedure from Coxon *(15)*.

Table 1
General Descriptive Characteristics

Characteristic	Description	Percentage
Upbringing	Father and mother	33
	Mother alone	9
	Father or mother with new partner	12
	Grandparents, family services, and so on	45
Neglect and abandonment of child	Yes	45
Out-placed child	Yes	27
Chaotic familial environment	Yes	63
Position of the child in the same family	Sole child	15
	Oldest	27
	2nd child	27
	3rd child	6
	4th child	9
	5th child	6
	7th child	9
Violent upbringing	Yes	66
Got expelled from school	Yes	30
Experienced sexual abuse	Yes	12
Suicide attempt	Yes	32
Financial management	Balanced	27
	Unbalanced	72
Offender living with someone at time of the crime	Yes	48
Free time in bars and coffee shop	Yes	42
Criminal record	Yes (robbery, drunk driving, fighting, etc.)	58
Committed more than one murder	Yes	21
Style of attack	Confidence trick	63
	Blitz	9
	Surprise	18
Killing methods	Gun fire	6
	Stabbing with weapon	36
	Blunt instrument	42
	Strangulation	36
	Cutting throat	6
	Suffocation	27
	Poisoning	6

(continued)

Table 1
(continued)

Characteristic	Description	Percentage
	Death by drowning	21
Sexual activities carried out by offender(s)	Vaginal penetration	75
	Anal penetration	27
	Oral penetration	24
	Fondling	78
	Foreign objects inserted into victim's body cavities	24
	Post mortem sexual activities	21
Position of corpse	Body left in view	60
	Body hidden	51
	Victim or body transported	54
	Body buried	3

Nelson *(11, p. 343)* describe a chaotic background as "parental abandonment or neglect, child abuse, unstable living arrangements with frequent geographical moves, parental incarceration, parental substance abuse, and/or serious parental arguing/fighting." The present findings are consistent with the studies of Ressler et al. *(10)* as well as Proulx and Nicole *(16)*, which found that a large proportion of sexual murderers had been neglected or abandoned by their parents.

Only four or 12.1% of the offenders were found to have been sexually abused as children. This concurs with Proulx and Nicole *(16)*, who reported a low prevalence of sexual abuse. Interestingly, however, this result differs from Ressler et al. *(5)*, who reported sexual abuse to be highly prevalent in their sample.

Twenty-four or 72% of the sampled offenders demonstrated poor financial management (debts, etc.) with half of them living with someone at the time of the offense. Over half or 58.8% of the sample had a criminal record (e.g., robbery, assault, and rape). However, despite many offenders possessing a criminal record, only 12% of the offenders possessed prior convictions related to some form of sexual offense.

The most common form of attack/approach used by the sampled offenders was some form of confidence trick (i.e., *con*) approach, and the predominant method by which the murders were perpetrated involved the use of weapons,

such as a knife or some form of bludgeon rather than a firearm. This general proclivity for the use of a personalized weapon appears to concord with Myers et al.'s *(11)* contention that such weapons may lead to increased psychosexual gratification. The most frequent sexual activities performed during the murders were fondling (78%) and vaginal penetration (75%). Interestingly, 32% of the offenders had also attempted to commit suicide during their lifetime.

VICTIMS

The offenders in the present sample were responsible for the murder of a total of 28 victims consisting of 26 women and 2 men ranging in age from 7 to 84 years ($\chi = 37$). With the exception of one homosexual man, all victims were reported as being of a heterosexual orientation. The various victims possessed quite diverse vocational backgrounds that ranged from occupations such as physicians and lawyers right through to students and prostitutes.

Following the victim classification criteria proposed by Douglas et al. *(6)*, 10 or 36% of the victims would be classified as low-risk victims owing to their daily lifestyles and occupations not typically being associated with enhancing their chances of being targeted for sexual murder. Another three or 11% of the victims were classified as medium risk with the final fifteen or 53% classifiable as high-risk victims. Fifteen or 53% of the victims were previously acquainted with the offender(s) before their murder, and eighteen or 64% of the victims suffered some form of torture and/or physical/psychological abuse before their death.

Multi-Dimensional Scaling

Two maps were produced as a result of the MDS analysis of the data. Diagram 1 presents a two-dimensional map of the variables related to the various offenders' characteristics, whereas Diagram 2 presents a two-dimensional map concerning the analysis of the crime scene variables.[||] Interpretation of the diagrams was undertaken using the "multi-interpretation convergent" method advocated by Tournois and Dicke *(18)*. This method involves consideration of the frequency distribution of the variables as well as the relative proximity of variables in terms of any evident regional distributions.

[||] It should be noted that correspondence analysis was carried out to check the agreement between the results obtained. The closer any two behaviors are on the diagram, the more often they occurred together during a murder. The coefficient of alienation indicates the "goodness of fit" between the correlations and their graphic representation. According to Lundrigan and Canter *(17)*, an acceptable score is between 0.15 and 0.25.

2 Dimension MDS: Offender Characteristics (20 variables)
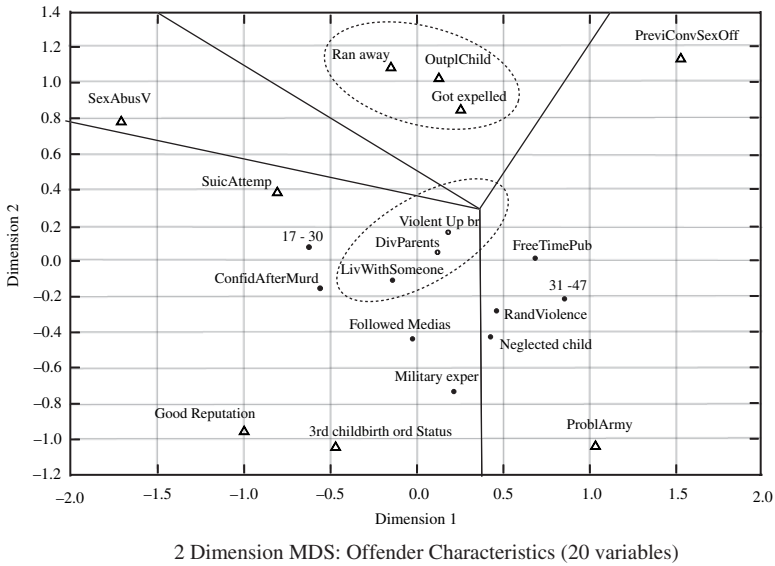
Diagram 1. ∘ Highest Frequency Variables ● Medium Frequency Variables △ Lowest Frequency Variables

Variables were also considered along the broader dimensions of the MDS map as well as whether any cogent clusters of variables were discernible. According to Tournois and Dicke *(18)*, this process optimizes the interpretations that may be drawn from an MDS map.

OFFENDER CHARACTERISTICS

The frequency of crime scene behaviors can generally be gauged by their location within the diagram. Those variables located closest to the center possess the highest frequency with the frequency declining dependent on the location of variables as they radiate outward from the center of the diagram. Starting first with variable frequencies in Diagram 1, three concentric layers were discernible and are identified through the use of differing icons. Variables denoted by a circle icon (∘) represent those of highest frequency and comprise of two variables present in 20–29 cases. Next, the variables identified by black points (●) represent the medium frequency and include nine variables present in 10–19 cases. Finally, the variables identified by a triangle (△) represent the lowest frequency with characteristics present in the sample in 1–9 cases.

The second level of interpretation relates to the consideration of discernible segments within the overall regional space of the variables in Diagram 1. Four areas seemed apparent when the MDS map was examined in

this respect and have been delineated by divergent lines out of a central point in the diagram.

Starting with the large region in the far right of Diagram 1, this area includes six variables including a previous conviction for sexual offenses, spending free time in pubs (i.e., bars), the offender(s) being aged between 31 and 47 at the time of the crime, the offender being neglected by their parents, inflicting random violence during the crime, and experiencing problems in the army and/or being discharged. These variables generally appear to refer to the failure of the offender(s) to successfully integrate into society and thus can be conceived of embodying a theme of *social inadaptability*.

The next discernible region is that in the bottom left of Diagram 1 that consists of eight variables. These include the offender third or more in childbirth order status, having a good reputation, having military experience, following the crime in the media, feeling confident after the murder, living with someone at the time of the crime aged between 17 and 30 years, and having made a previous suicide attempt. The overall theme to emerge from these variables seems to relate to individuals who are at the start of their adult lives and are trying to integrate into society. Accordingly, this region can be thought of as a "conformism" region.

A third much smaller region to the top left of Diagram 1 is comprised of only a single variable "SexAbusV" (whether the offender reported a history of sexual abuse). This variable is only present in four offenders, and it is difficult to link to other variables or other regions. The variable "SuicAttemp" shares some proximity to this variable, suggesting that the three offenders who were sexually abused had also previously attempted suicide.

The final region is located in the top center of Diagram 1 and includes five variables, these being running away (from home), being an out-placed child, getting expelled from school, having divorced or separated parents, and having a violent upbringing. These variables refer to the tumultuous past of the offender and are apparently linked. About one-third of the sample displayed these features; however, Diagram 1 also shows that this region is near the sexual abuse and previous conviction for sexual offense variables. It can be seen that many delinquents demonstrate these characteristics in their history. Accordingly, this region can be conceptualized as a *delinquent or problematic youth* region.

In considering this regional interpretation, we can hypothesize that from a core set of circumstances arise three apparent destinies. That is to say, from core experiences of having divorced or separated parents and a violent upbringing, there were three general paths these offenders lives seemed to follow. First, there were those offenders who had become delinquents (having run away, having been an out-placed child, and having been expelled from school). Secondly, there were those who had become socialized, well organized,

and who exhibited more self-control (they lived with someone else, they had a good reputation, they followed the media, etc.). Thirdly, there were those who had become socially maladjusted, disorganized people (spending their free time in bars, having problems in the army, using random violence in the murder, and having a previous conviction for sexual offenses).

These three general themes seemed to be consistent when a dimensional interpretation of Diagram 1 was also undertaken. Thus, the idea of a core background (violent upbringing and divorced or separated parents) that applied to two-thirds of the offenders is supported by several sets of data. Firstly, there is the set of "socialization problems" (spending free time in pubs and experiencing problems in the army) and, secondly, the set of "relationship to oneself-narcissism" (having a good reputation, following the crime in the media, confidence after the crime, and, at the extreme, a suicide attempt). Thirdly, there is the variable of self-disclosed sexual abuse. Finally, there is the set involving social integration difficulties in childhood and adolescence (running away, getting expelled from school, and being an out-placed child).

We can observe that two variables are situated at the two extremes of Diagram 1: self-disclosed sexual abuse and a previous conviction for sex offenses. One might assume that these two "sexual" characteristics would be good predictors for someone committing a sexual murder, but the positioning of these two variables shows that this is not the case.

Finally, two clusters of variables seem apparent in Diagram 1 and have been encapsulated in small dotted ellipses. The first relates to a constellation of variables in the central core of the diagram indicative of a violent upbringing, the offender possessing divorced/separated parents, and of them living with someone at the time of their offense. The discernible second cluster of variables is located at the center top of the diagram and includes being a runaway, being an out-placed child, and having been expelled from school.

CRIME SCENE CHARACTERISTICS

Once again starting with variable frequencies, three concentric layers were discernible in Diagram 2 and have been differentiated through the use of differently shaped icons. The circle icons (○) indicate the highest frequency and show that 20–29 crime scenes commonly possessed these characteristics. These variables constitute the central core set of circumstances for crime scene behaviors. The black point icons (●) represent the medium frequency area. This includes variables that are present in 10–19 crime scenes and are present in half of the sample. Finally, the triangle icons (Δ) represent the lowest frequency, which contain the behaviors that are present in 1–9 cases in the sample. These variables possessed the lowest frequency.
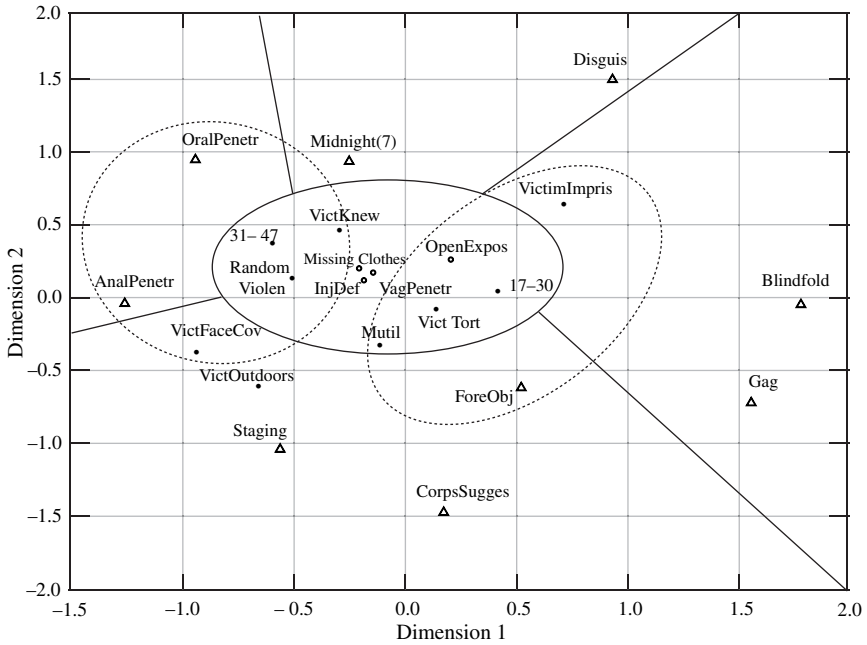
2 Dimension MDS: Offender profile and crime-scene patterns (22 variables)

Diagram 2. ○ Highest Frequency Variables • Medium Frequency Variables △ Lowest Frequency Variables

Next, a dimensional interpretation along the horizontal axis in Diagram 2 could be labeled (from left to right) as acts requiring little preparation and which are lacking in ritualism (e.g., anal penetration, oral penetration, and victim found outdoors) through to acts which require an object and therefore preparation (gag and blindfold) implying perhaps greater ritualism. It could also be inferred that (to the left of Diagram 2) the variables could be grouped under a broad heading of "physical contact is sexualized" and those on the right under "physical contact avoided." Interpretation of the vertical dimension of Diagram 2 starting at the bottom could be seen as representing the "exhibition" of the corpse, the staging of the crime scene, and moving upwards to the top which culminates the "concealment" of the corpse.

Moving next to a regional interpretation, five distinct areas seem evident in Diagram 2 and have been identified with lines drawn in to segment the MDS map. Starting at the top of Diagram 2 is the region we refer to as the "low risk taking" area, which encompasses two variables. These are offenders who wore a disguise during the crime and who acted between midnight and 7 a.m. The level of risk taken by the offenders is low, as there is less danger of

being detected by the police by acting during the night and undercover. These behaviors reflect a level of planning inherent to the crime.[§]

To the right of the low-risk region is the "restraint" area that is comprised of three variables: blindfold, gag, and the imprisonment of the victim.[**] This area shows that the victim is physically constrained, a prisoner, and/or vulnerable.[††] The area at the bottom of Diagram 2 is a region, which can be described as the "position of the corpse" region and is comprised of five variables. These being foreign objects inserted into the victim's body cavities, a suggestive position of the corpse, staging, the victim found outdoors, and the victim's face covered. The suggestive position of the corpse could be a form of staging whereby the offender acted out his fantasies by positioning his victim and inserting foreign objects into her body cavities. The victim is found outdoors because the offender, it appears, decided to transport the corpse elsewhere because he tried to avoid police detection or because it was a part of his ritual. The variable "VictFacCov" (i.e., whether the victim's face was covered) may have a number of possible meanings for the offender. That is, he may want the victim to represent someone else onto whom he projects his fantasies and/or hatred. The offender may also cover the victim's face to conceal his identity and/or as a method to depersonalize the victim by not looking at the victim's face. Sometimes, the entire corpse is covered up. In these cases, the murderer's motive may be to delay the detection of the corpse or to somehow erase the crime (the offender does not see the victim, so it is as though she does not exist).

In the top left area of Diagram 2 can be found the sexuality region that is comprised of two variables: anal penetration and oral penetration. The vaginal penetration variable is in the central core of Diagram 2 with 25 out of 34 offenders performing this behavior. Nine offenders had practiced anal penetration, and seven of these had also practiced vaginal penetration. Indeed, Dietz et al. *(19)* consider anal penetration and *fellatio* to be degrading acts that offenders inflict on victims. Nevertheless, these sexual acts do represent

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[§] One case vignette of these behaviors is Mr. O, who brought and wore a mask to the crime to avoid the possibility of being recognized by the victim.

[**] A case vignette relating to the use of a gag involves Mr. AA and Mr. AB, who kidnapped and imprisoned their victim in the boot of their car. These offenders gagged, blindfolded, and bound the victim's wrists and ankles to keep her captive. They then traveled through several cities with the victim in the boot of the car, intermittently stopping to eat at restaurants and shopping.

[††] Perhaps surprisingly, the gagging of a victim was not the most frequently observed method to silence the victim. Rather, strangulation or suffocation of the victim was most often used to impose silence.

behaviors that are composite to a range of sexual activities that are considered normal. Curiously, the foreign object variable, involving the insertion of objects into the victim's body cavities, is more distant from this sexuality area. It would seem that this behavior is not tied to the sexual act but more to torture or to manipulate the corpse (the variables foreign object and victim tortured are situated close to each other on the MDS map). Insertion of a foreign object also represents a sexual act without physical contact.

The last region within Diagram 2 occupies the central space and can be conceived as the "crime" area. This region includes ten variables, which are subdivided into two parts surrounding the central core. The three central core variables are "missing clothes," "vaginal penetration," and "defense injuries," and these are common to the majority of murderers in our sample. These represent the most frequent actions perpetrated during a sexual murder. Thus, it can be seen that these crimes fundamentally involve sex, violence, and force. Additionally, this region indicates that these murders were perpetrated against a victim with whom the offenders were previously acquainted.

Finally, two clusters seem readily discernible in Diagram 2 and have been identified by a dotted ellipse. The first cluster encircled in the right of Diagram 2 includes the offender being between 17 and 30 years old, tending to more often imprison and torture the victim and to expose the corpse openly, to insert foreign objects into her orifices, and to mutilate the corpse. This group of variables tends to underline a more "sadistic" constellation of behaviors. The second cluster to the left of Diagram 2 is represented by offenders between the ages of 31 and 47 years who typically attack a victim who is well-known to them and to inflict random violence on the victim. These offenders are situated near the less frequent sexual acts (oral and anal penetration) in Diagram 2. These offenders tend to practice three kinds of sexual act (oral, anal, and vaginal penetration) in contrast with the younger offender, who tends to more often only practice vaginal penetration. These variables are more consistent with a "sexual" theme.

DISCUSSION

This study endeavored to examine offender demographics and key behavioral features of sexual murders committed in French-speaking Belgium. In this context, and to the authors' knowledge, it is the first of its kind. The present analysis is important as its sample is an almost total representation of convicted sexual murderers in this part of the country over approximately the past two decades and allows for international comparison with other research conducted on the topic of sexual murder.

The results indicate that among the sampled sexual murderers, there are some commonly recurring attributes as well as some significant differences. In the context of common offender characteristics (which applied to nearly 60% of the sample), it was found that offenders were generally aged between 17 and 41 years, were of a white Belgian nationality, and possessed criminal records. Furthermore, they typically came from chaotic family environments and had what could be described as violent upbringings. In perpetrating the murder, these offenders frequently employed confidence tricks to approach their victims with the crimes often involving vaginal penetration and fondling of the victim.

However, beyond these descriptively common attributes, the results of the MDS analysis also revealed the occurrence of two cogent behavioral clusters (referred to herein as templates) concerning these sexual murders. For descriptive purposes in appreciating the attributes that characterize these templates, they have been dubbed the "opportunistic-impulsive" and the "sadistic-calculator" templates. A description of the distinguishing and shared behavioral attributes inherent to these templates is summarized in Table 2.

Table 2
Characteristic Features of the Two Templates

Opportunistic-impulsive	Sadistic-calculator
Victim known by offender	Victim imprisoned
Victim drunk	Victim tortured
Random violence	Victim bound
Anal penetration	Insertion of object into victim's body cavities
Oral penetration	Suggestive position of corpse
Body left outdoors	Open exposure of corpse
Victim's face covered	Mutilation
Victim aged 1–17 years and/or 31–47 years	Victim aged between 17 and 30 years
Offender aged between 31 and 47 years	Victim drugged
	Blindfold used
	Gag used
	Offender disguised
	Offender aged between 17 and 30 years

The common variables to both templates are clothing missing from victim, vaginal penetration, fondling, defense injuries, and crime committed between midnight and 7 a.m.

The features of the "opportunistic-impulsive" template are somewhat characteristic of an offender who appears to act without reflection in an almost spontaneous manner. Indeed, the sexual component of the murder is generally impulsive, and thus, the offender is simply responding to urges for immediate gratification when an opportunity appears to arise. As an illustration of the "opportunistic-impulsive" template, the following vignette taken from the sample is presented as it exemplifies many of these attributes.[‡‡]

Vignette One

"AE" and his accomplice knew the victim and broke into her home for the purpose of stealing money. The victim, who slept in her living room, was attacked and raped by "AE" while his accomplice restrained her. The victim was killed by strangulation after "AE" and his accomplice had removed the scarves that they had been wearing to conceal their identities. That is, upon the removal of their scarves and, presumably, the realization of possibly being later identified "AE" murdered the victim. The initial purpose of this crime was theft and thus "AE" and his accomplice did not break into the victim's home with an original intent to commit rape and/or murder.

In contrast to these features, the attributes of the "sadistic-calculator" template appear to be suggestive of an offender who engages in more preparation and even exercises caution with respect to the perpetration of the murder. Additionally, these offenders generally appear to be far more sadistic in their acts that frequently display behavioral attributes associated with the infliction of pain on the victim and presumably through such acts the assertion of some sentiment of vengeance and/or retaliation. Once again, a vignette illustrative of the attributes of the "sadistic-calculator" is presented in "Vignette Two":

Vignette Two

"L" was not previously acquainted with the victim but met her in a bar where they were both drinking alcohol. "L" approached the victim and asked her to come to his squat, where he attempted to have sexual intercourse with her. He was unable to achieve an erection and the victim mocked him over this circumstance. "L" became enraged by these taunts and began to savagely beat her as well as engage in a variety of brutal penetrations of her body cavities with foreign objects. These actions and the evident suffering of the victim were arousing for "L". After a period of time "L" dragged the victim into another room where he murdered her

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[‡‡] It should be noted that while vignettes have been provided as illustrative examples of the templates found in this study, the majority of offenders were more representative of some combination of these two extremes.

by crushing[¶¶] her under a door. The squat where "L" carried out the murder was in a comparatively isolated area where he felt quite secure and thus was confident that he would not be disturbed during the course of these events. Accordingly, he took his time in the assault and suffering inflicted upon the victim. "L" possessed a criminal record and was a notorious alcoholic. Psychiatric evaluations of "L" described him as possessing extreme psychopathic attributes.

These two behavioral templates of sexual murders found in French-speaking Belgium demonstrate some interesting similarities with other typologies developed in the study of sexual murders. The "opportunistic-impulsive" template and its seemingly impulsive themes, which are, arguably, not committed with a great deal of planning (but rather in response to satisfy more opportunistic goals/gratification) are not too dissimilar in nature to the "disorganized" offender category proposed by Ressler et al. *(10)*. Furthermore, the "opportunistic-impulsive" template also features some comparable semblance in its themes with the "rape killer" identified by Malmquist *(3)*, the "catathymic" murderer proposed by Schlesinger *(4)*, the "anger" theme nominated by Proulx et al. *(9)*, and the "fury" behavior pattern found by Kocsis et al. *(7)*. Thus, all of these typologies tend to share common themes in describing a sexual murder that has been committed in an impulsive and often opportunistic manner.

Conversely, the "sadistic-calculator" template with its themes of sexual sadism and premeditation is not too dissimilar with other typologies in this area that relate to murders that feature some coherent intent to murder, where the crimes are more premeditated and some aberrant psychosexual drive appears inherent to the offender's behaviors. Accordingly, the "organized" offender described by Ressler et al. *(10)*, the "lust killer" identified by Malmquist *(3)* as well as the "compulsive," "predator," and "sadistic" categories of other respective typologies *(4,7,9)* all share similarities. That is, all of these typologies relate to a more organized and planned murder that accord to some aberrant drive within the offender. Additionally, these typologies often seem to feature aspects of domination and control by the offender with concordant punishment and humiliation being exacted upon the victim.

Perhaps, one of the most intriguing aspects of the similarities between the present analyses with these other typologies is their appearance despite there being some potentially significant variations in the sampling procedures.[§§]

[¶¶] Thus, the victim technically died through asphyxiation.

[§§] Indeed, it is worthwhile noting that a number of studies in the field of sexual murder and particularly criminal profiling do not feature precise descriptions of their sample selection protocols highlighting the need for caution in the theoretical generalizations that can be drawn. An illustration of this point can be seen in the North American study by Dietz, Hazelwood, and Warren *(19)* who examined male sexually sadistic murderers whose crimes all featured the deliberate

Some examples of these differences may include whether the crimes are of a serial or non-serial nature, the typical age of the victims and the offenders, and even the general conception of whether the crimes are "sex-related" or clearly sexualized lust murders.

The emergence of these similarities despite variations in selection criteria suggests that there may exist some fundamental constellation of psychological and behavioral attributes indicative of the human psyche and the behavioral parameters of sexual murders and crimes of sexual violence generally *(20)*. However, exploring these possibilities will be the prerogative and focus of future research and will certainly be dependent on more precise and transferable definitions of what constitutes sexual murder.

APPENDIX

Variable Labels and Description to Diagrams 1 and 2

Offender Characteristics in Diagram 1

Variable icon label	Description
3rd childbirth ord Status	The offender is the third or more in childbirth-order status
Neglected child	The offender was a neglected child
DivParents	The offender had divorced or separated
Violent Up br	The offender had a violent upbringing
SexAbusV	The offender had suffered sexual abuse (self-disclosed)
Ran away	The offender had run away from home
OutplChild	The offender was an out-placed child (i.e., foster care)
Got expelled	The offender got expelled from school
SuicAttemp	The offender had made a previous suicide attempt
Good Reputation	The offender had a good reputation

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torture of their victims to obtain arousal. Behavioral features inherent to these offenders included approaching the victim under a pretense, beating and restraining victims, holding the victim captive, employing sexual bondage, rape, etc. These offenders concealed the victim's corpse, recorded their offenses, and kept personal objects belonging to the victim. Although these actions bear some clear semblance with the "sadistic-calculator" template, the sample of sexually sadistic murderers by Dietz et al. appear to be far more extreme in the degree of sadism and cruelty than any of the offenders in the present sample. A potential explanation for these differences might be that Dietz et al.'s sample was derived more from serial killers who are more predisposed to psychiatric disease and cruelty, and as a consequence, their behaviors and motivations are perhaps more pathologic than those of the offenders in the present sample.

Offender Characteristics in Diagram 1
(Continued)

PreviConvSexOff	The offender had a previous conviction for sex-related offenses
Military exper	The offender had military experience
ProblArmy	The offender had problems in the army or has been discharged
17–30	The offender was aged between 17 and 30 at the time the crime
31–47	The offender was aged between 31 and 47 at the time of the crime
RandViolence	The offender used random violence during the murder
ConfidAfterMurd	The offender felt confident after the murder
Followed Medias	The offender followed his crime in the public media

Crime Scene Characteristics in Diagram 2

Variable icon label	Description
Midnight (7)	The crime was committed between midnight and 7 a.m.
VictKnew	The victim knew the offender
VictimImpris	The victim was imprisoned
Disguis	The offender wore a disguise
Blindfold	The offender used a blindfold
Gag	The victim was gagged
OralPenetr	Some form of oral penetration occurred
VagPenetr	Some form of vaginal penetration occurred
AnalPenetr	Some form of anal penetration occurred
ForeObj	Foreign objects were inserted into the victim's body cavities
Vict Tort	Torture of the victim
Mutil	Some form of mutilation is evident
RandomViolen	The offender used random violence
InjDef	Existence of defensive injury
Missing Clothes	Some of the victim's clothing was missing
Staging	Some attempt to alter (i.e., mislead) crime scene evidence
CorpsSugges	The corpse was in a suggestive position
VictOutdoors	The corpse of the victim was found outdoors
OpenExpos	The corpse was found to be openly exposed (e.g., nude)
VictFaceCov	The victim's face was covered
17–30	The offender was aged between 17 and 30 years
31–47	The offender was aged between 31 and 47 years

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Chapter 3

Profiling Sexual Fantasy

Fantasy in Sexual Offending and the Implications for Criminal Profiling

Dion Gee and Aleksandra Belofastov

Summary

Criminal profiling attempts to understand the behavioral and personality characteristics of an offender and has gained increasing recognition as a valuable investigative procedure. This chapter investigates sexual fantasy within the context of sexual crimes. It opens by providing an account of sexual fantasy, its nexus with sexually aberrant behavior, and how it has been utilized within the domain of criminal profiling. Research that applied grounded theory to develop a tripartite model of sexual fantasy within the context of sexual offending is presented, as well as the implications of the model to the process of criminal profiling. In closing, we argue that sexual fantasy plays an integral role in the development and maintenance of sexually aberrant behavior and can provide important insights into the internal world of the offender.

INTRODUCTION

Criminal profiling has gained increasing recognition as a valuable investigative procedure despite the controversy that surrounds it *(1,2)*. At its core, criminal profiling attempts to understand the behavioral and personality characteristics of an offender through the analysis of aberrant behavior they commit. It is argued that understanding fantasy is an integral part of that process although research investigating this phenomenon within the context of offending generally, and criminal profiling more specifically, is limited. Much of the work to date appears restricted to single-case studies, to acts of sadistic

homicide, and/or theoretical inquiry. As such, the applicability and utility of the phenomena of sexual fantasy to criminal profiling remains opaque.

SEXUAL FANTASY AND DEVIANT SEXUAL FANTASY

Leitenberg and Henning *(3)* have asserted that sexual fantasies can include almost any mental imagery that is sexually arousing or erotic to the individual and which the individual deliberately controls. A more elaborate conceptu-alization depicts sexual fantasy as an imaginative process accompanied by a withdrawal from the immediate demands of the external world and a narrowing in focus of an individual's internal world. Such processes allow an individual to create an elaborate, emotionally anchored, mental picture that has its origins in daydreaming and involves erotica that creates or intensifies sexual arousal *(4,5)*. Researchers have suggested that individuals have core sexual fantasies whose material is organized around a small number of basic themes that are laid down early in life and which closely relate to the sexual experiences of childhood and adolescence *(6,7)*. Accepting that childhood sexual fantasies might evolve from serendipitous activity resulting in sexual arousal or through non-coercive sex play with another child *(8)*, it is also recognized that such fantasies may develop in response to traumatic sexual experiences or from exposure to sexualized environments alongside heightened levels of emotional tension *(9,10)*. Sexual fantasies are noted to become more common and explicit in adolescence *(3)*, wherein an adolescent's experiences and exploration of the range and uses of sexual fantasy is believed to be important in their sexual development *(11,12)*.

Through repetition, often within the context of masturbation and/or other sexually arousing activities that lead to orgasm, an individual's previously incongruous sexual imagery becomes condensed into a coherent sexual fantasy script. This script is a set of rules for predicting, interpreting, responding to, and controlling a set of interpersonal scenes that are meaningful to an individual *(13)*. Hazelwood and Warren *(6)* posited that such scripts comprise a number of key facets that include a behavioral component (i.e., the sexual behavior that occurs within the fantasy), a situational component (i.e., the context in which the fantasized activity is occurring), a relational component (i.e., how the various participants are related within the fantasy), a demographic component (i.e., the characteristics of the fantasized others), and a perceptual component (i.e., how the individual perceives themselves within the fantasy).

One of the more contentious constructs within the sexual fantasy literature is that of deviant sexual fantasy [see Leitenberg and Henning *(3)* for a review]. Unlike general sexual fantasy, deviant sexual fantasies contain themes involving

the intentional infliction of harm in a sadistic/sexually aggressive way *(14)* or themes depicting illegal (e.g., rape and child sexual offenses) and/or socially marginal behaviors. An example includes sadism, which refers to repeated behaviors and fantasy characterized by a wish to control another person by domination, denigration, or inflicting pain for the purposes of producing mental pleasure and/or sexual arousal *(15)*.

An abundance of research has indicated that many individuals who never commit sexual offenses have fantasies that contain deviant sexual imagery *(16–19)* although the acknowledgment of deviant sexual fantasy within community samples varies widely *(17,20)*. Research has also demonstrated that both male and female non-offenders have fantasies of being forced into sexual encounters *(21)* or of forcing sex onto another person *(18,19,20,22)*. If, as this research suggests, deviant sexual imagery is within the realm of "normal" human experience to what extent can such fantasy themes be considered deviant or perverse? Leitenberg and Henning *(3)* have argued that because the majority of individuals who entertain perverse sexual fantasies have little, if any, desire to put them into practice, the notion of deviant sexual fantasy is somewhat of a misnomer. For this reason, researchers have often reserved the use of this term to those situations that involve sexual fantasies that are "statistically" more unusual and sexual fantasies that are associated with socially unacceptable behavior.

In an attempt to overcome the problems associated with the term "deviant" fantasy, the term "offense-focused fantasy" has been used more recently to distinguish offense-based sexual fantasies evident within the sexual offender population from sexual fantasies in non-offending populations *(23)*. At times, the term deviant fantasy continues to be used in this chapter, however, in keeping with the literature.

THE FORMATION OF OFFENSE-FOCUSED SEXUAL FANTASY

Researchers have contended that specific early-life experiences may lead to an inner world of violent thoughts, which in turn may manifest in a desire to act on such thoughts. Anderson *(24)* postulated that the abuse suffered by some children might lend strength to their fantasies, making them more aggressive and instilling a dominant and controlling focus. During such instances, a child may also use fantasy to escape the harshness of reality by entering a world where they have more control over their fears and can act out their abuse against others rather than being the victim *(25,26)*. In the case of repetitive sexual crimes, the content of sexual fantasy often reportedly derives from explicit, protracted, sexually deviant experiences first sustained in early childhood *(27)*. The age of onset, duration, and degree of violence associated with such abuse

may also be functionally related to the likelihood that sexually deviant material is incorporated into fantasy *(10)*.

The empirical bases for the above assumptions are found in the body of literature that suggests many individuals who act out in a sexually aberrant manner engage in deviant sexual fantasy and have themselves been subjected to abuse during childhood *(28,29)*. It is important to add, however, that not all individuals who entertain deviant sexual fantasies have been subjected to abusive childhood experiences. Deviant sexual fantasy can be generated from either internal sources (where the fantasy stems purely from imaginary process) or any of at least five external sources (i.e., an individual's own childhood abuse, pornography, previous sexual experiences, modeled experience, and/or the media) *(30)*.

Ward and Hudson *(13)* posited that the development of deviant sexual fantasy, coupled with the resultant mental picture, constituted the formation of an offense script. Through the processes of mental simulation, cognitive rehearsal, and covert modeling, additional material can be re-worked into the deviant sexual fantasy. By utilizing these psychological processes, an individual can modify those aspects of a fantasy that become boring or unstimulating while savoring the most pleasurable parts of the mental representation, in turn providing a more powerful imagery that can be used as sexual stimuli. Moreover, as the rehearsal of deviant sexual fantasy often accompanies masturbation, sexual arousal may become conditioned to the deviant sexual fantasies *(31)*, which in turn can produce deviant sexual arousal patterns. These "preparatory" sexual fantasies may move an individual closer to the point where they attempt to translate fantasized scenarios into behavior *(7,32)*.

THE NEXUS BETWEEN SEXUAL FANTASY AND SEXUAL OFFENDING

The hypothesis that fantasy facilitates action has led many researchers to express concern over the role that sexual fantasy, and in particular deviant sexual fantasy, may play in sexually aberrant behavior. Despite this oft-argued theoretical nexus, empirical research has yet to identify the potential link between (deviant) sexual fantasy and sexual offending. Most contemporary investigation into sexual fantasy within the context of criminal profiling has been restricted to the classification of offenders according to the specific motives found in their fantasies or has attempted to tease out the potential role(s) fantasy may play in sexual offending. Although the bulk of this work has focused on more excessive and repetitive aberrant acts (e.g., homicide, sadism, and abduction rape), there appears to be a consensus among researchers that supports the presumptive role of fantasy as a causal mechanism in sexually aberrant behavior.

Researchers have contended that sexual fantasy serves numerous integral functions. To quote Meloy *(33)*, sexual fantasy provides a number of positive reinforcers before, during, and after the offense(s): "(a) it sustains pleasure (through memory or imagination) when coupled with masturbation; (b) it reduces behavioral inhibition while physiologically releasing orgasmic tension; (c) it stimulates grandiosity, since all fantasies are perfect, and thus compensating for any felt sexual or relational inadequacies; (d) it stimulates omnipotence, since the fantasy of omnipotent control of the victim is likely imagined; and (e) it allows the perpetrator to practice his paraphilia prior to, or between, behavioral 'try-outs' and the eventual consummation, or repletion of the sexual homicide" (p. 9). Similarly, it has been posited that fantasy can provide the sexual offender with a sense of control, a means for dissociation, a way of inducing or enhancing arousal, and the potential to regulate affect [see Gee et al. *(34)* for a review].

Perhaps the most important, and certainly the most contentious role of sexual fantasy in sexually aberrant behavior, is the degree to which such fantasies facilitate the *enactment* of fantasized behavior. Recently, Ward and Hudson *(13)* suggested that offense scripts, together with mental simulations of offense behavior, might provide offenders with an automatic, goal-dependent action plan, which partially facilitates subsequent sexually aberrant activity. Researchers generally agree that when deviant sexual fantasy becomes part of the offense chain, an individual moves closer to the point where acting on aberrant sexual fantasies becomes a reality. Although deviant sexual interest may be maintained by masturbation to aberrant themes, the intensity of the resultant sexual arousal is seen to decrease as a function of the frequency with which sexual fantasy is used to enhance such arousal *(35)*. Therefore, as the intensity decreases, the "response tendency" (i.e., the motivation to act on the environment) increases *(33)*. At the point where sexual fantasy escalates to a degree whereby the incorporation of further fantasy material fails to produce the desired changes in attention, arousal, or the environment, individuals may attempt to transform their fantasy into behavior. This may be accomplished through gradual and partial enactment in an attempt to stage the fantasy as it was imagined *(15)*.

In those situations where the offender uses deviant sexual fantasy (either implicitly or explicitly) to re-live past experiences, the themes that emerge are reinforced by repetitive activation and rehearsal. As the fantasy scenarios are repeated, each offense, victim experience, and/or sexual behavior become part of the offender's collective fantasy *(6,13,36)*. This collective fantasy is then rehearsed before, during, and after a sexual encounter in order to mentally and sexually re-experience the "high" that was associated with the actual sexual

offense. It has also been contended that re-enactment provides an offender with an opportunity to deliberately plan and simulate escalatory behavior (36). Through mental simulation, an offender can preview anticipated experience and prepare themselves for plausible alternatives. That is, by replaying a scene several times, an offender can develop ways to minimize difficulties and/or problems that may be encountered and desensitize themselves to potential feelings of guilt, fear, awkwardness, and/or embarrassment.

Despite the contemporary advancements in the understanding of sexual fantasy within the context of sexual offending, much of the aforementioned research has been hindered by the complex relationships between deviant sexual fantasy and sexual aggression, as well as the inherent difficulties of investigating these, often internal, constructs within sexual offender populations. Thus, much of the work published to date remains at a more theoretical level of inquiry. Despite these obstacles, there is a continued need for a more comprehensive understanding of the role of deviant/offense-focused sexual fantasy in sexual crimes, which might help to inform the criminal profiling process.

SEXUAL FANTASY AS AN ADDICTION

During the past decade, numerous researchers have conceptualized deviant sexual fantasy as a "process addiction" that drives repetitive sexually violent behavior, wherein individuals become addicted to a certain "peak experience", the achievement of which may become a goal in itself (37–40). Burgess and colleagues (41) have hypothesized that the sadistic serial killer is not only pushed to kill by their thought patterns, but they are incited to murder by an intrusive fantasy life. That is, it is the internal processing and cognitive operations of the repeat sexual murderer that sustain and perpetuate fantasies of sexually violent actions, which in turn lead to continued behavioral enactments and subsequent offending. Fantasy, then, has a complex organizing function and provides the sexual killer with a pervasive sense of control (6).

Anderson (24) also contended that fantasy plays a significant role in the life and motivation of the sadistic serial killer. His thesis posited that offenders were addicted to the use of fantasy and that the strength of this compulsion is what engendered the individual to kill in an effort to preserve the addiction. Arguing his point, Anderson concluded that sadistic serial murder is not an isolated event but rather a logical outgrowth or extension of the serial killer's fantasy life. Therefore, following the initial offense, which can often be accompanied by pleasure resulting from the exertion of power, control, and/or sexual activity with a victim, the offense behavior gives rise to more elaborate thoughts, which are in turn incorporated into, and solidify, the deviant sexual fantasy.

As the offender continues their aberrant acts, they often attempt to make reality match their "idealized" fantasy *(14)*. However, the match can never be perfect, as reality is usually never as satisfying as the "high" experienced within the individual's fantasy *(36)*. Thus, each new offense results in the refinement of the fantasy, a process that, for some offenders, builds to a point where it becomes equivalent to, or as viable as, the external world. Indeed, some researchers have suggested that the sadistic serial killer's fantasy world is so real that they believe they can move between fantasy and reality without needing to distinguish between the two *(26)*.

We suggest that those theories incorporating the "process addiction" hypothesis to account for sexually aberrant behavior lack explanatory breadth. Although many of these theories posit that sexual fantasy has the same inherent properties as other addictive processes (namely, salience, conflict, tolerance, withdrawal, relief, and relapse/re-instatement), the extent to which these characteristics are evident across the population of individuals who engage in deviant sexual fantasy would appear limited. Thus, unlike the theoretical work on sadistic serial murderers, it could be argued that the level of sexual violence present in the majority of deviant sexual fantasies is not as extreme as those seen in sadistic serial murderers. This, in part, may account for the discrepancy between those models of offending that highlight the addictive properties of fantasy and the large proportion of individuals who entertain deviant sexual fantasy content but do not display an "addiction" to fantasy. Moreover, it is also plausible that once the "process addiction" hypothesis has been empirically investigated, the notion will need broadening to encapsulate all sexual fantasy themes and behaviors entertained by sexual offenders.

A TRIPARTITE MODEL OF SEXUAL FANTASY IN SEXUAL OFFENDING

Recent research *(23,30,34)* utilized a data-driven, micro-level analysis referred to as grounded theory to investigate the phenomena of sexual fantasy in adult male sexual offenders. The goal of the research was to construct a descriptive, empirically grounded model to explicate the psychological and physiological processes of sexual fantasy for sexual offenders, as they progress through the various phases of the offense chain. The resultant tripartite model of sexual fantasy in sexual offending (SFSO) elucidates the function, content, and structural properties of sexual fantasy across the process of sexual offending. The model also acknowledges that for a small number of individuals, sexual fantasy played little or no part in their aberrant sexual behavior; however, this

was usually the case for those few individuals who indicated that sexual fantasy was also absent from their everyday experiences.

THE FUNCTION OF SEXUAL FANTASY

At its most abstract, this aspect of the SFSO model highlights four primary functions, together with their nine second-order processes. The primary functions of sexual fantasy in the context of sexual offending are regulating affect, regulating sexual arousal, coping, and modeling *(34)*.

One of the more fundamental functions of sexual fantasy appears to be its ability to regulate an offender's mood/affective state. Unlike previous research that suggests fantasy is primarily used to regulate dysphoric mood, the SFSO model suggests that fantasy can serve a more general function in the regulation of mood/affect and does so in one of three ways. Although some offenders use fantasy to regulate dysphoric mood, sexual fantasy also serves a sensation-seeking function, in that it can be used to elevate an ambivalent mood state and/or to enhance a pre-existing positive mood state.

The SFSO model distinguishes between the two specific ways that offenders use fantasy to regulate sexual arousal. The first acts to induce a state of sexual arousal, a process primarily used as a precursor to masturbation, consensual sexual activity, and/or offending. This provides offenders with a means to shift from an otherwise unaroused state into one that physiologically prepares them for sexual activity. Secondly, sexual fantasy can serve as an adjunct to masturbation or other consensual sexual activity, thereby providing a means of enhancing a pre-existing state of sexual arousal. This type of fantasy behavior is primarily used to shift an offender closer to orgasm and/or intensifying the potency of a particular sexual experience. A particularly noteworthy feature is the degree to which offenders build up a "tolerance" to their sexual imagery. That is, when offenders use specific fantasy themes to induce or enhance sexual arousal over a period of time, the ability of the fantasy to produce the desired state of arousal decreases. This resulted in either an active escalation of the explicitness of their fantasy or a move away from more general sexual imagery toward offense-specific themes.

The ability of sexual fantasy to provide a coping function was achieved in one of two ways, either by allowing for an escape from the realization of a situation or by exerting control over an actual or perceived internal/external threat. The first of these avenues, escape, extends the original construct of dissociation *(36)* beyond the need to merely avoid detection. Within an offending context, fantasy also permits a perpetrator to mentally detach from a particular situation by escaping into their "fantasy world," allowing them to dissociate

during a specific sexual encounter and suppress the realization of their behavior following an offense. The second way fantasy serves a coping function is to provide an offender with a sense of control through the psychological processes of distortion and manipulation. Similar to the role of cognitive distortions, fantasy can be used to legitimize both the content of sexual imagery and the metamorphosis of such fantasies into reality. This process appears to provide some offenders with a means of overcoming their internal inhibitors to offending, by allowing them to maintain close links between fantasized behavior and actual experience. Fantasy can also be used to actively manipulate the characteristics of perceived reality, a process that often occurs through idealization and/or the substitution of fantasy content. The SFSO model unpacks this process by highlighting three ways in which offenders use fantasy to manipulate perceived reality. First, offenders can replace the content of reality (in both offending and non-offending contexts) with idealized images gleaned from other sources (e.g., the media, pornography, and past experiences). Second, fantasy can help restrict the focus of reality, acting to filter out those aspects of reality that are "illegal," "wrong," or no longer arousing. Third, offenders can manipulate reality within fantasy through active substitution. Here, offenders begin with fantasy content that reflects their objective reality (such as a sexual fantasy involving a partner) then actively manipulate one or more characteristics present within the five subcategories of fantasy content, often resulting in an offense-specific fantasy *(23)*.

Perhaps, the most salient function of sexual fantasy within an offending context is its ability to provide a means of modeling experience. The majority of offenders use fantasy as a "mental sketchpad" to re-live experiences (rehearsal) and/or to create new experiences (simulation). In this context, rehearsal connotes the active and/or passive recall and re-enactment of past sexually aberrant experiences, together with a re-experiencing of the emotional and physiological sensations associated with those experiences. Although this rehearsal often occurs within the context of masturbation, it can also occur during consensual sexual activity. Within the self-regulation framework *(42)*, those offenders who explicitly or implicitly engage in fantasy for the purpose of rehearsal appear to fall within the inhibitory (avoidance) offense pathways, at least until the fantasies became more preparatory in nature.

The process of "simulation" provides offenders with a safe means to plan and/or escalate their fantasies. For some offenders, it appears that simulation is meant to provide a purely substitutive process (i.e., there is no desire to act out the escalated fantasies); however, this generally leads to an implicit mode of escalation. That is, although some offenders do not appear to have a conscious desire to escalate their offense behavior, through the inappropriate regulation

of behavior via fantasy, they often fail to inhibit such escalatory processes. For other offenders, sexual fantasy is used in a preparatory manner, providing them with a means to explicitly plan escalatory behaviors for the purposes of re-offending. This process can be construed as acquisitional (approach) behavior within the context of a self-regulation model of relapse *(42)*. That is, the use of offense-focused fantasies leads to the creation of offense scripts that, when activated by internal or external cues, result in sexual offending.

THE CONTENT OF SEXUAL FANTASY

The content arm of the tripartite model delineates two types of fantasy theme: general sexual fantasy and offense-focused fantasy (both non-specific offense fantasy and offense specific fantasy) *(23)*. General sexual fantasy refers to fantasy themes that, while sexual in nature, are unrelated to sexual offending behavior *per se*. Like non-offending populations, the majority of sexual offenders also entertained general sexual fantasies. Offense-focused fantasy describes those fantasies containing sexually deviant material that, if acted out, would constitute a sexual offense. Unpacking this concept further, non-specific offense fantasies are those fantasies where, although the theme of the fantasy would constitute an offense if acted out, the content of the fantasy relates more to general aberrant activities than to a specific offense. Offense-specific fantasies on the contrary delineate specific offense character-istics. That is, they involve particular victim characteristics and/or the acting out of particular offense behaviors with a past, present, or identified future victim.

It may be argued that the use of non-specific offense fantasy appears to provide an important steppingstone to subsequent offending. That is, similar to the disinhibiting effects of pornography *(43)*, the recurrent use of non-specific offense fantasy may allow offenders to desensitize themselves to the offense themes present within their fantasies. These same fantasies may then be used to normalize and/or entrench those offense-specific fantasy themes, thus increasing the potential for the acting out of a particular fantasy.

As the SFSO model moves from an abstract to a more fine-grained analysis of sexual imagery, it distinguishes five subcategories of sexual fantasy content for each general theme—that is, demographic, behavioral, relational, situational, and self-perceptual characteristics. Accepting that each subcat-egory might be conceptualized independently, it is their combination that often determines the overall theme of a sexual fantasy. Moreover, through the organization/re-organization of the five components, sexual offenders can create/manipulate specific imagery into any of the three sexual fantasy categories. For example, by changing the demographic characteristics of the

fantasized "other," an otherwise consensual sexual fantasy theme can be altered into one containing pedophilic content. Similarly, by altering the behavioral and relational characteristics present within a sexual fantasy, an otherwise mundane script can be re-worked into one containing sadistic imagery.

A particularly salient feature of sexual fantasy content is the existence of three distinct interpersonal foci within the relational subcategory. Here, fantasies vary according to how the individual engaging the fantasy perceives the interplay between the various parties within the fantasy. Some fantasies appear to have a mutual focus, where the individual engaging the fantasy gives consideration (albeit often distorted) to the perspectives of all parties in the fantasy. This means that in some instances, all of the parties within the fantasy were perceived as actively participating in and enjoying (or not, as the case may be with sadistic fantasy content) the experience. During other instances, fantasies are more narrowly focused, with the perpetrator concentrating purely on themselves and on meeting their needs. In these situations, the other parties present within the fantasy are generally construed as objects to be used by the offender. In yet other fantasies, the focus is purely on the other parties, who are perceived as either enjoying the contact or, as is the case with more violent/retaliatory themes, ensuring that the other party is suffering in some way. The presence of these foci appear to provide offenders with a way to justify and rationalize their behavior across the offense process and, at the very least, affords them a means to overcome potential internal inhibitors to offending.

THE STRUCTURAL PROPERTIES OF SEXUAL FANTASY

The final arm of the SFSO model identifies eight structural characteristics of sexual fantasy that are evident across the process of sexual offending. At their most abstract, these properties are origin, context, trigger, perceptual modality, clarity, intensity, emotion, and action *(34)*. A salient feature of this arm of the model is the three ways in which an offender attempts to manage the intensity of their fantasies across the offense process. That is, offenders can actively and/or passively escalate, inhibit, or maintain the frequency and extent of their sexual fantasies, thereby exerting considerable control and/or influence over their fantasy behavior.

The model also provides insight into the origin of an offender's sexual fantasies and how previous experiences are incorporated into an individual's sexual fantasy repertoire. The SFSO model distinguishes between two types of sexual fantasy origin: those generated internally from an offender's imaginary thought processes and those that evolve from one of five external sources of sexual imagery (i.e., an offender's own childhood abuse, pornography,

past sexual experiences, modeled experience, and/or the media). As noted in previous research, exposure to these types of sexual imagery early in life appears to have considerable influence over the development of sexual scripts that arguably guide future sexual behavior. It appears that for a large proportion of offenders, there is a core set of especially arousing fantasy themes that developed from experiences earlier in life that they return to. A particularly salient feature with respect to the source of sexual fantasy examines how offenders integrated, or failed to incorporate, previous experiences of childhood sexual abuse into fantasy. The SFSO model suggests that whether such material is actively incorporated into fantasy is highly dependent on the offenders' current appraisal of the childhood abuse. Those individuals who report that their early abusive experiences were positive (regardless of how they were perceived during the actual offense) are more likely to incorporate imagery relating to those experiences into their offense-focused fantasies. If an offender currently holds a negative appraisal of their childhood abuse, this does not necessarily exclude the incorporation of that material into fantasy; however, it does appear to influence the emotional experiences that accompany such fantasies. That is, unlike the positive emotions that were attached to the fantasies in the former scenario, the latter fantasies were generally brief, negatively toned flashbacks, which were often triggered during a sexual offense or while an offender was actively attempting to inhibit thoughts of their sexual offending.

A further noteworthy finding borne out in the SFSO model was what an offender did when access to external sources of offense-focused sexual imagery was blocked or absent. In these situations, many offenders appeared to actively manipulate non-sexual themes and/or general sexual imagery into offense-focused fantasies. We argue that this has important implications within the context of sexual offending, both in terms of what constitutes pornography for sexual offenders and in terms of how such material is restricted/regulated.

THE TEMPORAL PROFILE OF SEXUAL FANTASY IN OFFENDING

An important advancement in the understanding of sexual fantasy, and a particular strength of the SFSO model, is the development of a temporal dimension to sexual fantasy across the process of sexual offending. Unlike contemporary theorizing, which suggests that sexual fantasy is specific to pre-offense stages of the offense chain and related to the alleviation of negative affect, the current model explicates changes to the various functions, content, and structural properties of sexual fantasy across the offense process. Moreover, the SFSO model suggests that such variations are not only dependent on which

stage of the offense chain an offender is in but also on whether the individual is within the initial offense chain (first offense) or a relapse process.

A particularly salient aspect of the temporal dimension is the way that the content of sexual fantasy, together with its five second-order components, varies across the different stages of the offense process. Although most offenders do not entertain offense-focused fantasies during the historical phase (e.g., childhood recollections and first sexual fantasies), a small proportion of individuals do report entertaining such themes from an early age. Interestingly, these individuals generally appear to be those whose offenses are more predatory and/or sadistic in nature. As an offender moves through the initial offense chain, general sexual fantasy themes are seen to decline, whereas offense-focused themes increase. The initial offense brings about the cessation of general sexual fantasy and non-specific offense fantasy themes, as well as a narrowing in focus of offense-specific fantasy to the behavioral component. Similarly, during the initial post-offense period, while sexual fantasy themes appear restricted to offense specific content, they often contain all of the second-order components. Although general sexual fantasy themes re-emerge in later phases of the offense cycle, non-specific offense fantasy themes appear restricted to the early phases of the initial offense cycle.

The beginning of a relapse cycle generally coincides with a qualitative escalation in all five second-order components of offense-specific fantasy, with a shift in the behavioral content toward more hands-on behaviors and/or the incorporation of more bizarre and/or forceful experiences into fantasy. Although the actual relapse offense(s) again brings about a narrowing in the focus to offense-specific themes, those fantasies that are present often contain all of the second-order components. Thus, it would appear that during the build-up and relapse phases of the offense chain, sexual fantasies gain both detail and intensity, as well as broaden in scope. Similar to the initial post-offense period, the post-relapse phase of the relapse cycle was generally devoid of most sexual fantasy content.

The post-offending phase brings about the cessation of offending behavior, either because the behavior is detected or the offender makes a conscious decision to abstain from further offending. Despite this cessation, both general sexual fantasy themes and offense-specific fantasy themes re-emerge for the majority of offenders. As would be expected, this generally coincides with a constriction of an offender's potential sexual outlets, either because of incarceration or through relationship difficulties that stem from the offending behavior. Interestingly, many offenders actively attempt to inhibit offense-specific fantasy themes at this time, either because such fantasies are appraised as causal in offending and therefore need to be avoided or because they remind the offender

of the negative consequences (for themselves, the victim(s), and/or both) that resulted from their behavior.

Acknowledging the interconnectedness of the various functions of sexual fantasy, offenders do not consistently appear to use fantasy for any one specific reason over the course of the offense chain. Instead, sexual fantasy functions more dynamically across the offending/relapse process. Fantasy's ability to regulate sexual arousal generally appears restricted to situations where offenders are preparing for, or engaged in, sexual activity. Thus, this function appears less tied to the offense chain than it is to the underlying sexual script(s) that guides sexual interactions. It is through the indirect influence of the sexual script that the role of fantasy in sexual arousal appears to become conditioned to multiple sexual scenarios, the offense process being just one. In light of this variation, one of the more stable functions of sexual fantasy appears to be that of emotional regulation.

IMPLICATIONS OF THE SFSO MODEL FOR CRIMINAL PROFILING

Criminal profiling evolved as an analytic process grounded in physical evidence that provided investigators with a tool to aid in the solving of previously unsolved crime and the linking of previously unlinked cases, a process that was believed to be most productive in situations where an unknown perpetrator has demonstrated some form of psychopathology in the commission of their crime *(44)*. The recent proliferation of conceptual frameworks and investigative techniques/procedures within the profiling community makes a universally accepted definition of criminal profiling somewhat difficult to advance. However, within the present context, criminal profiling has been defined as the application of psychological theory and behavioral evidence analysis to the investigation and reconstruction of physical evidence that relates to a particular offender's crime scene characteristics, victimology, motivation, and behavior patterns. This process is underpinned by several core assumptions: including (i) no two cases are completely alike; (ii) no offender acts without motivation (regardless of whether this is within or outside consciousness); (iii) an offender may have multiple motives within a single offense and/or across multiple offenses; (iv) different offenders can exhibit the same or similar behaviors for completely different reasons; and (v) offense behavior progresses over time in ways that are unique to the individual *(45)*.

A key aspect of the criminal profiling process is attempting to understand sexual fantasy within sex crimes; however, the ways in which such phenomena are to be investigated remain unclear, with the process made all the more challenging by the inherently subjective and oftentimes intangible nature of

these experiences. This has led to a haphazard, and perhaps under-utilization of, fantasy in criminal profiling despite its central role in understanding the process of sexual offending. By mapping the SFSO model onto the criminal profiling process, a conceptual framework is provided by which to approach the analysis of fantasy and illuminate its role in the etiology and maintenance of sex crimes. Using the SFSO model, fantasy can be explored with respect to the salient features of criminal profiling, thus systematizing the process and helping gain insight into the mind of the perpetrator. It does this by elucidating the function, content, and structural properties of sexual fantasy within the process of sexual offending and by examining the interconnection of these facets, their respective characteristics, and their temporal features. This represents a significant development in our understanding of sexually aberrant behavior and provides a unique vantage point from which to investigate, conceptualize, and treat the offender.

Modus Operandi

Modus operandi (MO) refers to those behaviors committed during an offense that serve to ensure its completion while also protecting the perpetrator's identity and facilitating escape following the offense *(6)*. In effect, MO accounts for *how* an offender commits their crime *(45)*. MO is believed to be dynamic in nature, wherein learned behaviors develop and evolve as a perpetrator gains expertise in their offending career. As highlighted by Geberth *(46)*, an offender's MO may also devolve, with a perpetrator becoming less competent and/or skillful over time. Such decompensation often coincides with a deteriorating mental state, increased use of drugs/alcohol, or an offender's growing confidence in their ability to avoid apprehension. Moreover, the influence of extraneous variables (e.g., victim resistance and witnesses) means that criminal activity does not always go to plan, resulting in the need for improvisation or offender retreat. In effect, this culminates in an interrupted or incomplete offense, whereby the perpetrator may have been unable to carry the crime through to completion.

Sexual fantasy plays an important role in the development and maintenance of MO behavior, as it provides a stage on which the perpetrator can rehearse and plan anticipated offenses. That is, sexual fantasy may be conceptualized as a mental "sketchpad" on which an offender can simulate multiple offense scenarios, or aspects of their MO, "testing" which are most likely to ensure successful completion of the crime. Following the commission of a crime, sexual fantasy provides a means by which to re-enact specific aspects of an offense, with a view to "correcting" any perceived flaws, thereby refining the offense script. In this way, sexual fantasy is integral to the evolution of

an offender's MO, as well as the development of criminal "expertise." The SFSO model provides insights into how and why the temporal profile of sexual fantasy moves from general sexual fantasy through non-specific offense fantasies to offense-specific fantasies. The progression from general to specific sexual fantasizing illustrates, in broad terms, the evolutionary nature of sexual fantasy and its progression into offense behavior.

The SFSO model suggests that sexual fantasy can also contribute to the understanding of a devolving MO. To illustrate, as an offender's sexual fantasy gains in complexity (i.e., as additional subcategories of content are incorporated into the fantasy script and/or pre-existing subcategories become more intricate), the successful completion of an offense becomes increasingly difficult. In other words, as the underlying sexual fantasy script becomes more complex, the potential for behavioral "slippage" increases, a process that should be differentiated from overconfidence, for example. Such devolution can also occur when an offender over-utilizes sexual fantasy in the development of their MO, believing that the way an offense plays out in fantasy will mirror "real life" and in so doing fails to account for extraneous variables (e.g., witnesses).

Analyzing the key facets of the SFSO model can provide other important insights into an offender's MO. To illustrate, an offender may attempt to re-enact the source or origin of their sexual fantasy during an offense. For example, they may have incorporated aspects of the abuse they endured as a child when planning their MO or incorporate images from pornography and/or other forms of media. Irrespective of its origin, the core sexual fantasy shapes various aspects of an offender's MO including the context of the offense (e.g., outdoors in a park), victim selection (e.g., male child), method of approach (e.g., blitz attack), grooming processes/control (e.g., affective manipulation, disinhibition to sexually explicit material, and threats/violence), and organizing the type of resources needed to complete the offense (e.g., rape kit, sweets, vehicle, and precautionary acts). The origin of the fantasy is essentially static (although it may have dynamic aspects), representing, as it does, the core fantasy images to which the individual's sexual responses have become conditioned. As such, the context of the offenses would be unlikely to change fundamentally although they may develop in complexity (or devolve as the case may be). Hence, a serial offender is more likely to deploy similar strategies and resources across offenses, in keeping with the origin of their core fantasy structure.

OFFENDER SIGNATURE

Offender signature is conceptualized as those aspects of the offense that go beyond what is required to accomplish a particular crime and which are related to an offender's personality *(47,48)*. Specifically, crime scene signature

is a pattern of distinctive behaviors that are characteristic of, and satisfy the, emotional and psychological needs of an offender *(45)*. Thus, signature behavior captures the distinctiveness of a particular offender's needs and can therefore best be conceptualized as a reflection of the underlying personality, lifestyle, and developmental experiences of an offender *(45)*. In essence, signature aspects have to do with *why* an offender committed a particular crime and is thus an integral component to all crime scenes (although its presence may not always be easily discernible).

The etiology of an offender's signature has been conceived as those fantasies that are progressive in nature and contribute to thoughts of committing violent or predatory behavior *(48)*. Traditionally, an offender's signature was believed to be an inherent and static feature of their offense behavior *(49)*. However, more contemporary theorizing accepts that, like an offender's MO, the signature aspect of an offense can evolve, devolve, or remain static across multiple crimes *(37,46)*. Signature behavior may include the taking of "mementos," having a victim say or do pre-scripted actions, the sequencing of offense behaviors, or seeking out/altering a crime scene prior to an offense to ensure that it conforms to an offender's "idealized" image of the environment in which the offense will occur.

Signature behaviors essentially mirror a perpetrator's core fantasies; therefore, by attempting to understand the offender's sexual fantasies, the investigator may develop better insight into the specific psychological makeup of the offender (e.g., personality and prevailing cognitive schemas) and subsequently their criminal behavior(s). One of the more salient strengths of the SFSO model is its potential applicability to this nebulous task. By analyzing the discrete facets of the SFSO model, insights into the psychological forces driving the individual's behavior may be more cogently operationalized. In particular, the properties and dimensions of the core category referred to as Content are considered especially revealing.

Content demonstrates that perpetrators of sexual crimes fantasize both about general sexual and about offense-focused themes. Moreover, instances of offense-focused fantasy are not always related to offense-specific fantasies although it is plausible that they are intimately connected. That is, a linear progression from non-specific offense (and perhaps even General sexual) fantasies to Offense-specific fantasies is suggested by the SFSO model, thereby demonstrating the evolving complexity of fantasy structure. A closer inspection of signature aspects of a crime scene may provide direct clues into this process. For instance, victim profile (e.g., age, hair color, and weight) is a dimension reflected by the property Demographic, which is a component of both General sexual and Offense-focused fantasies. One can safely speculate that similarities

across these categories will exist not only in the Demographic features of sexual fantasy but also in the other properties they share.

To illustrate further, the property Relational pertains to the perpetrator's fantasies of the relationships between the players in it. Whether the perpetrator is Self-focused, Mutual-focused, or Other-focused is likely to remain consistent across General through to Offense-specific fantasy content, in keeping with the individual's core psychological drives (e.g., power/control, inadequacies, sensation seeking/experimentation, and revenge); however, it is likely that these dimensions become elaborated in the progression to Offense-specific fantasies, which may lead to criminal behavior. The same trajectory may be conceptualized for the other properties of the core category Content, all of which are shared by both General-focused and Offense-focused fantasy, including Behavioral (e.g., the types of injuries inflicted on the victim and the order or types of sexual activities engaged in), Situational (e.g., choice of location and time of day/night), and Self-perceptual (e.g., perpetrator as dominant and perpetrator as righteous victim).

Understanding the interplay between Content and the various Functions of sexual fantasy may also elucidate why changes to an offender's signature occur across time. Through the organizing function of Modeling, the various content categories of an offender's sexual fantasy are reworked into an offense script that better serves the offender's needs. Thus, if specific fantasy content more successfully fulfills one of the underlying functions of fantasy (i.e., Affect Regulation, Sexual Arousal, Coping), then such content is likely to enter the fantasy script. Importantly, this process may result from purposeful attempts to increase the potency of a fantasy experience, through trial and error or simply by accidental association. Regardless of its route, such processes lead to the refining, habituation, and ultimately an acting out of the particular fantasized behavior, which then translates into the evolution of signature behavior across crime scenes.

Accepting that offense scripts are rehearsed many times before they are enacted, the foregoing process says little about the underpinnings of a devolving signature. However, similar to MO behavior, the devolution in offense signature might signify deterioration in mental state, increased use of drugs/alcohol, or an offender's growing confidence in their ability to avoid apprehension. A devolving signature may also represent the interplay between personality, psychopathology, and sexual fantasy (e.g., as is the case for the sadistic psychopath). That is, an offender's use of fantasy may become confused and/or chaotic, possibly as a result of either over-refinement or over-reliance on this process as a means of escaping reality. Alternatively, attempts might be made to incorporate bizarre or sensationalistic aspects into fantasy that become

impossible to replicate in reality. As an offender becomes habituated to the peak fantasy experience and attempts to translate such themes into behavior, the offense script would have no parallels in reality. It is at this point that the offense requires a degree of improvisation and, as a result, is reflected in a crime scene through a change/devolution in an offender's signature.

In sum, by examining signature behaviors, the profiler may develop insight into the fantasy life of a perpetrator and make predictions about the progression of individual cases based on analyses of crime scenes. That is, it may help to understand which aspects of signature are likely to satisfy underlying psychological drives and thus remain constant while speculating how certain features may evolve/devolve as the perpetrator becomes satiated to their baseline fantasy and seeks to heighten their arousal or where the impact of mental disorder is discerned.

INFERRING MOTIVE

Distinguishing signature behaviors from MO can be a subtle task as the two often overlap. It is widely acknowledged, for instance, that separate offenders may utilize the same or similar MO, yet the psychological motivation for committing a sexual offense may be completely different. At the same time, the offender's signature may be so intricately linked to their MO that they cannot be readily disentangled. Attributing psychological motives to crime scene behavior is complicated by the fact that, unlike aspects of personality, mental state is not static across time. Therefore, in some situations (e.g., brief psychotic episode, drug-induced psychosis, and automatism), signature behavior would be more a reflection of an offender's psychological/mental state at the time of the offense rather than of an underlying personality structure or of enduring psychopathology.

Making distinctions between the "why" and "how" of a particular crime can be further complicated by the presence of "staging" within a crime scene. This is the deliberate effort by an offender (or another person) to alter the crime scene prior to the arrival of the police in an attempt to thwart the investigation and/or to move the focus away from the most logical suspect *(49)*. At times, staging may also incorporate posing—that is, utilizing the victim/crime scene as a "prop" to communicate a symbolic message. Staging, therefore, signifies criminal or precautionary intent and should not be confused with alterations of the crime scene by the victim's loved ones in an effort to preserve the victim's dignity and/or that of their family *(46)*.

Function, a core category of the SFSO model, is central to exploring and inferring potential motives of sex crimes. Affect Regulation, for instance,

connotes an offender's use of sexual fantasy as a means of regulating (i.e., Alleviating, Elevating, and Enhancing) their mood over the course of the offense process. As is often the case with child sexual abusers who offend along an avoidant offense pathway, forming sexual "relationships" with children can help stave off feelings of inadequacy and low self-esteem. It might also reflect attempts by the predatory rapist to regain a sense of control over their inability to engage in intimate sexual relationships, providing them with a means to humiliate, inflict pain, or seek revenge. Alternatively, through fantasy, a perpetrator can envisage how each facet of their offense will transpire, giving them a means to enhance sexual arousal and affect while simultaneously attempting to avoid detection and/or staging a crime scene for another purpose.

The manipulation of a crime scene post-offense (e.g., murder, disfigurement, and body disposal) may also provide insights into the fantasy motives underpinning those aspects of the crime scene that an offender feels most sensitive about. Although such activity may signify attempts to avoid detection or communicate a symbolic message, they may also represent a broader coping function. That is, as an outgrowth from fantasy, it can help the offender escape that realization of their behavior following the offense and avoid the consequent negative affect (e.g., denial, shame, and guilt) in the immediate post-offense period. Such scripted attempts at "undoing" a crime can also help elucidate certain aspects of staging, posing, or signature behavior. That is, it could help explain why a rapist might ask their victim for a date, why some perpetrators force a victim to wash following sexual experimentation with urine or faeces, or why a corpse is dressed following a sexual assault.

CONCLUSION

The foregoing chapter opened with a presentation of the theoretical developments in our understanding of sexual fantasy and, more particularly, current conceptualizations of sexual fantasy and its relationship with sexually aberrant behavior. Recent research employing the grounded theory method explicated a tripartite model of sexual fantasy (SFSO model) and its crucial role in understanding the offense process. Each of the three key facets of the SFSO model—namely, Function, Content, and Structural properties (along with their various categories, properties, and dimensions), was described, and their potential utility in criminal profiling was hypothesized. The general implications of the SFSO model to criminal profiling were elucidated followed by an exploration of its application to more specific aspects of criminal profiling including MO, offender signature, and inferring motive.

Sexual fantasy plays a fundamental role in the commission of sex offenses. Indeed, if we think of sexual fantasy as a "mirror" into the psychological drives, motives, and forces within the offender, then a crime scene acts as a reflection of this internal world. Thus, by attempting to understand the intrapsychic dynamics within sexual offenders, criminal profilers may begin to make inferences about certain sexual crime scenes, by mapping their analyses onto what is understood about sexual fantasy within the context of sexual offending.

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Chapter 4

Murder by Manual and Ligature Strangulation

Profiling Crime Scene Behaviors and Offender Characteristics

Helinä Häkkänen

Summary

This chapter is based on a number of research projects on offender profiling and homicidal crime scene behavior carried out at the Finnish National Bureau of Investigation. This specific study investigated homicidal strangulation in Finland during a 7-year period and analyzed and compared offense and offender characteristics in manual and ligature strangulation cases. The results diverge in many respects from the previous research findings attributed to homicidal strangulation and emphasize the need to identify possible culture-specific patterns and psychopathological offender characteristics in homicidal behavior.

INTRODUCTION

Homicidal strangulation accounts for approximately 10–20% of all homicidal deaths in various countries *(1–4)*. In strangulation, the cause of death is cerebral hypoxia secondary to compression and thereby an occlusion of the vessels supplying blood to the brain *(5)*. It has been estimated that applying pressure on the neck causes unconsciousness in approximately 5–15 seconds *(6–8)*. Homicidal strangulation can be made manually or by using a ligature. In ligature strangulation, pressure on the neck is applied by a constricting band (e.g., belt, electric cord, rope) that is tightened by some force other than the

body weight. In manual strangulation, pressure is applied by hand, forearm, or other limb. Research results regarding which one of the homicidal strangulation methods is more frequent are mixed *(6,9–11)*.

Research on homicidal strangulation has shown that in a high percentage of cases, the offender and the victim have a family relationship *(1,9,12)* and that as much as 75% of the victims are females and infants *(1,9,11–13)*. In previous studies, the most frequent motives for homicidal strangulation have been rape *(6)*, sexual jealousy, and personal rivalry *(9,11)*.

Predomination of female victims in homicidal strangulation has been explained by quarrels in relationships and unrehearsed violence applied by bare hands as well as by physical disadvantage and incapability of resistance of female victims *(9,11,14)*. The latter rationale has been explicated relative to homicides by firearms. Fisher et al. *(14)* cite Dotzauer and Jarosch *(15)*, who suggest that firearms are more frequently used against male victims, because they permit the offender to keep a greater distance from the victim, whose physical strength may be feared.

It has also been suggested that females predominate as victims in homicidal strangulation, because they are more likely to be targets of sexual assaults, and strangulation may occur to overcome their resistance during the sexual act *(1)*. In previous studies, strangulation has been firmly associated with sexual and sadistic murders *(16–19)*. Strangulation has been found to be the cause of death in 67% of sexual murders *(20)*, 63% of sexual murders of elderly females *(21)*, 61% of sexual sadistic murders *(22)*, and 59% of serial sexual murders *(19)*. Furthermore, Gratzer and Bradford *(23)* studied three samples of sexual offenders, and their results indicated that strangulation, particularly by a ligature, is more frequent in sexual sadistic than nonsadistic murders. However, ligature strangulation accounted only for 20% of the causes of death in sexually sadistic murders; blunt force trauma and stabbing were both more frequent causes of death. In a study on sexual murder, Kocsis et al. *(24)* analyzed crime scene behavior and provided an empirical model with distinct behavior clusters. Their study suggested that in sexual murders, ligature strangulation is associated with deliberate and cruel crime scene behavior, suggesting a "predator" murder pattern.

Predomination of strangulation as a cause of death in sexual and sadistic murders has been interpreted in various ways. Based on his clinical work with sexual murderers, Brittain *(25)* suggested that for the sadistic murderer, the method of killing is almost always asphyxial. It may be due to the positions of the murderer and his victim in a sexual attack, which, according to Brittain, makes strangulation an "easy and convenient" way of killing and prevents the victim from crying out. Furthermore, both Brittain *(25)* and Gratzer and

Bradford *(23)* concluded that the offender is able to exert greater control and power over the victim by strangulation.

The prevalence of strangulation has also been studied in relation to serial murders. In previous studies, strangulation has been present in approximately 35% of serial murders *(26,27)*. Furthermore, it has been shown that compared with single homicide offenders, serial offenders are more likely to use strangulation as a method of killing *(28)*. In his study on serial murderers, Godwin *(27)* suggested that ligature strangulation represents the killer's expressive rage that has a personal focus toward the victim. Dietz *(29)* associated strangulation in serial killings with the need of psychopathic sexual sadists to have greater intimacy with the victim than projectile weapons would allow.

Very few studies on the specific method of killing or cause of death have been undertaken in the study of homicide made for the purpose of criminal psychological profiling. Previous research on homicidal behavior and offender characteristics has focused on analyzing crime scene behaviors in clusters *(30–32)*. This is meaningful, for example, when the purpose is to classify offense styles thematically. In these studies, however, strangulation as a method of killing or cause of death has not been analyzed independently of other manual methods of killing *(30–32)* or the sample has been selected *(24,27)*. Owing to these limitations, very little is known of homicidal strangulation. Furthermore, previous research from the field of legal medicine has emphasized demographic characteristics of homicidal strangulation victims instead of focusing on the offenders.

The present research adopts an approach focusing on the manifestation of offender psychopathology on a single, rarely occurring homicidal crime scene behavior (e.g., strangulation, mutilation, penetration). These are behavioral characteristics that may be considered by investigators as "bizarre," "grotesque," "horrible," and as being beyond the realm of common sense or lay knowledge. The ground for focusing on offender psychopathology is a body of research showing that violence in psychiatric patients is related to the underlying psychopathology *(33)*. For example, the relationship between psychotic homicide offenders and their victims is more likely to be intrafamilial *(34–37)*, although there seems to be a gender effect, as both psychotic and nonpsychotic females kill mostly inside their families *(38)*. Furthermore, females with a personality disorder or psychosis differ from each other in relation to the age of their victims: women with a personality disorder kill more adults, whereas psychotic women kill more children *(39)*. Males, psychotic or nonpsychotic, rarely kill children *(38)*. Extending the research from the victim–offender relationship to the homicidal crime scene behavior, Steyru and Choinski *(36)* showed that psychotic offenders frequently used knives and other

sharp instruments and that they were less frequently intoxicated and rarely used excessive violence. Petursson and Gudjonsson *(40)* suggested that mentally ill offenders might exhibit "abnormal" behavior (unfortunately the authors did not define this in more detail) after the killing. Furthermore, a previous study showed that mentally ill men are more frequently arrested at the crime scene, especially schizophrenics who often reported themselves to the police *(41)*.

In all, previous studies on the relationship between a mental illness and a homicide have focused mostly on finding a statistical relationship between a mental illness *per se* and violent behavior. These studies contribute little to police investigators, because they do not offer any information on how offenders with different mental illnesses differ from each other in terms of crime scene behavior. In our recent studies, we have shown that offenders with different mental illnesses and also offenders, who do not have a mental illness, differ from each other in their homicidal crime scene behavior and offender characteristics *(42–44)*. This kind of information can be used as a tool in prioritizing suspects in unsolved homicide cases.

In this study, a different approach was purposefully selected in terms of analyzing a single crime scene behavior contrary to analyzing clusters of behavior. However, a specific caution was taken not to analyze any behavior that was very situation specific (e.g., analyzing differences in victim's injuries across the body as it is highly dependent on the victim's ability to resist and fight back). The reason for taking the present approach is that the focus in investigative work is often on single crime scene behavior. As every homicide case is unique, and there may be a variety of motives (varying from financial gain to the psychotics' fear of aliens from outer space), the investigator may be more likely in practice to focus on details of the case than on the general offense style. What is occasionally needed is an advice on whether the case includes any behavior prone to offenders with a mental illness. The need of this study derived from a request for a behavioral analysis (i.e., an offender profile) of an unsolved homicide case where the victim was strangled with a ligature. When findings of previous studies were assessed, no consistent patterns were found in the characteristics associated with homicides by ligature strangulation. Furthermore, there was nothing to indicate that the particular case would be part of a homicide series or a sexual homicide. Previous studies on homicidal strangulation have focused on the prevalence and victim characteristics. The offense or offender characteristics have been very little examined, and the results are somewhat inconclusive. A systematic study of homicidal strangulation is therefore warranted, although the cases are rare. This study investigated homicidal strangulation in Finland during a 7-year period from 1996 to 2002 and analyzed specific offense and offender characteristics.

PRESENT RESEARCH

The research was designed to address the following questions:

1. What is the offender–victim relationship in strangulation cases?
2. Do manual and ligature strangulation cases differ from each other in terms of offense or offender characteristics?
3. Is homicidal strangulation associated with sexual and sadistic crime scene behavior?

The research is empirical and descriptive. Information available in existing police records and forensic psychiatric examination reports was used. Information concerning homicides was obtained from the Finnish National Authority of Medicolegal Affairs (NAMA) organizing forensic psychiatric evaluations. In Finland, roughly 90% of homicide cases are solved by the police and approximately 85% of homicide offenders go through a forensic psychiatric evaluation as a part of the trial procedure *(45)*. According to Finnish law, courts decide whether a forensic psychiatric evaluation should be conducted. Both the prosecutor and the defense are allowed to request the evaluation. After deciding on the evaluation, the court asks the NAMA to arrange it. Forensic psychiatric evaluations include data gathered from various sources (family members, relatives, medical and criminal records, school and military), psychiatric evaluation, standardized psychological tests, interviews by a social worker and a psychologist, evaluation of the offender's physical condition, and observation of the offender by the hospital staff. The overall quality and reliability of Finnish forensic psychiatric evaluations is considered high by both courts and scientists *(46)*.

The NAMAs' archives were searched for all homicide cases for the period from 1996 to 2002. Cases where strangulation occurred were identified and collected for data analysis. Possible cases of homicide-suicide were excluded. The Finnish police's computerized criminal index file was searched for additional information on the selected cases. The criminal index file includes both quantitative data (e.g., the age and sex of the victim and the offender) and an open-ended narrative appendix. All cases were retrospectively analyzed for the offender–victim relation and several variables regarding the offense and offender characteristics. The list of variables was the same that has been used and tested on our earlier studies on similar issues *(43,44)*. The relation between victim and offender was divided into the following groups: (blood) related, (ex)intimate, acquaintance, stranger, and other. A case was referred to the "acquainted" group, if the parties knew each other at least by name or by sight, and the "stranger" group, if they did not know each other at all. The NAMA and the Ministry of Interior approved the study.

RESULTS

Victim Characteristics

There were altogether 59 strangulation cases, of which 39 (66%) were manual and 17 (29%) ligature and 3 (5%) both. The three cases with both of the strangulation methods were classified as "ligature" strangulation for further analysis. Of the victims, 27 (48%) were female and 29 (52%) men. The method of strangulation was not significantly associated with the gender of the victim, although a higher percentage of women than men were manually strangled (75 vs. 58% respectively). The mean victim age was 35.6 years (SD = 18.0, minimum = 1, maximum = 72 years). Ten of the victims (17%) were under 15 years of age. The victim age was not significantly associated with the method of strangulation. In all, 56% of the victims were either females or under 15 years of age.

Table 1 summarizes the results regarding the method of strangulation and victim–offender relationship. Nearly half (46%) of the victims were acquaintances. Compared with the other groups, ligature strangulation was more frequent in cases where the victim and the offender were acquainted (48 vs. 22% respectively, $\chi^2 = 4.551$, $df = 1$, $P \leq .05$).

Offender Characteristics

There were co-offenders in six cases. However, co-offenders had been subjected to forensic psychiatric examination only in one of these cases (all three offenders took actively part in the strangulation). Therefore, the number of offenders in this sample is 61. Nine offenders (15%) were female, of whom four killed their own child. Compared with men, a larger proportion of female offenders used a ligature (56 vs. 30%), although the difference only approached a statistically significant level ($P < .14$). A further examination of the victims of the female offenders revealed that three of the four victims strangled manually were children (1–6 years old), whereas four of the five victims strangled with

Table 1
Method of Strangulation by Victim–Offender Relationship

	n (%)	Manual (%)	Ligature (%)
Stranger	1 (1.7)	100.0	
Family member	15 (25.0)	80.0	20.0
(Ex)intimate	16 (27.1)	75.0	25.0
Acquaintance	27 (45.8)	51.9	48.1
Total	59 (100.0)	66.1	33.9

a ligature were adults (one woman and three men). The mean age of all the offenders at the time of the killing was 34.11 years (SD $= 11.32$, minimum $= 15$, maximum $= 66$ years). Four offenders were under 18 years of age. The offender age was not significantly related to the offender gender or to the method of strangulation.

Nine of the offenders (15%) were psychotic, and five of them had a secondary diagnosis of a personality disorder. Of the remaining offenders, 61% had a personality disorder, 12% had some other disorder (mental handicap, severe depression etc.), and only 12% of the offenders were considered not to have a mental illness. The proportion of ligature strangulation cases was 39% among the offenders with a personality disorder, 22% among the schizophrenics, and 29% among the others. Although the type of a mental illness was not significantly associated with the method of strangulation, it was significantly associated with the victim–offender relationship. Compared with others, a significantly larger proportion of the schizophrenic offenders killed relatives (56 vs. 10%, $P < .01$, Fisher's exact test).

In all, 66% of the offenders were diagnosed as having alcohol dependence and 14% drug dependence. At the time of the killing, 72% of the offenders were intoxicated and 10% were under the influence of drugs. There was a tendency to ligature strangulation being more frequent among offenders with drug dependency (63 vs. 31%, $P < .12$) and offenders who were under the influence of drugs during the killing (67 vs. 29%, $P < .08$), but the differences only approached a significant level.

A substantial proportion of the offenders had experienced severe problems in their childhood environment. Twenty percent of them had been subjected to institutional care, 36% had parents with alcohol problems, and 41% had experienced physical violence at home. In all, 54% of the offenders scored positive for at least one of these developmental variables. The presence of early developmental problems was not related to the method of strangulation, but these problems were related to the mental illness category, being more frequent among offenders with a personality disorder (65 vs. 33%, $\chi^2 = 5.195$, $P < .05$). Fifty-eight percent of the offenders had a criminal history: 39% had been convicted of thefts, 36% of drunken driving, 34% of aggravated assaults, and 11% of homicides. Only two offenders had a previous conviction of rape. Criminal history of violent crimes (homicides, aggravated assaults, and rape) was not significantly related to the method of strangulation.

Offense Characteristics

The victim was found at the scene of the killing in 86% of the cases. In 71% of the cases, the victim was found in an apartment and in 22% of the cases, outdoors. The location of the body was independent of both the

method of strangulation and the victim–offender relationship. In 17% of the cases, the offender stole something from the victim. There was no significant association between the method of strangulation and stealing from the victim, but stealing was significantly more frequent when the victim was a stranger or acquaintance, when compared with (ex)intimates and family members (33 vs. 3% respectively, Fisher's $P \leq .004$).

Sadistic features and desecration of the body were rare. None of the cases involved taking the victim as a hostage, tying the victim up, penetration with an object, or urinating on the victim. The body was mutilated in two cases. In all, 63% of the cases involved multiple forms of violence. Of the victims, 39% were also hit or kicked, 25% were stabbed, 14% were hit by a blunt instrument, and 5% were suffocated. The use of multiple forms of violence was more frequent in manual strangulation cases (72 vs. 45%, $\chi^2 = 4.059$, $P < .05$). This was because the victim was more frequently hit and kicked, in particular, in cases with manual strangulation compared with ligature strangulation (49 vs. 20%, $\chi^2 = 4.584$, $P < .05$). In three cases (5%), all involving acquaintances, the killing was preceded by (an attempted) rape. In one case, the victim and offender, who were intimates, had intercourse before the killing.

Of the offenders, 23% could not self-report any motive for their killing. Of the remaining cases, 25% were classified as drunken quarrels, 28% as jealousy or disputes between intimate partners, 13% as serving an instrumental need (e.g., robbery), and 12% as family conflicts. When the victim was a female, in 71% of the cases the motive was jealousy or a dispute between intimate partners, and when the victim was a male, in 68% of the cases the motive was a drunken quarrel. Compared with the other motive groups, ligature strangulation was more frequent than manual when the motive was "drunken quarrels" (53 vs. 23%, $\chi^2 = 4.050$, $P < .05$).

DISCUSSION

The present results diverge in many respects from the previous research findings attributed to homicidal strangulation. First, compared with the overall annual Finnish homicide data, in which approximately 30% of the victims are female, the proportion of female victims in the present data (48%) was higher, but not outstanding *(47)*. In accordance with previous studies *(9,11)*, the prevalent motive of the female homicidal strangulation was jealousy or attempted homicide-suicide. Second, the present results, contrary to the results by DiMaio *(6)*, suggest that female homicidal strangulation is usually not motivated by rape in Finland. Only one offender self-reported rape as the motive for the killing. Neither is the homicidal strangulation related to sexual

murders or sexual sadism. Only 11% of the female homicidal strangulation cases were sexually related, which corresponds to the findings in other Scandinavian countries *(9)*. Furthermore, none of the cases implicated sadism.

Third, the present results suggest that in Finland, homicidal strangulation cases are usually not part of a serial murder. Although the proportion of homicide recidivists in the present data is larger than the proportion of homicide recidivists in a 13-year follow-up study of 1584 Finnish homicide offenders (11 vs. 2% respectively) *(48)*, only three offenders had been convicted for a minimum of two homicides. The number of victims required for an offense to be classified as a serial homicide varies in previous studies from two to 10 *(29,49,50)*, but according to the official FBI definition at present, it is a question of serial murder when the number of victims is at least three *(51)*. Furthermore, the typical motivation for serial homicide has been described as being either sexual or internal psychological gratification *(52,53)*. The motives for the three serial offenders in the present sample were drunken quarrel, robbery, and delusions related to psychosis.

In this study, nearly a half of the homicidal strangulation victims were acquaintances of the offender. Many of these homicides can be characterized as impulsive acts occurring in boozing societies of marginalized males. At the time of the killing, 72% of the offenders were intoxicated. These results correspond with the previously found characteristics in Finnish homicides *(42)*. Furthermore, 61% of the offenders were diagnosed as having a personality disorder, and 15% were psychotic. These results are accordant with previous results concerning the prevalence of these types of mental illnesses among homicide offenders *(38,40,45,54–58)*.

The comparison between the strangulation methods suggested that homicidal strangulation cases are rather homogenous, in terms of the offense and offender characteristics. In over half of the cases, strangulation occurred in combination with other forms of violence, usually hitting and kicking. This is in line with previous results *(14)*, and probably because in contrast to stabbing and shooting, strangling is more likely to result in a physical struggle. Bivariate analyses suggested that the use of a ligature in homicidal strangulation may be associated with the offender being a female, drug user, the offender and victim being acquaintances rather than family members or intimate partners, and the motive being a drunken quarrel. In addition, in ligature strangulation cases, other forms of violence were less frequent. It is interesting to note that previous research has suggested that because of the predomination of female victims, homicidal strangulation may be associated with the physical disadvantage of the victim. This is, however, in contrast with a previous study showing that death by strangulation comprises only 4% of elderly homicide victims *(59)*.

Thus, on the basis of the present results, it is interesting to hypothesize that the use of a ligature in homicidal strangulation may be due to the perceived physical disadvantage of the *offender*.

Like all research, the present research has its share of limitations. The sample size was smaller than ideal, although it covered all homicidal strangulation offenders who had received an exhaustive forensic psychiatric examination within the time period. The system of extensive forensic psychiatric evaluation in Finland makes reliable data collection possible. Unfortunately, however, not all perpetrators accused of a homicide go through the forensic psychiatric evaluation. At present, there is no systematic procedure in Finnish courts of law ordering forensic psychiatric evaluation. The district courts decide independently whether a detailed forensic psychiatric evaluation should be made. If the courts decide that there is any possibility that the offender is not fully criminally responsible owing to a mental disorder, a full-scale forensic psychiatric evaluation will be ordered. Usually, in cases where the forensic psychiatric evaluation is not ordered, the offender has recently participated in such an evaluation as a part of another, previous trial procedure. It is not easy to determine whether the present sample consisted of all homicidal strangulation cases within the time frame or whether there were some cases where the offender did not go through a forensic psychiatric evaluation and, therefore, was not included in our sample. In Finland, there is no detailed uniform register within the police, district courts, forensic pathologists, or national "death statistics" which allows one to estimate the number of cases where specifically homicidal strangulation occurred within a given time period. For the purposes of the present study, the death certificates of all the homicidal asphyxia cases within the time frame were ordered from Statistics Finland. However, even the narrative parts of the death certificates do not state exclusively how the asphyxia death occurred. It can be assumed, however, that as strangulation cases are rare events, a forensic psychiatric evaluation of the offender is more likely to be ordered in these cases.

Another limitation of the research to be considered is that there was no comparable data on the general population or other homicidal offender group. Therefore, the results regarding offender characteristics need to be interpreted cautiously. In general, however, the present results are in accordance with the previous studies on Finnish homicide offender characteristics *(43)*.

Finally, as this study contradicts some of the previous traditional assertions present in the homicidal strangulation literature, it supports the need for empirically based comparative analyses. For example, in previous case studies, homicidal strangulation has also been associated with ritual homicides *(60)* and sadomasochistic sexual activity *(61)*. In time, there will be sufficient

information on homicidal strangulation to permit researchers, investigators, and other criminal justice practitioners to advance beyond case studies and conclusions unsupported by empirical evidence thus bringing scientific rigor to this field of study. Good science can inform and shape the practice of profiling, as much as other research has supported the predictive superiority of actuarial over unstructured clinical predictions *(62,63)*. Furthermore, it is essential to acknowledge possible culture-specific patterns in homicidal behavior. The previous research on homicidal strangulation derives mostly from the crime data collected by the FBI, leading to a bias in the sample.

To my knowledge, reports on the putative association between specific mental disorders and homicidal crime scene behavior have not been published with the exception of results concerning psychopathy *(64)*. More attention should be paid to the role of offenders' psychopathology regarding the way they behave in their crimes. With the help of unselected birth cohorts, it has been well established that offender psychopathology is associated with the risk of criminal behavior *(48,57,65,66)* and specifically, homicidal behavior *(67)*. It has also been acknowledged that offenders' psychopathology affect their explanations about their crimes *(68–71)* better than criminologic variables such as age and number of arrests. Furthermore, information regarding victim injury has been used in the previous studies to predict the inter-relationship between the victim and the offender *(72–74)*. However, a systematic exploration of the relationship with regard to crime scene behavior and offender psychopathology has only begun.

The idea of violence being qualitatively different in regard to the type of a mental illness has been relatively ignored in the studies of homicide made for the purpose of criminal psychological profiling. However, Woodwort and Porter *(75)* suggested in their review that a profile of the perpetrator may include psychopathological conditions, personality traits, behavioral patterns, and demographic characteristics, and they suggested further that the research should begin to focus on possible differences between individuals, who commit the same type of crime in different ways. However, the empirical studies with an emphasis on offender profiling on homicides have with the occasional exception *(24)* focused exclusively on demographic characteristics.

Although criminal profiling is often used as an investigative tool, the empirical foundations of profiling and its assumptions remain controversial. This study concludes that a holistic approach integrating aspects of empirical methods and psychopathology may represent a promising approach to criminal profiling. This is in line with the previous research suggesting that psychopathy may be one of the most empirically validated and potentially useful psychopathological constructs for criminal profiling *(76,77)*. The

construct of psychopathology has the potential to assist criminal investigators in a number of ways. In line with Jackson et al. *(78)* and Woodworth and Porter *(75)*, it is emphasized that the usefulness of forensic psychology and criminal profiling should be considered globally, for example, in generating additional investigative suggestions and strategies, and providing advice on interviewing techniques and information on offender psychopathology.

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Chapter 5

Criminal Propensity and Criminal Opportunity

An Investigation of Crime Scene Behaviors of Sexual Aggressors of Women

Eric Beauregard, Patrick Lussier, and Jean Proulx

Summary

Criminal profiling is an investigative tool that has attained unprecedented recognition despite a clear lack of empirical criminological evidence supporting its validity and assumptions. The "homology hypothesis" is one of these assumptions, and it postulates a direct relationship between crime scene characteristics and personal attributes of the offender. Few studies were able to test empirically such a relationship while taking into account opportunity factors. Thus, the aim of this study is to compare the role of both stable individual characteristics and opportunity factors in explaining crime scene behaviors of sexual aggressors of women. Sequential logistic regression analysis was performed on a sample of 187 adult males convicted of at least one sexual offense against a female of at least 16 years of age. The results revealed that opportunity factors were more important in explaining crime scene behaviors of sex offenders as compared with criminal propensity factors. Results are then discussed in light of the assumptions of criminal profiling and how they can be used in the criminal investigative process.

INTRODUCTION

Criminal profiling is defined as an investigative tool that uses crime scene characteristics to generate probable descriptive information about behaviors, personality, and personal characteristics of an offender, narrowing the field of suspects and aiding in apprehension efforts *(1,2)*. A review of the literature

shows that the technique has attained unprecedented recognition despite a clear lack of empirical criminological evidence supporting its validity and assumptions. Three factors may have contributed to this situation. First, the fictional media glamorization surrounding the technique. Second, the fact that profiling has been developed and used by police agencies who may be reluctant to allow independent scrutiny of their practices. Third, a circular rationale that demonstrates the accuracy and validity of offender profiling through its continued use and demand by police agencies *(3–6)*. The work of Kocsis *(3,7–11)* and Pinizzotto *(12,13)* represents the best attempts at testing empirically the validity of criminal profiling. Conclusions from these studies tend to support the validity of the technique, showing, for example, that profilers produce more accurate predictions (e.g., non-physical attributes of offender, crime scene information, and offender's behavior before, during, and after the crime) of an unknown offender as compared with other groups (e.g., detectives, college students, and psychics). However, few studies have examined the assumptions underlying the technique of criminal profiling. Even less so, few researchers have investigated these assumptions in terms of sexual aggressors of women.

Criminal Propensity and Sexual Aggression

Over recent years, one of the main conundrums in the field of criminology has been to determine the role of predisposing characteristics over and against that of situational factors in explaining offending. In that regard, the field of criminology has relied on two approaches to explain offending, that is, the criminal propensity and the opportunity approaches. The criminal propensity perspective is concerned with the stable individual differences among the population that increase the likelihood of offending. This approach focuses on the criminal activity (or criminal career) of offenders, that is, the onset, persistence, and desistance of offending over time *(14)*. On the contrary, the opportunity approach states that crimes are determined by situational, contextual, and opportunity factors *(15)*. More specifically, this approach focuses on the situational, cognitive, emotional, and behavioral aspects of offenders prior to, during, and after a criminal event. The criminal opportunity approach encompasses different theoretical approaches such as the routine activity *(16)*, the "lifestyle-exposure" theory *(17)*, the criminal event perspective *(18)*, and the "structural-choice model" *(19)*.

Traditionally, the field of research of sexual aggression of women has focused almost exclusively on the propensity of sexually offending. In that regard, three inter-related core constructs have been proposed to characterize this propensity: (i) antisocial tendency or some underlying aspect of this propensity, such as hostile masculinity *(20–24)*; (ii) a high sexualization or

some underlying aspect of this propensity, such as a high sexual drive or sexual compulsivity *(25–27)*; and (iii) deviant sexual interests or the lack of inhibition to cues of sexual violence *(28–30)*. Others have also suggested that sexual aggressors of women can be characterized by psychosocial deficits or behavioral inhibition *(31)*. According to the tenets of this approach, sexual aggressors of women lack a secure attachment because of negative childhood experiences, not favoring the development of intimate relationships with others. Generally speaking, researchers have looked at the relationship between these constructs and three aspects of sexual offending: (i) the criminal activity parameters, such as recidivism, age of onset, and number of victims; (ii) the tendency to use psychological and physical coercion in a sexual context; and (iii) the tendency to use sexual coercion during a sexual assault.

Many empirical studies have shown the importance of a high antisocial tendency to explain the propensity to commit a sexual aggression against women. In that regard, Lussier and colleagues *(23)* have shown that sexual aggressors of women with a high antisocial tendency are more likely to start their sexual criminal activity earlier and commit more sexual crimes. After controlling for measures of antisocial tendency, measures of sexualization and deviant sexual interests were not significantly related to both measures of sexual offending, thus suggesting the preponderant role of antisocial tendency. Both Lalumiere and Quinsey *(21)* and Malamuth *(32)* found similar results as to the tendency to use coercion in a sexual context. Both studies found that indicators of antisociality were associated with a higher level of psychological and physical coercion used. On the contrary, Knight and Sims-Knight *(27)* have shown that a high sexualization (i.e., sexual compulsivity, sexual preoccupation and sexual drive, or the difficulty controlling sexual urges) is related to both sadistic fantasies and a high-level of sexual coercion (i.e., *fellatio*, vaginal penetration, anal penetration). In sum, it appears that the construct of antisociality increases the likelihood of committing a sexual crime and the tendency to use higher levels of violence while measures of sexualization might be more specific to the characteristics of sadism.

Criminal Profiling and Sexual Aggression

Among others, Holmes and Holmes *(33)* have postulated four assumptions of the profiling process: (i) the crime scene will reflect the personality of the offender; (ii) the method of operation will remain similar; (iii) the signature will remain the same; and (iv) the offender's personality will not change. These four assumptions implicitly postulate a direct relationship between

crime scene characteristics and personal attributes of the offender. Mokros and Alison *(34)* have referred to the "homology hypothesis" to describe such a direct relationship. According to this hypothesis, the more similar two offenders are with respect to background characteristics, the higher the resemblance in their crime scene behavior. According to Mokros and Alison *(34)*, "there is an assumed sameness in the similarity relations between the domains of crime scene actions and demographic features" (p. 26). Based on the analysis of a sample of 100 British male stranger rapists, their results showed no positive linear relationship for any of the comparisons. Thus, rapists who offend in a similar fashion are not more similar with respect to age, sociodemographic features (e.g., employment and ethnicity), or their criminal record.

Crime Scene Behaviors as a Reflection of Sexual Fantasies

Several authors have also postulated a direct relationship between the content of sexual fantasies of an offender and the behaviors exhibited on the crime scene. MacCulloch and colleagues *(35)*, as well as Reinhardt *(36)* and Revitch *(37,38)*, reported a striking similarity between the content of sexual fantasies and the actual crime. Thus, deviant sexual fantasies were frequently related to both the level of coercion and organization of the *modus operandi* of sexual aggressors against women *(35,39,40)*. According to Hazelwood and Warren *(41)*, sexual fantasies are an important component of sexual crime, allowing for a better understanding of the offender during the production of the profile. These authors pointed out that this component had been crucial in the linking of cases, specifying certain materials in search warrants, as well as providing informed prosecutorial strategies. Fantasies "serve a complex organizing function in the offender's behavior and frequently determine the choice of his verbal interactions with his victim, his preferred sexual acts, and his overall ritualistic patterns of behavior" (p. 127). In some cases, fantasy alone is not satisfactory, leading the individual to engage in a series of progressively more accurate trial runs in an attempt to enact the fantasy as it is imagined *(35,42)*.

Beauregard and colleagues *(1)* have investigated empirically this relationship between sexual fantasies and crime scene behavior based on the analysis of 118 rapists. The study used an indirect measure of sexual fantasies (i.e., phallometrically assessed sexual interests) in order to predict three components of rapists' *modus operandi*, namely, the level of organization of the offense, the level of force used by the offender, and the level of injury inflicted on the victim during the sexual assault. Surprisingly, the results only partially support the hypothesis of a link between sexual fantasies and *modus*

operandi. A weak relationship has been found between a sexual interest for non-sexual violence and the level of organization of the offense. Situational factors, however, were more strongly related to the *modus operandi*. Indeed, the use of pornography prior to crime was negatively related to the three scales of *modus operandi* and a negative emotional state was related to an increase in the level of injury inflicted on the victim during the sexual assault. Situational factors were described as a crucial component in order to predict criminal behavior. Interestingly, Alison and colleagues *(43)* share a similar point of view as to the importance of situational factors. According to the authors, "as in the case with traditional trait theories, the theory underpinning most forms of offender profiling is nomothetic in its attempt to make general predictions about offenders. It is also deterministic in its assumption that all offenders' behaviors are affected in predictable ways. Finally, it is largely nonsituationist in its belief that behavior is thought to remain stable in the face of different environmental influences" (p. 117). This "personality paradox" refers to the inference of personal characteristics from observed behavior despite evidence demonstrating that personality fails to accurately predict behavior in different situations.

The Personality Paradox

Other studies using crime scene and *modus operandi* variables have been conducted in order to predict the characteristics identifying different types of sexual offenders *(2,44–50)*. These studies were able to link crime scene behaviors to offenders' characteristics, such as personality, criminal motivation, physical characteristics, routine activities, and criminal antecedents. However, none of these studies have taken into account the impact of situational factors in the prediction of offender characteristics. If used to give advice during the profiling process, these predictions might be completely wrong in a different context. For example, a recent study by Beauregard and colleagues *(51)* showed that strategies used by serial sex offenders will vary according to different contextual parameters (e.g., hunting field, nature of location, and familiarity of location) in which the offender is found. Disparity among studies on the relationship between crime scene behavior and offender characteristics should not be interpreted as the unfeasibility of criminal profiling. Nonetheless, the criminal behavior of an offender may be related to some of his personal attributes. It is, however, dynamic and may fluctuate because of certain situational or opportunity factors. The criminal profiling process should rely less on the study of the offender and his behavior alone and more on the criminal event that is combining analysis of the offender, the victim, and the context *(18)*.

     This study concurs with Farrington and Lambert *(46)*, who stated that theories should help guide future research on criminal profiling by specifying the particular characteristics of offenders, victims, and *modus operandi* to be studied. Thus, the aim of this study is to test empirically an important assumption of criminal profiling by comparing the role of both stable individual characteristics and opportunity factors in explaining crime scene behaviors of sexual aggressors of women. Specifically, the study aims to (i) verify whether criminal propensity and criminal opportunity variables have a mediating effect on crime scene behaviors, (ii) identify whether criminal propensity or criminal opportunity has a stronger effect on crime scene behaviors, and (iii) identify which crime scene behavior criminal opportunity/criminal propensity variables are more important.

METHOD

Participants

     All offenders starting a federal prison sentence ($n = 557$) for a sexual crime between 1994 and 2000 in the province of Quebec were recruited to participate in an on-going research project on the recidivism of sexual offenders. The participation rate was high (93%). In total, 187 adult males who were convicted of at least one sexual offense against a female of at least 16 years were included in this study. Participants were assessed at the Regional Reception Center, a maximum security penitentiary located in the province of Quebec, Canada. The role of the institution is to assess treatment needs and risk levels of all individuals serving a sentence of 2 years or more. Subjects included in the study were mostly Caucasian (85%). On average, they were 33.7 years old (SD = 9.0) at the time of the intake assessment and had been convicted of their first sexual crime at 31.2 years (SD = 9.1). Moreover, on average, their criminal history showed that they had been convicted of 4.7 (SD = 8.7) property crimes, 5.3 (SD = 7.7) violent crimes, and 2.3 (SD = 2.2) sexual crimes. In total, 30% of them were sexual recidivists (i.e., had been convicted previously of a sexual crime).

Procedures

     Information about offenders was gathered using the Computerized Questionnaire for Sexual Aggressors (CQSA) *(52)* by a criminologist and a psychologist following a semi-structured interview. Police records, the victim statements, and the institutional case file were consulted to determine details about their criminal activities. In case of disagreement between self-reported data gathered using the CQSA and the official data (police record, victim

statement, and institutional files), the official data were used. Participants included in this study signed a consent form indicating that the information gathered would be used for research purposes only (Table 1).

Table 1
Descriptive Statistics of Individual Characteristics of Offenders, Situational Factors of Their Sexual Crime, and the Level of Violence Used to Perpetrate the Offense

Variables	Descriptive data [mean (standard deviation) or prevalence]
Sociodemographic background factors	
Age	33.7 (9.0) years
Ethnic origin (non-Caucasian)	15.0%
Sexual recidivist	30.1%
Individual characteristics of the offenders	
Antisocial tendency (standardized scale)	−0.10 (2.04)
Sexualization (standardized scale)	2.97 (3.40)
Psychosocial deficits (standardized scale)	−0.01 (1.22)
Pre-crime situational factors	
Alcohol use prior to the offense	63.6%
Pornography use prior to the offense	7.5%
Being angry about something/someone	29.9%
Characteristics of the crime event	
Intimate relationship with the victim	32.6%
Stranger victim	31.6%
Presence of a weapon	42.2%
Presence of co-offenders	9.6%
Risk of being apprehended	48.1%
Time spent with the victim (more than 15 minutes)	72.7%
Level of resistance of the victim	None = 4.8%
	Passive = 10.2%
	Verbal = 18.7%
	Physical = 8.6%
	Verbal and physical = 57.8%
Level of violence	
Expressive violence used to perpetrate the offense	61.5%
Presence of physical and verbal humiliation of the victim	13.4%
Important injuries inflicted on the victim	21.4%

Measures

INDIVIDUAL DIFFERENCES AND CRIMINAL PROPENSITY AND ANTISOCIAL TENDENCY

Based on the operationalization of LeBlanc and Bouthillier *(53)* and our previous empirical study *(23)*, four scales were used to operationalize the concept of antisocial tendency, or a tendency to lack control over one's behavior. These four scales included items related to childhood (0–12) and adolescence (aged 13–17) measured using a three-point scale: 0, did not commit the behavior; 1, committed the behavior either in childhood or adolescence; and 2, committed the behavior in both childhood and adolescence. These measures take into account the precocity and persistence of this antisocial tendency. Most of the items are self-explanatory, but for others, further details are provided. The authority-conflict scale ($\alpha = .70$) included four items related to authority-defying behaviors at home and in school: being disruptive in class, running away from home, being rebellious against an authority figure, and being short tempered (e.g., the tendency to lose temper and become angry easily). The reckless scale ($\alpha = .60$) was composed of three items: alcohol abuse, substance abuse, and dangerous behaviors (i.e., put someone else's or their own health or security in jeopardy just for the fun of it). To determine alcohol and substance abuse, we used criteria of the Diagnostic and Statistical Manual of Mental Disorders. The covert scale ($\alpha = .70$) was composed of seven items related to concealing acts: repetitive and frequent lying, theft, selling drugs, burglary, plotting a property crime, fraud, and any other property crime. The overt scale ($\alpha = .74$) was composed of seven items related to acts of non-sexual violence: cruelty against an animal, assault, threats against someone, armed robbery, theft using physical violence, using a weapon to deliberately harm someone, and any other act of violence. The higher the score on each of the four scales, the more an individual has shown an antisocial tendency during childhood and adolescence. The score on this scale has been showed to be linked to non-sexual and sexual criminal activities in adulthood *(22,23)*.

SEXUALIZATION

Three inter-related aspects of sexualization were selected using a total of 16 items. These three behavioral manifestations were (i) impersonal sexual lifestyle, (ii) sexual compulsivity, and (iii) pornography scale. The impersonal sex scale ($\alpha = .71$) consisted of the three following items: (i) age at first sexual contact, (ii) age at first sexual intercourse, and (iii) number of sexual partners (divided by age). Individuals scoring high on the scale of impersonal sex can be described as exhibiting a precocious sexuality with a high number

of sexual partners. The sexual compulsivity scale ($\alpha = .72$) included seven items: (i) compulsive masturbation in adolescence, (ii) compulsive masturbation in adulthood, (iii) masturbating on a daily basis in adulthood, (iv) being overwhelmed by deviant sexual fantasies, (v) being overwhelmed by non-deviant sexual fantasies, (vi) having deviant sexual fantasies 1 year prior to the sexual offense for which they were incarcerated, and (vii) paraphilias (e.g., bestiality and fetishism). The higher the score on this scale, the more an individual shows signs of sexual compulsivity. The pornography scale ($\alpha = .69$) was composed of six items representing the use of pornographic magazines, pornographic movies, as well as frequenting strip joints for both adolescence and adulthood. An individual scoring high on this scale can be characterized as being a consumer of pornographic material. All the items for the sexual compulsivity and the pornography scales were dichotomized data (0, absent and 1, present). This measure of sexualization has been shown to be linked to sexual criminal activity in adulthood and sexual crime polymorphism *(54)*.

PSYCHOSOCIAL DEFICITS

Three inter-related aspects of psychosocial deficits were used: (i) social withdrawal, (ii) depression, and (iii) anxiety and somatic complaints. These three manifestations all reflect a tendency to over-control one's behavior. They include items related to childhood (0–12) and adolescence (ages 13–17) measured using a three-point scale: 0, did not present such manifestation; 1, did present the manifestation either in childhood or in adolescence; and 2, did present such manifestation in both childhood and adolescence. The social withdrawal scale ($\alpha = .89$) includes two items related to the difficulty forming interpersonal relationships and friendships during childhood and adolescence. The depression scale ($\alpha = .64$) includes three items and reflects a persistent tendency to perceive oneself as inadequate and inferior compared with peers during childhood and adolescence. The anxiety and somatic complaints scale ($\alpha = .76$) includes fourteen items related to having difficulties sleeping, having frequent nightmares, phobias, headaches, and enuresis. This measure of psychosocial deficits has been showed to be linked to sexual criminal activity in adulthood and sexual crime polymorphism *(54)*.

CRIMINAL OPPORTUNITY

Criminal opportunity was measured from two sets of different variables. First, we included dichotomous pre-crime factors: (i) the use of alcohol prior to the offense (0, no and 1, yes), (ii) pornography use prior to the offense (0, no and 1, yes), and (iii) being significantly angry about something/someone prior to the

offense (0, no and 1, yes). The second set of variables included characteristics of the crime event: (i) having an intimate relationship with the victim (0, no and 1, yes), (ii) having no relationship with the victim (i.e., stranger victim) (0, no and 1, yes), (iii) the presence of a weapon (0, no and 1, yes), (iv) the presence of co-offenders (0, no and 1, yes), (v) the risk of being apprehended by the police (0, low and 1, high), (vi) the time spent with the victim (0, less than 15 minutes and 1, 15 minutes or more), and (vii) the level of resistance of the victim which was assessed using a five-point scale (0, none; 1, passive; 2, verbal; 3, physical; and 4, verbal and physical).

CRIME SCENE BEHAVIOR

In our sample, the range of number of sexual crime events per offender varied greatly (minimum = 1 and maximum = 400). Most sexual aggressors of women included in our sample, however, had only one (67.9%) or two sexual crime events (13.9%). Considering that most sex offenders had committed two sexual crimes, the first sexual criminal event was used in our analysis. Three variables were used to measure the level of violence used during the sexual criminal event: (i) expressive violence, (ii) humiliation of the victim, and (iii) injuries inflicted on the victim. Considering the skewed distribution of these three variables, they were all dichotomized for further analysis. The variable "expressive violence" reflects the use of physical violence during the criminal event that was more than necessary to control the victim. The variable "humiliation of the victim" relates to the presence of both verbal (e.g., talking in a demeaning manner) and physical (e.g., urinating on the victim). Finally, the variable "injury to the victim" reflects the presence of important and significant injuries inflicted on the victim during the criminal event (i.e., medical treatment was required at the very least).

Statistical Analysis

Preliminary correlation analyses between individual characteristics of offenders, situational factors of their sexual crime, and the crime scene characteristics were conducted. To investigate the relationship between individual characteristics of offenders, situational factors of their crime, and the crime scene characteristics, we ran sequential logistic regression analyses. The four blocks of predictors were (i) background characteristics of offender, including age, ethnic origin, and sexual recidivism; (ii) individual characteristics of the offender, including antisocial tendency, sexualization, and psychosocial deficits; (iii) pre-crime situational factors, including alcohol use, pornography, and anger prior to the offense; and (iv) characteristics of the criminal event,

including relationship with the victim, presence of a weapon, presence of co-offenders, risk of being apprehended, time spent with the victim, and level of resistance of the victim. We hypothesized that predisposing variables, such as characteristics of the offender, should be introduced first followed by situational factors and characteristics of the criminal event so as to reflect the process leading up to the criminal act.

RESULTS

Table 2 presents the correlation matrix for all the variables studied. Only two out of our six characteristics related to the individual characteristics were related to our measures of crime scene behavior. Both the ethnic origin (i.e., non-

Table 2
Correlation Matrix (Spearman's rho) Between Individual Characteristics of Offenders, Situational Factors of Their Sexual Crime, and the Level of Violence Used to Perpetrate the Offense

	Expressive violence ($n = 187$)	Injury to victim ($n = 187$)	Humiliation of victim ($n = 180$)
Background characteristics of the offender			
Age	−.12	.01	−.08
Ethnic origin (non-Caucasian)	−.16*	−.07	−.02
Sexual recidivist	−.04	.09	−.09
Motivational factors			
Antisocial tendency	.13	.04	.04
Sexualization	.17*	.07	.15*
Psychosocial deficits	.06	.15*	.09
Pre-crime situational factors (24 hours)			
Alcohol use prior to the offense	.18*	.18*	−.08
Pornography use prior to the offense	−.07	−.05	.18*
Being angry about something/someone	.23**	.06	.11
Characteristics of the crime event			
Intimate relationship with the victim	.10	−.14	.16*
Stranger victim	.04	.18*	−.03
Presence of a weapon	.12	.16*	.21*
Presence of co-offenders	.11	.05	.21*
Risk of being apprehended	.19**	.18*	.03
Time spent with the victim	.08	.08	.18*
Level of resistance of the victim	.43***	.26***	.09

*$P < .05$; **$P < .01$; ***$P < .001$.

Caucasian) and sexualization were related to the level of violence used during the criminal event. On the contrary, all three pre-crime situational factors were related to the crime scene behavior. Some differences, however, were observed. Expressive violence was positively related to both alcohol use and being angry: important injury inflicted on the victim was related to alcohol use, whereas pornography use was related to the presence of humiliation of the victim. Similarly, all our six measures of characteristics of the criminal event were related to the crime scene behavior. A high risk of being apprehended and a higher level of resistance of the victim were related to the level of violence used. The presence of important injuries inflicted tends to characterize stranger rapists, in a situation where a weapon was present, there was a higher risk of being apprehended and a higher level of resistance of the victim. Humiliation of the victim tended to be more prevalent in rapists offending against an intimate victim, where a weapon and co-offenders were present and the crime event lasted more than 15 minutes.

We ran separate sequential logistic regression analyses on the three variables of crime scene characteristics. Table 3 summarizes that ethnic origin is the only offender characteristic negatively linked to the use of expressive violence to perpetrate the offense. When introducing the situational factors, however, this indicator becomes non-significant. Alcohol use and being angry prior to the offense are pre-crime factors positively related to the use of expressive violence. In particular, those offenders who were angry prior to the sexual criminal event were approximately three times more likely to use expressive violence on the victim than those who did not present such an emotional state. Furthermore, an intimate victim, the presence of co-offenders, a high risk of being apprehended, an offense duration of more than 15 minutes, and the resistance of the victim were all positively related to the use of expressive violence during the crime.

Interestingly, when introducing the criminal event characteristics, sexualization became significantly associated with the use of expressive violence, suggesting the presence of an interaction effect with criminal event characteristics. The odds ratio of sexualization, however, is low, thus suggesting that the relationship might not be strong. This model explained 35% of the variance of expressive violence used. It should be noted that most of it was explained by criminal event characteristics.

Table 4 summarizes that none of the offender individual characteristics were significantly linked to the presence of important injuries inflicted on the victim during the perpetration of the crime. Pre-crime situational factors, however, such as alcohol use, the presence of a weapon, as well as the resistance of the victim, were all positively related to it. Twenty one percent of the variance of important injuries inflicted on the victim was explained by this model.

Table 3

Sequential Logistic Regression Analyses of Individual Characteristics of Offenders and Situational Factors of their Sexual Crime on the Use of Expressive Violence During the Perpetration of the Sexual Crime (n = 187)

	Background characteristics	Offender characteristics	Pre-crime factors	Characteristics of the crime event
Background characteristics of the offender				
Age	0.97 (0.93–1.00)*	0.98 (0.94–1.01)	0.97 (0.93–1.01)	0.96 (0.93–1.00)
Ethnic origin (non-Caucasian)	**0.34 (0.14–0.79)****	**0.36 (0.15–0.90)****	0.44 (0.17–1.11)*	0.43 (0.13–0.78)
Sexual recidivist	0.83 (0.43–1.62)	0.73 (0.36–1.48)	0.78 (0.37–1.63)	0.75 (0.43–1.68)
Individual characteristics of the offender				
Antisocial tendency	—	1.33 (0.62–2.87)	0.99 (0.44–2.24)	0.95 (0.80–1.29)
Sexualization	—	1.07 (0.96–1.18)	1.09 (0.98–1.21)	**1.14 (1.00–1.29)****
Psychosocial deficits	—	0.68 (0.24–1.89)	0.62 (0.22–1.77)	0.32 (0.50–1.02)*
Pre-crime situational factors				
Alcohol use prior to the offense	—	—	**1.94 (1.00–3.75)****	1.73 (0.69–3.74)
Pornography use prior to the offense	—	—	0.38 (0.11–1.31)	0.40 (0.11–1.82)
Being angry about something/someone	—	—	**3.03 (1.39–6.57)*****	**3.45 (1.32–8.90)****
Characteristics of the crime event				
Relationship with the victim				
Intimate	—	—	—	**3.35 (1.29–9.52)****
Stranger	—	—	—	2.07 (0.82–5.98)
Presence of a weapon	—	—	—	1.47 (0.62–3.32)
Presence of co-offenders	—	—	—	**7.39 (1.10–50.31)****
Risk of being apprehended	—	—	—	**2.86 (1.12–6.41)****
Time spent with the victim	—	—	—	**2.67 (1.02–6.30)****
Level of resistance of the victim	—	—	—	**2.74 (1.87–3.94)******
Variance explained (Cox and Snell's R^2)	0.05	0.06	0.13	0.35

Odds ratios are reported with 95th confidence interval in parentheses.

$*P < .10; **P < .05; ***P < .01; ****P < .001.$

Table 4

Sequential Logistic Regression Analyses of Individual Characteristics of Offenders and Situational Factors of Their Sexual Crime on the Presence of Important Injuries Inflicted to the Victim During the Perpetration of the Sexual Crime ($n = 187$)

	Background characteristics	Offender characteristics	Pre-crime factors	Characteristics of the crime event
Background characteristics of the offender				
Age	0.99 (0.96–1.04)	1.00 (0.95–1.05)	1.00 (0.95–1.05)	0.99 (0.93–1.05)
Ethnic origin (non-Caucasian)	0.61 (0.19–1.90)	0.70 (0.21–2.31)	0.83 (0.24–2.84)	1.34 (0.33–5.41)
Sexual recidivist	1.49 (0.70–3.16)	1.42 (0.64–3.16)	1.52 (0.67–3.46)	2.20 (0.81–5.99)
Individual Characteristics of the Offender				
Antisocial tendency	—	0.86 (0.36–2.09)	0.76 (0.30–1.90)	0.48 (0.18–1.32)
Sexualization	—	0.98 (0.87–1.11)	0.98 (0.86–1.12)	1.00 (0.86–1.15)
Psychosocial deficits	—	2.89 (0.92–9.05)*	3.14 (0.95–10.37)*	3.18 (0.81–12.50)*
Pre-crime Situational Factors				
Alcohol use prior to the offense	—	—	**2.79 (1.17–6.65)****	**2.93 (1.08–7.97)****
Pornography use prior to the offense	—	—	0.40 (0.07–2.11)	0.71 (0.12–4.17)
Being angry about something/someone	—	—	1.14 (0.51–2.54)	1.00 (0.39–2.59)
Characteristics of the Crime Event				
Relationship with the victim				
Intimate	—	—	—	0.62 (0.20–1.93)
Stranger	—	—	—	2.00 (0.75–5.37)
Presence of a weapon	—	—	—	**3.14 (1.28–7.71)****
Presence of co-offenders	—	—	—	1.60 (0.42–6.10)
Risk of being apprehended	—	—	—	1.49 (0.58–3.83)
Time spent with the victim	—	—	—	2.79 (0.99–7.85)*
Level of resistance of the victim	—	—	—	**2.35 (1.40–3.95)****
Variance explained (Cox and Snell's R^2)	0.01	0.03	0.07	0.21

Odds ratios are reported with 95th confidence interval in parentheses.
* $P < .10$; ** $P < .05$.

Finally, Table 5 presents results for the presence of humiliation of the victim during the criminal event. None of the offender characteristics were significantly related to humiliation of the victim. Moreover, it is only after introducing the criminal event characteristics that pornography use prior to the crime became significant, being positively linked to the presence of humiliation of the victim. This result might suggest an interaction between having used pornography prior to the criminal event and the unfolding of the sexual criminal event. Having committed a sexual crime against an intimate adult female, the presence of a weapon, the presence of co-offenders, and a higher level of resistance from the victim are all positively linked to the presence of humiliation of the victim during the perpetration of the sexual crime. This model explained 22% of the variance of humiliation of the victim.

DISCUSSION

Criminal Propensity and Individual Differences

This study showed that individual differences were not strongly related to crime scene characteristics related to the level of violence during sexual aggression against women. This result may seem surprising considering explanatory models of sexual aggression *(20,23,27,55)*. These etiological models of sexual aggression have been developed in order to explain the propensity of committing a sexual aggression. In other words, these models postulate that the presence of psychosocial deficits, a high antisocial tendency, and a high sexualization increase the risk of committing a sexual crime during the criminal career. Although our previous empirical studies have shown the predictive value of these theoretical constructs when explaining the age of onset of sexual criminal activity, the number of sexual crimes committed, and a tendency to offend against different types of victim *(23,54)*, their predictive ability was rather modest at best when explaining the characteristics of a particular criminal event. On the contrary, these etiological models have not addressed the criminal event perspective. In fact, the field of sexual aggression has neglected to address theoretically and empirically the situational and contextual factors of sexual aggression from a criminal event perspective. In regard to our study, it appears to be an important limitation to our understanding of sexual aggression considering that our results clearly indicate that situational and contextual factors explain much of the variance related to the violence used during the criminal event. One future area of research will be to investigate how these individual differences interact with situational and contextual factors in order to explain the level of violence used in a sexual crime. As mentioned by Warr *(56)*, "the concept of opportunity cannot be divorced from motivation,

Table 5

Sequential Logistic Regression Analyses of Individual Characteristics of Offenders and Situational Factors of Their Sexual Crime on the Presence of Physical and Verbal Humiliation of the Victim During the Perpetration of the Sexual Crime (n = 180)

	Background characteristics	Offender characteristics	Pre-crime factors	Characteristics of the crime event
Background characteristics of the offender				
Age	0.98 (0.94–1.04)	1.00 (0.94–1.06)	1.00 (0.94–1.07)	1.00 (0.93–1.08)
Ethnic origin	0.99 (0.30–3.24)	1.28 (0.37–4.50)	1.32 (0.35–4.99)	2.05 (0.41–10.18)
Sexual recidivist	0.55 (0.19–1.58)	0.43 (0.14–1.31)	0.40 (0.13–1.27)	0.48 (0.12–1.88)
Individual characteristics of the offender				
Antisocial tendency	—	0.92 (0.31–2.71)	1.06 (0.34–3.29)	1.04 (0.27–3.92)
Sexualization	—	1.13 (0.99–1.29)*	1.11 (0.96–1.27)	1.14 (0.97–1.34)
Psychosocial deficits	—	1.74 (0.44–6.82)	1.47 (0.36–5.96)	2.20 (0.40–12.06)
Pre-crime situational factors				
Alcohol use prior to the offense	—	—	0.52 (0.18–1.64)	0.54 (0.18–1.64)
Pornography use prior to the offense	—	—	3.66 (0.97–13.82)*	5.73 (1.10–29.77)**
Being angry about something/someone	—	—	2.04 (0.81–5.16)	0.92 (0.30–2.81)
Characteristics of the crime event				
Relationship with the victim				
Intimate	—	—	—	5.36 (1.18–24.46)**
Stranger	—	—	—	2.28 (0.45–11.52)
Presence of a weapon	—	—	—	3.88 (1.21–12.46)**
Presence of co-offenders	—	—	—	14.45 (2.97–70.27)***
Risk of being apprehended	—	—	—	1.16 (0.33–4.05)
Time spent with the victim	—	—	—	3.49 (0.69–17.76)
Level of resistance of the victim	—	—	—	1.90 (1.06–3.40)**
Variance explained (Cox and Snell's R^2)	0.01	0.03	0.07	0.22

Odds ratios are reported with 95th confidence interval in brackets.
*$P < .10$; **$P < .05$; ***$P < .01$.

because the significance of the one hinges on the other" (p. 88). The likelihood that criminal propensities will be translated into criminal action depends in large part on the opportunity structure *(57)*.

Criminal Opportunity

Previous studies have already demonstrated the important role of certain situational/opportunity factors included in our study on the crime scene behaviors of sex offenders *(55,58–61)*. When looking at the criminal event, and especially in this case at how the crime is committed, one cannot overlook the importance of opportunity factors "because those external conditions are frequently beyond the immediate control of the actor, and because the conditions that permit particular crimes are often rare or improbable, opportunity becomes the limiting factor that determines the outcome of potentially criminal situations, and thus, by extension, the incidence of criminal behavior in a jurisdiction" *(56, p. 69)*. Furthermore, Warr provides some indication on how, for example, co-offenders may serve as an opportunity factor in the crime commission process and how it can relate to the humiliation as well as the use of expressive violence in our results. Thus, co-offending may take on special significance because of the possibility that accomplices fulfill certain necessary conditions in the crime commission process as well as providing motivation. As to sexual aggressors against women, some may require cooperation for completion of the crime (e.g., getting access to the victim, controlling the victim, preventing resistance, and/or potential interference from bystanders), whereas others thrive on companionship and can be influenced before or even during the course of the attack *(56)*.

Criminal Profiling and the "Homology Assumption"

Most empirical studies on criminal profiling of sex offenders have used a typology or classification approach where different behavioral patterns were identified and then linked to some characteristics of offenders *(2,44,47,62)*. Similar work has also been conducted on homicide *(63–65)*. Results from these studies demonstrate that there is an absence of consensus on which crime scene characteristics are associated with characteristics of the offender and how they interact. For example, some authors have concluded that sadistic sexual aggressors presented a psychopathic and narcissistic personality *(66–68)*, whereas others found either no relationship with psychopathy *(69)* or an avoidant-schizoid personality profile *(70)*.

The major problem identified in these studies in relationship with criminal profiling is that they assume the offending process of sex offenders to be stable

and "specialized" and clearly disregard the situational factors or the opportunity structure of crimes *(34,71)*. This "homology assumption" neglects results from studies that showed at least some polymorphism in sex offenders *(54,72–75)*. Moreover, this homology assumption neglects to consider all the studies on situational factors influencing certain parameters of the offending process of sex offenders *(1,55,59–61,76–80)*.

Congruent with such results, our study further demonstrates the importance of opportunity factors (i.e., pre-crime and criminal event characteristics) on the offending process and the resulting crime scene. Despite the absence of relationships between criminal propensity factors and crime scene characteristics, results regarding opportunity factors may prove useful in the criminal profiling process. For example, we found that sex offenders using pornography prior to the offense were approximately five times more likely to humiliate the victim during the crime as compared with sex offenders who do not use pornography. This positive relationship between pornography and humiliation of the victim might help investigators to specify certain materials in search warrants, such as pornographic movies or magazines *(41)*. As an investigative tactic, this particular information could be used in conjunction with business databases. Thus, a search for all video stores could produce a list, which would be prioritized according to the area most likely to find the offender. Investigators could then use the information to focus their search by showing composite suspect sketches and checking frequent renters of pornographic movies *(81)*. Moreover, the same information could be used to direct saturation patrol in areas where businesses selling or renting pornography are located *(81)*. Also, our results showed that sexual aggressors against women who used alcohol prior to the offense were almost three times more likely to inflict important injuries on the victim as compared with offenders who did not. As with the use of pornography, this relationship might be used by investigators in order to establish the routine activities of the offender in the hours prior to the offense *(15)*. Sexual aggressors against women who commit their crime with a high risk of being apprehended are almost three times more likely to use expressive violence during the offense than offenders who do not. This result may indicate that these offenders are more impulsive, less organized, and unaware of the environmental cues associated with the criminal situation *(82)*.

CONCLUSIONS

The aim of this study was to test empirically the relationship between criminal propensity and criminal opportunity factors on the crime scene characteristics of a sexual offense. Contrary to the "homology assumption" of criminal

profiling *(34)*, results showed that personal characteristics of sexual aggressors against women were not significant predictors of the crime scene character-istics. In fact, our analysis showed that situational and contextual characteristics were more strongly related to crime scene characteristics of sexual aggressors against women. As previously stated, Beauregard and colleagues *(1)* have also partially demonstrated the greater impact of situational factors over offender characteristics (i.e., sexual fantasies) on three different parameters of rapists' *modus operandi*. Such results point out the importance of including opportunity factors in any criminal profiling model. Previous studies have emphasized the role of the offender and the victim but have neglected to take into account the context surrounding the crime. In order to get better prediction out of the profiling process, the contextual aspect of the criminal event must be detailed and included in the analyses. The importance of opportunity factors is further highlighted by Warr *(56)*: "As necessary conditions for events, opportunities establish a foundation for the prediction of events in time and space. Armed with ample knowledge of opportunity and nothing else, investigators may say with confidence precisely where and when events will not take place, and, with probabilistic confidence, where and when they can take place. Even this latter capability, as we have seen, has compelling uses, if only to establish the limits of criminal behavior and/or properly calculate risk. When combined with other limiting information (to wit, motivation), opportunity provides the possibility for a powerful algebra of events" (p. 88). Moreover, opportunity factors will not only provide indication on "Where" and "When" but also on "How" the crime may be committed.

The criminal propensity factors included in this study have proven useful in the explanation of sexual aggression against women. However, when trying to explain how the crime is committed, we realize the greater importance of the contextual elements of the criminal event. This finding might help to better understand the role of different factors on crime. In this case, it may be that criminal propensity factors will predict what drives the individual into crime or into a specific type of crime, whereas opportunity factors will predict how an offender will commit his crime. Despite all these findings, this study is not without its own limitations. First, self-report data as to opportunity and criminal propensity factors may be of questionable validity because of the context of data collection, namely, an assessment in a correctional setting. Second, it may be that non-serial sex offenders present a different pattern of offending as compared with serial sex offenders, the latter being less sensitive to the opportunity structure and presenting personal characteristics that directly influence the offending process. Future studies should try to look at different personal attributes of offenders in order to find whether there exists such a

relationship between crime scene characteristics and the personal characteristics of offenders, when taking into account opportunity factors. If such relationships persist despite the inclusion of opportunity factors, these results could help investigators and those responsible for producing a criminal profile to make better predictions as to the offender's characteristics and as to the reconstruction of the criminal event.

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PART II

NEW TECHNIQUES AND APPLICATIONS

Chapter 6

Case Linkage

Identifying Crimes Committed by the Same Offender

Jessica Woodhams, Ray Bull, and Clive R. Hollin

Summary

This chapter begins by explaining the purposes of linking crimes committed by the same offender and what case linkage can add to a police investigation and prosecution. The various steps involved in the process of case linkage are explained. The assumptions of behavioral consistency and inter-individual behavioral variation, which case linkage rests on, are outlined, and the research that has begun to test these assumptions is reported. The effect of poor-quality data on the case linkage process and on empirical research is examined. Current methods and future developments for overcoming this difficulty are described. The obstacles to identifying linked crimes across police boundaries are discussed. Case linkage research and practice are compared with various criteria for expert evidence with promising results. The chapter closes by considering future avenues for research and practice in case linkage.

INTRODUCTION

If a police officer is investigating a rape and the perpetrator of the rape has committed other sexual crimes, there are several reasons why it would be advantageous for all of the perpetrators' crimes to be investigated together. First, this would enable the police force(s) to use their limited resources more efficiently. Investigative efforts can be combined rather than the crimes being investigated in parallel, which would result in the duplication of work. Knowledge about

the perpetrator or evidence against the perpetrator gathered from each crime scene can be combined *(1)*, which can potentially result in the more rapid apprehension of the suspect or can potentially strengthen the case against them.

Identifying crimes committed by the same perpetrator can be relatively straightforward if the victims know the identity of their attacker. However, if the suspect is a stranger to the victim, then identification can be less straightforward. Physical evidence, such as DNA, can be used to link crimes together committed by an unknown suspect, but in a number of crimes, there is no physical evidence to identify the offender *(2)*. It is in such situations that case linkage can be of use.

Case linkage is a process that aims to identify crimes that are likely to have been committed by the same suspect because of the behavioral similarity across the crimes. Crimes committed in a similar manner are "linked" to form a "series." In other words, the crimes are linked together because the offender has behaved in the crimes in a very similar way, and therefore, it is probable that the same offender has committed all of these crimes. Evidence that an offender is likely to have committed a group, or *series*, of crimes is not only useful for investigative purposes, as outlined above, but can also be presented as similar fact evidence in legal proceedings *(3,4)*.

Case linkage is typically conducted by crime analysts or police officers. It is sometimes called "comparative case analysis" *(5)* or "linkage analysis" *(3)* and has been described as a type of behavioral analysis *(2)*. It has most often been used with crimes such as stranger rape and murder. However, as will become clear later in this chapter, it can be, and is, used with volume crime, such as burglary and robbery.

Previous writers have considered the linking of crimes to be a type of offender profiling, and indeed, expert profilers are asked to link crimes *(6)*. The two approaches do share some common features: for example, both are most often used for crimes committed by unknown offenders. Criminal profiling and case linkage also share the assumption that offenders are consistent in the way that they behave across their crime series. This assumption has been termed the offender consistency hypothesis *(7)*. However, although the two approaches share common features, it is important to recognize their differences. Profiling makes predictions about a person's (demographic) characteristics from their crime scene behavior. Hence, it requires a relationship between behavior and a person's (demographic) characteristics. It follows that offenders who share similar criminal behaviors should therefore share similar demographic characteristics. This assumption has been termed the homology assumption *(8,9)*. Case linkage does not, however, make this assumption. The assumptions underlying case linkage are outlined later in this chapter. The next section outlines the process itself.

THE PROCESS OF CASE LINKAGE

There are typically two different scenarios in which a crime analyst would seek to link crimes. An analyst can proactively search for linked crimes among a database of crimes. Alternatively, they can engage in a reactive search having been presented with an index offense (for which the offender might already have been identified) with a request to identify other crimes potentially committed by the same offender. Depending on the purposes for which an analyst has been consulted, the processes involved in the linking of crimes can vary slightly. However, the same general steps will be followed, and these are illustrated in Figure 1.

First, the crime analyst must collate all the relevant information about the crime(s) in which they are initially interested. Typically, the victim's account of the crime is the primary source of information. Clearly, were the victim killed during the commission of the crime, this will not be available.

Victim accounts can be in two forms. The first is a victim statement. This is typically a chronological account of the crime that is written collaboratively with a police officer *(10)*. Alternatively, the crime analyst may have access to the written transcript of the victim's interview with the police *(11)*. In such circumstances, the victim is often asked to freely recall the event and is then questioned further on this. A transcript of an interview is not therefore a chronological account of the event and is likely to contain quite a bit of repetition. As well as consulting the victim's account, the crime analyst may consult other records, such as the suspect's account (if apprehended) and medical examination
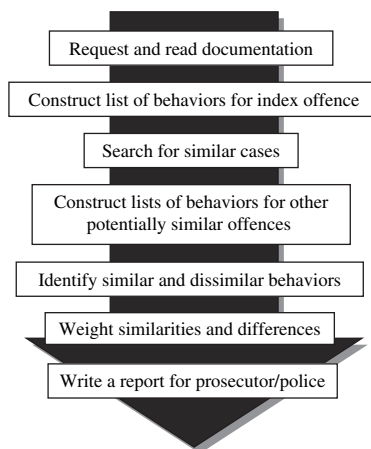
Fig. 1. The process of linking crimes.

reports, or they may choose to visit the crime scene itself. With murder cases, the analyst can consult materials such as crime scene photographs or sketches, the autopsy reports, and toxicology reports *(3)*.

Having collated all relevant information, the crime analyst must compose a list of the behaviors exhibited by the perpetrator. Some behaviors might be more spontaneous, whereas others may be produced as a reaction to the victim or witnesses. In some jurisdictions, as well as creating a list of behaviors, the analyst classifies suspect behaviors as "*modus operandi*" behaviors or "ritualistic" behaviors *(3)*. In these circumstances, the term "*modus operandi*" is used to refer to behaviors that are necessary for the offender to commit the crime, whereas ritualistic behaviors are not and are fantasy-based. Alison et al. *(12)* explain that *modus operandi* behaviors are "functionally significant" and dependent on context. Whereas, what Alison et al. *(12)* term "signature" behaviors are "psychologically significant" and are not dependent on context. These are behaviors that seem similar to Hazelwood and Warren's *(3)* ritualistic behaviors.

There is a difficulty in referring to ritualistic behaviors as fantasy-based, as fantasy-based behaviors will be more relevant to some crimes, such as sexual crime, and perhaps less relevant to property crimes on which case linkage is still conducted. Terms such as "psychologically significant" and "functionally significant" may be more helpful. However, there are some inherent problems with categorizing behaviors in this way.

First, it seems unlikely that psychologically relevant behaviors are truly context independent. The psychological meaning of a situation is influential in determining the behavior that is displayed *(13)*, and during a crime, the psychological meaning of a situation could change for an offender depending on a number of factors. For example, Davies *(14)* describes a serial rapist whose behavior toward his victims appeared to vary depending on his perception of their status. The offender was complimentary of a middle-class young female victim, but he physically and verbally abused his other victims, most of whom were older and appeared less affluent.

Second, as recognized by both Hazelwood and Warren *(3)* and Alison et al. *(12)*, categorizing a behavior as *modus operandi* or ritual/signature requires a subjective decision on the part of the analyst as to the psychological meaning of a behavior. Both sets of authors comment on the difficulty of determining whether a behavior constitutes *modus operandi* or ritual. As an example, the age and sex of the victim in a sexual crime are noted as a *modus operandi* behavior by Hazelwood and Warren *(3)*, and yet, these could quite clearly be related to an offender's sexual fantasy. Hazelwood and Warren *(3)* also comment that a behavior could be both *modus operandi* and ritual. The categorization

of offender behaviors into *modus operandi* or ritual/signature therefore has a number of associated difficulties and is perhaps an unnecessary optional step in the case linkage process.

Once a list of behaviors has been created for the crime(s) in question, the analyst's next task is to search for crimes where similar behaviors were displayed. When potentially similar crimes are identified, the analyst must again collate information about the perpetrator's behavior and create a list of behaviors engaged in for each offense. The analyst can then consider similarities and differences in behavior between the offenses. The context in which a behavior occurs is also considered because this can alter the apparent similarity or difference in behavior between crimes. A behavior that initially appears different might be explained by situational influences, such as victim behavior or third party disturbance. For example, apparent differences in the use of physical violence by a rapist could be explained by variations in the victims' resistance. The analyst must in this case consider the context in which violence occurred.

Having identified similarities and differences between crimes, an important stage in this process is to consider the base rates for such behaviors. Two crimes might share a similar behavior, but if the behavior commonly occurs within the particular class of offense (e.g., rape and robbery), this would not strongly suggest that the same offender committed the two crimes. In some jurisdictions, databases of behaviors are available to enable such *weighting* of similarities and differences, whereas in others, the analyst has to rely on their own expertise with a crime type or on the combined expertise of the analyst team. Hazelwood and Warren *(3)* refer to the analyst identifying the *signature* of an offender or the *unique combination of behaviors* they have engaged in. Although different terminology is being used in the literature, the same point is essentially being made: that this process does not only involve the identification of shared behaviors but that the rarity of such behaviors must also be considered.

Having considered the similarities and differences in behavior between crimes, and the base rates of behaviors, the crime analyst must finally decide whether, in their opinion, it is probable that the same offender committed the crimes analyzed. A crime analyst would not expect perfect consistency in behavior for the reasons outlined above. This point raises the question of how similar two crimes must be before the analyst should give their opinion that it is probable that the same offender committed both crimes. As recognized by Bennell and Canter *(5)*, there are financial and human costs associated with setting the criteria for linking crimes either too low or too high. These issues will also vary depending on whether the analyst's opinion is to be used for investigative purposes or in legal proceedings. Little research has thus far considered this issue; hence, Bennell and Jones *(15)* have called for researchers

to begin investigating this topic. Recommendations for practice are therefore not possible at this stage until more research is completed; however, interested readers are referred to Bennell and Canter *(5)*, Bennell and Jones *(15)*, and Alison et al. *(12)* for further information.

The final stage of the process involves the analyst producing a written report for their client in which they can draw their client's attention to similar crimes were any identified. Their clients include police officers, crime analysts from other jurisdictions, and prosecutors. As well as providing a written report, analysts can also be asked to give formal verbal presentations of their findings to the client.

Case linkage requires the crime analyst to process a substantial amount of information, and this can put considerable cognitive load on the analyst *(16)*. Some policing organizations have recognized this difficulty and have developed databases, which the analyst can search for similar offenses *(17)*. Without such resources, the analyst's memory of similar crimes would have to be relied on, which is clearly undesirable. As well as using such databases for searching, some efforts have been made in automating part of the linking process by computerizing the actual comparison of offense behaviors between crimes to produce a measure of similarity for each pair of crimes in the database. The crime analyst can prioritize pairs of crimes with a high similarity score for further analysis. The first author has been working with a UK police force in developing such a system for linking robberies. Such automation does not currently have the capacity to consider the context in which a behavior occurred, and for such reasons, it is unlikely that the process of case linkage could be fully automated.

Such developments in the use of technology have increased the efficiency and potentially the accuracy of the linking process. However, the creation and maintenance of large databases requires considerable input. Information has to be collated for each crime and entered onto the database. Quality assurance procedures are also required to ensure the accuracy of the database. These processes are time consuming, and therefore, the question has been raised as to whether data collection and entry can be focused on a smaller number of perpetrator behaviors. Research is outlined in the section entitled "Evaluating Case Linkage", which is beginning to suggest that this step may be possible in the future.

THE THEORY OF CASE LINKAGE

The use of case linkage in advising and directing police investigations and its potential use as similar fact evidence in legal proceedings requires that it has a sound theoretical basis. The process of linking crimes rests on

two key assumptions. The first assumption is that criminals are consistent in the way they behave across their crimes. In psychology, the assumption that people show consistent behavior across different situations is termed cross-situational consistency *(18)*. However, case linkage focuses on the similarity of an individual's criminal behavior within a crime type (e.g., within robberies or within sexual offenses). This is a special type of cross-situational consistency, termed the offender consistency hypothesis *(7)*.

The second assumption is that there is variation in the way different criminals commit crimes. For it to be possible to link crimes committed by the same offender, criminals must show consistent but distinctive behavior. If offenders were consistent in the way they commit crimes but committed crimes in the same way, then it would be impossible to differentiate the crimes of one offender from those of another. Thus, for case linkage to work, criminals must behave in a stable but distinctive manner. Whether these two assumptions are valid has been the focus of research attention by forensic psychologists in Europe, the United States, and Canada. This research is reviewed in the next section.

EVALUATING CASE LINKAGE

Much of the research interest in whether offenders are consistent in their offending behavior has focused on the more serious types of crime, such as sexual assault *(1,19–21)* and murder *(22)*. However, studies have also been conducted for arson *(23)*, commercial and residential burglaries *(5,15,24)*, and commercial robbery *(25)*. Although these studies have used different statistical methods, they all have reported a degree of consistency in offenders' behaviors.

Analysts typically consider similarity in individual behaviors across crimes. However, some research has considered whether it is possible to link crimes at the thematic level. For example, in Salfati and Bateman's *(22)* study, the themes instrumental and expressive are used to describe types of homicide. Although a degree of consistency was demonstrated in themes, in the real world, such a dichotomy is unlikely to be sufficiently discriminating for either criminal intelligence or prosecution purposes.

Some of these studies of offender consistency have gone further and assessed the two assumptions of case linkage simultaneously. They have investigated whether crimes committed by the same offender can be differentiated from crimes by different offenders *(5,15,25)*. Other studies have identified for each crime in their sample the 10 most similar crimes. They have then assessed whether any of the crimes in this selection were in fact committed by the same offender *(1,21,23)*. All such studies have confirmed that it is possible to link crimes and have therefore supported the two assumptions of behavioral

consistency and inter-perpetrator behavioral variation. However, the results also indicate that this process is not perfect and that linkage accuracy appears to vary with crime type. The variation in methods used by researchers can make it difficult to draw comparisons between studies; however, Santtila et al. *(21,23)* used the same methodology making a comparison between arson and sexual offenses possible. Santtila et al. *(23)* found a "linked" arson to be in the 10 most similar offenses in approximately only 50% of arsons. Santtila et al. *(21)* found greater linkage accuracy with sexual crimes for which approximately 60% of the time a crime from the same series was found within the 10 most similar offenses.

Comparisons can also be drawn between the studies of Bennell and Canter *(5)*, Bennell and Jones *(15)*, and Woodhams and Toye *(25)*, which have all used similar methodologies. Measures of predictive accuracy, called areas under the curve (AUCs), were calculated in all three studies using receiver operating characteristic (ROC) analysis. The AUC indicates how well linked and unlinked pairs of crimes were identified. An AUC of 0.50 indicates chance level and an AUC of 1.0 indicates perfect discrimination *(26)*; thus, a larger AUC represents higher predictive accuracy. In Bennell and Canter's *(5)* and Bennell and Jones' *(15)* studies of burglary, the AUCs ranged from 0.63 to 0.81 and 0.52 to 0.94, respectively. In their study of commercial robbery, Woodhams and Toye *(25)* report AUCs ranging from 0.70 to 0.95.

Variations in performance *between* studies could be due to methodological differences or could reflect how amenable certain crime types are to case linkage. Consistency might actually be less for some crimes than others, although this has not yet been investigated. The ranges for accuracy reported *within* the studies of Bennell and colleagues *(5,15)* and Woodhams and Toye *(25)* reflect the use of different behaviors as predictors of linkage. These studies provide preliminary evidence that offenders show greater consistency in some behaviors used in committing a burglary or robbery than in other behaviors. Greater consistency has been observed in behaviors that are more inherent to the offender and are less influenced by situational factors. For example, the property stolen in a robbery or burglary can be highly dependent on the situation, whereas the offender has greater control over which addresses he or she chooses to target and how he or she will seek to control any witnesses.

If offenders show greater consistency and distinctiveness in some behaviors compared with others, such findings have implications for the collation and entry of information onto crime databases. It would be more time efficient to focus on the collation and entry of behaviors that are more reliable indicators of linkage. These findings also suggest that crime analysts should focus their attention on such behaviors when considering similarities between

offenses. The research is not yet at a stage where clear recommendations can be made for practice; however, it does suggest this will be possible in the future.

Most of the studies of case linkage have focused on testing the underlying assumptions of the process and assessing whether it is possible to link crimes on the basis of behavioral similarity. Only one study *(16)* thus far appears to have considered how case linkage is conducted in practice. The methods of linking car crimes used by (i) experienced car-crime investigators, (ii) investigators of other types of crime, (iii) inexperienced investigators, and (iv) laypersons were compared using the same 10 solved series of car crimes. Participants' accuracy was assessed, but they were also asked to articulate their method for linking during the process itself and afterwards. As would be expected, experience increased linking accuracy. The accurate linking of car crimes was more often associated with variables such as the type of vehicle chosen and the time and place the crime occurred, whereas the property stolen from the car was a poor predictor of linkage. It appears that the behaviors associated with accurate linking are those that are more under the offender's control, whereas poor predictors, such as the property stolen, are more situation-dependent. These findings mirror those reported in statistical analyses of case linkage and again suggest that more accurate and efficient linking could be achieved if certain predictors over others are focused on. The identification of accurate predictors of linkage is an important research goal for the future.

OBSTACLES TO LINKING CRIMES

Data Limitations

One obstacle to the accurate linking of crimes is the type of data crime analysts must presently work with. As explained in the section entitled "The Process of Case Linkage", it is the victim's account of the crime that is most often used in determining how the offense was committed. It is important to remember that this account is a secondary record of the offender's actions. It is rare to possess a primary record of an offense, such as a closed circuit television recording. However, even where such primary records exist, they do not constitute a complete record of an event: for example, the offender's verbal behavior may be missing. It is therefore likely that crime analysts will always have to rely mainly on the secondary account of the victim.

The accuracy and completeness of a victim's account are likely to be imperfect for a number of reasons. The victim may be traumatized by the event or they may have a poor memory of the event or part of the event (e.g., in the case of drug-assisted sexual assaults). When the victim has a good memory of the event and is able to accurately articulate what occurred, errors or omissions

can still occur at the interview or statement-writing stage. The statement may be taken or the victim interview may occur some considerable time after the offense occurred *(12)*. The collaborative nature of statement writing and the selective nature of investigators' questioning can result in information currently perceived by them as irrelevant for prosecution being ignored and/or omitted *(27)*. Distortion of what occurred is also possible, in that certain features may be suppressed with others being exaggerated *(28)*.

Although they are always likely to contain some omissions and errors, victim interviews are arguably a more accurate record of the victim's account than victim statements because they are a real-time record of the event in the victim's own words. In England and Wales, (tape-recorded) victim interviews are beginning to replace victim statements with the implementation of the Youth Justice and Criminal Evidence Act 1999. This change means that the potential for the introduction of error into the victim's account will be less.

One way for researchers (and crime analysts using automated linkage systems) to deal with potential errors in victims' accounts is through choosing an appropriate measure of similarity for linking. Jaccard's coefficient is a measure of similarity that does not include joint non-occurrences in its calculation. In other words, if a particular behavior did not occur in two crimes, this would not increase their similarity. This point is advantageous if we consider that a behavior may have occurred but that, for the reasons outlined above, its occurrence has not been recorded in the victim's account. This advantage has been noted by Bennell and Canter *(5)* although it has also been recognized that Jaccard's coefficient has some disadvantages *(15)*.

Because police records are unlikely to be complete records of the event for the reasons outlined above, Alison et al. *(12)* have warned against using individual behaviors for linkage. Instead, they recommend that crime analysts and profilers use geographical proximity to link crimes because this is more likely to be accurately recorded *(12,28)*. This recommendation appears to be partly based on the findings of Bennell and Canter *(5)* and Bennell and Jones *(15)* that, for residential and commercial burglaries, inter-crime distance was the most accurate single-feature predictor of linkage. However, as outlined in the section entitled "Evaluating Case Linkage", some studies have demonstrated the ability to link crimes using other behaviors, such as those behaviors used to control the victim *(25)*. It is perhaps too early in the research process to make such recommendations.

Researchers of case linkage typically begin their data analysis by developing a behavioral checklist from a content analysis of the offenses in their sample. This checklist would capture all of the behaviors in the sample. Each offense is compared against the checklist and the absence or presence of each

behavior has typically been recorded. Poor-quality data can cause difficulties in this procedure. If a checklist contains the behavior "vaginal penetration," a difficulty arises should the victim's account solely state that "penetration occurred." In such a scenario, the researcher is unsure as to the nature of the penetration, and this information is lost from the analysis. Where police forces are moving toward computerized databases of crimes, this issue can also be problematic, and potential links between crimes can be missed. The first author is currently working with colleagues to devise a method of categorizing offending behaviors that could overcome this very real difficulty for researchers and practitioners alike.

Geographical Obstacles

A further obstacle to the linking of crimes relates to the geography of an individual's offending. Crime analysts often work for a specific police force that only covers its own geographical area. However, criminals do not keep within police borders when offending, they will cross borders and offend in other police jurisdictions. A force analyst searching for similar crimes within their own force's databases can therefore fail to identify linked crimes that occur in neighboring jurisdictions. For this reason, units conducting analysis at a national level have been established, such as the Serious Crime Analysis Section in England. The sharing of intelligence and good communication between different force analysis units can also help overcome this obstacle.

Obstacles in the Courtroom

Although case linkage can be used to guide police investigations, it has experienced some obstacles in its acceptance in the courts *(3)*. Although expert evidence on the similarity between crimes has been admitted into legal proceedings in the United States *(3)*, some limits have been put on its admittance. For example, in the case of *State of New Jersey v. Fortin*, Robert Hazelwood was not allowed to present his expert opinion as to whether the two crimes were committed by the same offender although he was allowed to testify as to the similarity between the two crimes *(3,29)*. The grounds for this decision were (i) that Hazelwood's linkage analysis did not have sufficient scientific reliability, (ii) that few people other than Hazelwood's close associates practiced linkage analysis, and (iii) that it had not received peer scrutiny.

Criteria for the admissibility of expert evidence are not as clear in the United Kingdom and other jurisdictions as they are in the United States, where expert evidence about a novel technique must meet the Daubert criteria *(30)*. These criteria and associated guidelines produced by the Supreme Court of the United States have been outlined *(31)*.

Vrij *(31)* explains that the first question to be considered when evaluating whether a novel technique will meet the Daubert criteria is whether the evidence has a scientific hypothesis that is testable. The hypotheses underlying case linkage are that criminals are both consistent and distinctive in their behavior. Scientific studies can be conducted using solved crimes to determine whether the offenders known to be responsible for the offenses behaved in a consistent but distinctive manner. It is therefore suggested that the answer to this first question is affirmative.

The second question is whether this proposition of consistency and distinction has been tested. The answer to this question is suggested to be partially affirmative. The hypotheses that offenders are consistent and distinctive have been tested with some crimes. Three studies have suggested that offenders are consistent and distinctive enough for linked and unlinked crimes to be accurately differentiated *(5,15,25)*. Furthermore, five studies have demonstrated that crimes can be associated with other crimes in their series, which would require both offender consistency and distinctiveness *(1,19,21,23,24)*. Such research has ecological validity; therefore its findings should be relevant to practice. However, it is important to recognize that the samples used in this research consist of solved cases, whereas case linkage, in practice, is used with unsolved cases. As noted by Bennell and Canter *(5)*, such cases might actually have been solved because of their greater behavioral similarity. This issue is problematic and it would be difficult to overcome this limitation; however, one solution would be to conduct research with samples of unsolved crimes that had been linked through DNA testing. To strengthen further the affirmation to this question, cross-validation studies would be required as well as studies assessing other types of crime.

The third question is "Is there a known error rate?" It is suggested that the answer to this question would also be partially affirmative. Studies such as those of Bennell and colleagues *(5,15)* and Woodhams and Toye *(25)* have used logistic regression and ROC analyses, which enable overall estimates of error to be calculated on samples of solved cases. These studies have indicated that predictive accuracy rates can be as high as 90% or represented by an AUC in ROC analysis of 0.95 with an area of just 0.05 for error. Although some crime analysts do rely on statistical analyses to aid them in making decisions as to whether crimes are linked, this is not always the case. Crimes would also not be linked purely on the outcome of a statistical analysis. A crime analyst would be involved in making this final decision, potentially in light of additional information. How the subsequent input of an analyst would affect accuracy and how accurate analysts are at linking crimes without computational aid require testing.

There are no known field studies of the accuracy of case linkage. Thus far, the closest to this would be Santtila et al.'s *(16)* study of the linking of car crimes; therefore this is clearly an area for future research. However, establishing real-world error rates will always be problematic. To determine whether the decision to link a pair of crimes was correct or incorrect, the perpetrator has to have been convicted for both crimes or DNA evidence of linkage would be required. First, it should be noted that conviction cannot be considered a perfect indicator of identity as miscarriages of justice do occur. Second, were conviction considered a reliable indicator of identity, the conviction rates for some crime types for which case linkage is most commonly used are notoriously low, namely sexual crimes *(32,33)*. Third, with regard to DNA evidence, as noted above, often no such evidence exists *(2)*. It is therefore highly probable that in the real world, analysts will make predictions about linkage, yet whether these decisions are correct or incorrect will be impossible to establish.

The fourth question of "Has the hypothesis and/or technique been subjected to peer review and publication?" would also have an affirmative answer. However, it is suggested that the answer to the fifth question, "Is the theory on which the hypothesis and/or technique is based generally accepted in the appropriate scientific community?," would be "not yet." It is suggested that case linkage has not yet received sufficient academic interest; therefore the answer to this question lies in the future. In summary, case linkage evidence does not yet appear to meet all criteria set out in the Daubert ruling.

In England and Wales, expert scientific evidence is not required to meet the full Daubert criteria. Instead, in recent cases, it has been required that evidence has general acceptance in the scientific community. In other cases, evidence based on novel techniques has been admitted but accompanied by a warning from the judge as to how such evidence should be considered by the jury *(30)*.

Ormerod and Sturman *(30)* have specifically considered the likelihood that case linkage evidence (or as they term it comparative crime scene analysis evidence) would be accepted as expert evidence. They conclude that it is quite possible that evidence of behavioral similarity and distinctiveness would be accepted by the courts. They explain that the purpose of such evidence is to prove similarity rather than proving a suspect's guilt. Therefore, if the method used was considered reliable, if the evidence was unlikely to distract the court (i.e., the jury) unnecessarily, and if it was not rejected for being prejudicial, such evidence could be considered legally relevant. However, they caution that even if such evidence were considered relevant and admissible, it may be rejected for other reasons. These reasons could include if the witness were not considered suitably qualified to be granted expert status, if the evidence

were considered within the experience and knowledge of a layperson, and if the evidence was considered unreliable.

The second of these points, that is, whether the experience and knowledge of a crime analyst about similarities and differences in criminal behavior is outside that of the layperson, warrants discussion. It could be argued that very clear similarities in criminal behavior across crimes would be obvious to the layperson and hence the evidence of a crime analyst would be unnecessary. However, it is important to consider whether the layperson will know which behaviors are actually rare or common in a population of crimes. Crime analysts can have read thousands of crime reports and hundreds of victim statements. Therefore, they will arguably be better informed as to which behaviors are common or rare than the layperson whose knowledge of a type of offense may be based merely on media portrayal or on their limited personal experience. In addition, the crime analyst may have used more objective measures of base rates in determining commonality or rarity through consulting crime databases, which hold information on thousands of crimes, to which the layperson would not have access.

In the sister field of criminal profiling, factions have arisen over the most appropriate way to conduct profiling. This has been termed the clinical versus the statistical debate. Ormerod and Sturman *(30)* explain that because profiling varies with regard to what it actually is and how it is conducted, it may not be considered admissible in legal proceedings. For case linkage evidence to be accepted by courts, it is crucially important that it receives scientific research attention and has a sound theoretical underpinning. Its acceptance as expert evidence would also be aided by standardization in the way in which it is conducted. As outlined above, although small differences seem to exist in the process, from what has been published, the basic underlying steps appear the same. However, there does appear to be some variation in its practice, as, for example, in the use of statistical methods and computerization in linking.

Thus, in summary, there are obstacles to case linkage in relation to (i) the data that the practitioners and researchers must rely on, (ii) overcoming police boundaries, and (iii) the acceptance of case linkage evidence in courts. There are a number of ways in which these issues can be addressed, as outlined above, and these will no doubt be the focus of future empirical research.

THE FUTURE OF CASE LINKAGE

Theoretically and empirically, case linkage has started with a good grounding. Research seems to be supporting its underlying assumptions. The future for research in this area will include studies investigating the validity

of these assumptions with previously untested crime types. In addition, cross-validation studies are required before existing findings regarding criminal consistency and distinctiveness can be fully accepted.

Empirical research is suggesting ways in which the process of linking crimes could be improved. For example, it appears that some offender behaviors are more reliable indicators of linkage than others. However, further research on this is required before any firm recommendations can be made to practitioners. As research continues into case linkage, it is likely that reliable statistical methods for linking crimes will be developed. These methods have the potential to reduce the cognitive load placed on the analyst and will be more reliable and scientific. They may also encourage standardization in the way case linkage is conducted. They will, however, require the development and maintenance of large-scale databases of crimes. The high standards demonstrated at some crime analysis units such as the Serious Crime Analysis Section in England could be considered best practice for the future establishment of such databases. The development of such databases also holds the potential for calculating base rates of behavior, providing the analyst with a more reliable method of weighting behavioral similarities between offenses.

A number of these potential future developments also have implications for the acceptance of case linkage evidence in legal proceedings, because they will encourage standardization and reliability. However, to remove the analyst from the process of case linkage in the pursuit of standardization and reliability would be an undesirable development. The findings of the linking process will always need to be considered in light of other information uncovered during the investigative process *(25)*, thus it is likely that the professional expertise of the crime analyst will always be required.

The published empirical research has clear implications for the conducting of case linkage. However, the results of such research must be balanced with the practical application of the findings in the real world so that evaluative research will be needed to ensure that recommendations are workable in practice. In the absence of a large pool of research on case linkage, practitioners have been cautious in its application and have been mindful in allowing researchers access to their data for their practice to be independently researched and scrutinized. The cooperative and reciprocal relationship that has thus far existed between academics and practitioners will no doubt continue through joint enterprises. The interested researcher will certainly not struggle to find a topic to pursue: they will be contributing to a novel field with important practical implications for both the policing and prosecution of crime.

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Chapter 7

Predicting Offender Profiles From Offense and Victim Characteristics

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Summary

The main aim of the research discussed in this chapter is to compare the characteristics of offenses and victims with those of offenders. Information was extracted from police files concerning 345 burglars and 310 violent offenders in Nottinghamshire, England. The most important observable features of offenders were sex, ethnicity, age, height, build, hair color, hair length, and facial hair. Combinations of these features were used to construct offender profiles. Offense features and victim features were compared with offender features. There were many significant regularities. Offense profiles based on location, site, time, and day were compared with offender profiles based on address, age, sex, and ethnicity. Address–age–sex victim profiles were compared with address–age–sex–ethnicity offender profiles. In addition, the extent to which offenders tended to repeat similar types of offenses and victims was studied. A computerized offender profiling system is recommended, based on criminological theories and empirical data about statistical regularities linking the characteristics of offenders, offenses, and victims.

INTRODUCTION

Offender profiling is a psychological technique designed to assist in the identification and detection of offenders [1,2]. Its aim is to predict the characteristics of the offender in a particular case from the characteristics of the offense, the characteristics of the victim, and from reports by victims and witnesses

about features of the offender. The objective is to narrow down the range of people who could possibly be the offender by specifying a combination of characteristics that an offender is likely to possess.

Much previous work on offender profiling has been essentially clinical in nature and has dealt with particular cases, notably sequences of unsolved serious crimes such as rapes or murders thought to have been committed by the same person *(3)*. Typically, an independent psychologist has been engaged in examining all the evidence and (based on clinical experience and expertise) making predictions about the likely personality and behavioral characteristics of the offender. The aim is to predict a "psychological signature," including the offender's emotions, moods, motives, desires, and obsessions *(4)*. In contrast, we have adopted a more statistical approach and have focused on the more common offenses of burglary and violence. The advantage of focusing on common offenses is that there are many cases in a local area during a short time period, and many repeat or serial offenders.

Offender profiling could be viewed as a special topic within the general field of research on criminological prediction *(5)*. On the basis of classic works by Meehl *(6)* and Sawyer *(7)*, it might be concluded that statistical prediction is more efficient than clinical prediction. Much criminological prediction research has aimed to predict delinquency, dangerousness, reoffending, or the rate of offending, in order to assist in parole or sentencing decisions or in the evaluation of correctional treatments. The key issues that have been addressed include (i) how to select predictor variables, (ii) how to select criterion variables, (iii) how to combine predictors to predict the criterion, and (iv) how to measure predictive efficiency. In our research, our criterion variables are the characteristics of the offender, whereas our predictor variables are the characteristics of the offense, the characteristics of the victim and reports by victims and witnesses about features of the offender. An extra issue arising in our research is how to develop a criterion to be predicted (an offender profile) by combining criterion variables (offender characteristics).

Offender profiling is particularly useful in detecting offenders whose records are already stored in a criminal record system. It will also be valuable to the extent that offenders are consistent and distinctive in their commission of particular types of offenses and in their choice of particular types of victims. To the extent that offenders are versatile or random in their offending, the value of offender profiling will be limited. Alison *(8)* criticized the "traditional trait-based" approach to profiling on the grounds that behavior was not consistent but varied in different situations.

Our aim is to investigate how far data routinely collected by police forces might be used as the basis for a computerized system of offender profiling. In

"The Present Research," we describe the aims and design of our research on burglary and violence offenders in Nottinghamshire, England. In "Characteristics of Burglary and Violence Offenders," we summarize the characteristics of the offenders, whereas in "Developing an Offender Profile," we discuss how offender profiles might be developed, and in "Location of the Offense Versus Address of the Offender," we present an empirical example. In "Characteristics of the Offense Versus Characteristics of the Offender," we review the relationships between the characteristics of the offense and those of the offender, whereas in "Offense Versus Offender Profiles," we compare offense and offender profiles. In "Characteristics of the Victim Versus Characteristics of the Offender," we review the relationships between the characteristics of the victim and those of the offender. In "To What Extent Do Offenders Repeat Similar Types of Offenses?" we investigate the extent to which offenders repeat similar types of offenses, whereas in "To What Extent Do Offenders Repeat Similar Types of Victims?" we study the extent to which offenders repeat similar types of victims. Other analyses relevant to offender profiling are summarized in "Other Analyses Relevant to Offender Profiling." In the "Conclusions", we consider how existing data collection methods might be improved, both by increasing the accuracy of existing data and by collecting additional data, and we recommend further research that is needed on topics connected with offender profiling.

THE PRESENT RESEARCH

Our research was primarily designed to address the following questions arising in offender profiling:

1. How reliable are police-recorded descriptions of offenders?
2. How are offender characteristics inter-related?
3. How are offenders apprehended?
4. How accurate are victim descriptions in predicting the characteristics of offenders?
5. How accurate are witness descriptions in predicting the characteristics of offenders?
6. How can offender profiles be developed?
7. To what extent are the characteristics of the offense related to those of the offender?
8. To what extent are the characteristics of the victim related to those of the offender?
9. To what extent do offenders repeat similar types of offenses?
10. To what extent do offenders repeat similar types of victims?

One paper was published *(9)* addressing the first five of these questions. A second paper was written in 1996 addressing the second five questions and was supposed to be published in an edited collection, but this never came to fruition. The second paper formed the basis for the current chapter, which

presents analyses carried out a decade ago but never previously published in detail. A third paper was published *(10)* summarizing all the results, but not in detail. We believe that, although this research was conducted in the 1990s, the results are still of sufficient interest to be worth publishing now. Other statistical attempts to compare characteristics of offenders and offenses have generally been based on serial rape and murder offenses *(11–15)*. Comparisons are made throughout between burglary and violence offenders and offenses.

Our research is empirical. We primarily use information that is available in existing police records, and hence our conclusions are limited by the adequacy of these records. Ideally, our research should be based on criminological theories about which types of people commit which types of offenses and choose which types of victims, and the theories should guide us in deciding which data to collect about offenders, offenses, and victims. Typologies of offenses and offenders have been reviewed by Miethe *(16)*. Unfortunately, adequate theories for our purposes, and adequate typologies of offenders, offenses, and victims, do not exist. Many theories have been proposed to explain why persons who are male, younger, or non-White have a relatively high prevalence of recorded offending in Western societies *(17)*. However, such theories do not make specific predictions about types of offenses and types of victims. Research on decision-making by offenders is more relevant *(18–20)*. Also, although there is a great deal of research and theory on the predictors and correlates of prevalence (differences between offenders and non-offenders), there is much less work on the predictors and correlates of recidivism, which is more relevant to our concerns.

In order to compare information recorded at the time of the offense with later-discovered characteristics of the offender, our research was based on offenses leading to convictions. Whether convicted offenders are similar to undetected offenders is not entirely clear although self-report studies *(21)* suggest that they are comparable in many respects. Hence, it should be possible to generalize our conclusions to undetected offenders.

Our research is based on case files entering the Nottinghamshire Criminal Record Office (CRO) after conviction. These case files are extensive and voluminous. Most of the documents are destroyed after the essential information is computerized for Nottinghamshire CRO purposes, but we were able to extract data for our purposes before the CRO staff extracted data. The information about previous offenses in computerized records was not sufficiently detailed for our purposes.

Nottinghamshire, in the Midlands of England, consists of a predominantly rural county surrounding the large City of Nottingham. The population of Nottinghamshire in 1991 was about 1,000,000. Nottinghamshire was chosen as the site for the project because previous research had been conducted there by Farrington and

Dowds *(22).* In 1991, Nottinghamshire had the highest per capita rates of violence, sex, and theft offenses in England and Wales *(23).* However, as Farrington and Dowds showed, part of the reason for this high-crime rate was the assiduous recording of crimes by the Nottinghamshire police.

Information was extracted and computerized for 655 different offenders whose files reached the Nottinghamshire CRO during the 9-month period, March–November 1991. Our original aim was to extract data about all offenses of burglary or serious violence committed in Nottinghamshire and leading to a conviction, where the identity of the offender at the time of the offense was unknown by victims, witnesses, or police. Obviously, problems of detecting offenders do not arise in cases where someone knows the offender (as is true in the majority of cases of serious violence, which are between acquaintances, relatives, friends, or intimate cohabitees). All the included offenses involved offenders who were strangers to the victim. For statistical purposes, we needed several hundred of each type of case (burglary or violence).

Our original aim of including all cases of burglary or serious violence could not be achieved. This was because the flow of eligible burglary cases was about twice as great as the flow of eligible violence cases. Consequently, we randomly excluded up to half of the burglary cases to keep the numbers manageable. Our sample includes a small number of offenses committed just outside the county, because they were dealt with by the Nottinghamshire police and hence eventually reached the Nottinghamshire CRO.

The offenders in our sample comprise 345 burglars and 310 violent offenders (166 convicted of causing actual bodily harm, 35 convicted of wounding/causing grievous bodily harm, 39 convicted of affray, violent disorder, or common assault, and 70 convicted of robbery). Seventeen offenders were convicted of both burglary and violence during this time period; they were included in the number of violent offenders. An additional 316 burglars were excluded (271 at random and 45 because a victim or witness knew the offender). Similarly, 889 violent offenders were excluded (815 because a victim or witness knew the offender and 74 where the victim was a police officer and the violence occurred during an arrest). Hence, problems of detection occurred for only 310 out of 1199 violent offenders (25.9%) but for 633 out of 678 burglars (93.4%).

The data consist of w offenders, x offenses, y victims, and z witnesses for each incident. This makes the analysis very complicated. Generally, the problems have been overcome by basing analyses on n pairs. For example, in comparing the characteristics of the offense with those of the offender, the analysis was based on n offense–offender pairs. However, it must be realized that the same offense can appear in more than one pair, just as the same offender can appear in more than one pair.

CHARACTERISTICS OF BURGLARY AND VIOLENCE OFFENDERS

The police information on the characteristics of the 655 offenders was extracted from the C10 (description and antecedent history) form, which was completed at the time of arrest. This C10 form contained information about the offender's name, date of birth, place of birth, sex, ethnic appearance, nationality, height, weight, build, accent, eye color, voice, hair color, hair length, facial hair, marks/scars/abnormalities, dress, address, occupation, education, marital status, and children. The Nottinghamshire C10 form was similar to the national NIB74 form used at the time, which was accompanied by coding instructions and categories. For example, the coding instructions for ethnic appearance specified White European, Dark European, Afro-Caribbean, Asian, Oriental, Arab or Mixed race.

Farrington and Lambert *(24)* summarized the characteristics of the burglary and violence offenders and offenses. For example, sex was recorded in every case. The vast majority of offenders (95.4% for burglary and 90.6% for violence) were male. However, there were significantly more females among the violence offenders. Ethnicity was recorded in almost all cases (97.4%). The vast majority of offenders were said to be White (567), with 36 Afro-Caribbean, 27 Mixed race, and 8 Asian (of Indian, Pakistani, or Bangladeshi origin). There were no Oriental, Arab, or other ethnic origins. Ethnicity was not significantly related to the type of offense although more of the violence offenders were Afro-Caribbean or Mixed race (12.3% as opposed to 7.7% of burglars). The age of the offender was recorded in every case. Although this ranged from 10 to 59, the majority of offenders (472 out of 655, or 72.1%) were aged 14–24. Violence offenders were significantly older.

Height was recorded in every case except one, and it was not significantly related to the type of offense. Most offenders were between 5 feet 6 inches and 5 feet 11 inches tall or between 168 and 180 cm. Weight was recorded in 97.1% of cases, and violence offenders were significantly heavier. Most offenders (58.5%) were between 9 stone 1 pound (127 pounds) and 12 stones (168 pounds) or between 58 and 76 kg. Similarly, build was recorded (in three categories) in 98.8% of cases, and violence offenders had a significantly larger build. Hair color was recorded in almost all cases (99.1%), with about half of the offenders (47.0%) having dark brown hair. Hair length was recorded in most cases (91.3%), with three-quarters of offenders (75.1%) having hair above the collar. Hair style was only recorded in about half of the cases (50.7%), and most of these offenders (66.0%) had curly/permed or straight hair. The presence or absence of facial hair was recorded in nearly all cases (98.3%), and 30.0% of offenders had a beard, mustache, or marked stubble.

Eye color was recorded in almost all cases (98.6%), with most offenders having blue/gray (44.3%) or brown (45.0%) eyes. The offender's accent was recorded in 96.5% of cases, with the vast majority of these (86.4%) having a local (Nottinghamshire) accent. Only 33 offenders (5.2%) had other English accents (e.g., Geordie), 23 (3.6%) had other British accents (Welsh, Scottish, or Irish), and 30 (4.7%) had non-British accents. Violence offenders were significantly more likely to have non-local accents (20.1% as opposed to 7.8%).

The offender's voice was classified in 82.1% of cases (e.g., medium, deep, and soft), and whether or not the offender was tattooed was recorded in almost all cases (99.2%). Over one-third of offenders (36.5%) were tattooed. Scars or birthmarks were noted in 186 cases (28.4%); presumably, they were absent in all other cases. Facial features (bulging eyes, teeth missing, gold teeth, marked acne or pitted complexion, and wearing glasses) were noted in only 13 cases, and again presumably, they were absent in other cases. The offender's dress at the time of arrest was recorded in almost all cases (98.6%), but in the vast majority of these (90.9%), the dress was only classified as sloppy/casual.

The offender's place of birth was recorded in almost all cases (97.6%), with three-quarters of these offenders (76.5%) born in Nottingham or Nottinghamshire. Violence offenders were significantly more likely to have been born outside Nottinghamshire (29.8% as opposed to 17.9%). Nationality was almost always recorded (98.8%), but only five offenders were not British. The offender's address was almost always recorded (97.9%). Most offenders lived in Central Nottingham (postcodes NG1–NG3), in Suburban Nottingham (postcodes NG4–NG9), or in the County (postcodes NG10–NG17). Fewer lived in the Mansfield area (postcodes NG18–NG21), the Newark area (postcodes NG22–NG25), the Worksop/Retford area (DN postcodes), or outside Nottinghamshire (9.8% of offenders).

Living circumstances were recorded in 91.9% of cases, and over half of the offenders (55.0%) lived with their parents. Marital status was recorded in almost all cases (99.1%), and about three-quarters of offenders (76.6%) were single. More of the burglary offenders were single. About a quarter of offenders (23.4%) were recorded as having children, and violence offenders were significantly more likely to have children. The offender's occupation was recorded in almost all cases (98.9%), and about half of these (50.6%) were unemployed at the time of arrest. There was a significant tendency for burglary offenders to be more often unemployed (60.6% as opposed to 39.6%) or still in education (24.1% as opposed to 14.9%). The offender's education was recorded in 87.8% of cases, but only 15 of these offenders (2.6%) had been to grammar or private schools or attended further or higher education.

Farrington and Lambert *(9)* investigated the reliability of police-recorded data on the characteristics of offenders. They concluded that the most important observable features were sex, ethnicity, age, height, build, hair color, hair length, facial hair, eye color, accent, tattoos, and facial abnormalities. A factor analysis showed that sex, ethnicity, and age were the most important dimensions underlying these observable features. The most important non-observable feature is the offender's address.

DEVELOPING AN OFFENDER PROFILE

An offender profile is essentially a combination of values of variables for an offender. For example, the profile of offender number 1 might consist of the values of his/her sex, ethnicity, age, height, and so on. An offender profiling system stores the profiles of offenders convicted in the past. Key issues are how to choose how many and what variables to include in this profile, and how variables should be coded.

As the number of variables increases, the number of unique profiles increases disproportionally, and the number of offenders in the system with each profile decreases. For example, offenders fall into only two sex categories, male and female, with 610 males and 45 females in this project. Hence, 610 offenders (93.1%) share the same male profile. With the two variables sex and ethnicity (in four categories), there are eight possible profiles, the largest (White males) comprising 536 persons and the smallest (Afro-Caribbean females and Mixed-race females) each containing only six persons. Already, one profile (Asian females) contained no offenders.

With three variables (sex, ethnicity, and age in seven categories), there are 56 possible profiles, but only 35 contained offenders in this project. The largest category comprised 177 White males aged 17–20, whereas eight profiles contained only 1 offender and of course 21 contained none. Adding a fourth variable (height in five categories), the number of different possible profiles increased to 280 although only 84 contained offenders. The largest number of offenders (72 out of 637 known on all four variables, or 11.3% of offenders) were White males aged 17–20 with heights between 5 feet 9 inches and 5 feet 11 inches (175–180 cm). Only 15 profiles contained 13 or more offenders (2% of offenders), and only 20 profiles contained 7 or more offenders (1% of offenders). Conversely, 64 profiles contained less than 1% of offenders and hence defined a relatively small number of offenders. Profiles containing very few offenders in a system are the most useful for identifying likely offenders.

Eventually, of course, as more variables are added to the profile, each profile would contain only one offender, so that each offender would be defined by a

unique combination of values of variables. However, it would be undesirable to go to this extreme in an offender profiling system. As the number of variables in the profile increases, so also does the probability of a victim or witness getting at least one of them wrong, so that the offender would not be identified correctly.

Basically, there is a relationship between the proportion of persons in the system identified as possible offenders (which we will term the system proportion or SP) and the probability of an identified person being a true offender (which we will term the true positive probability or TPP). As the number of variables in a profile increases, the average SP (ASP) for each case will decrease, but so will TPP.

LOCATION OF THE OFFENSE VERSUS ADDRESS
OF THE OFFENDER

The link between ASP and TPP can be illustrated using the relationship between the location of the offense and the address of the offender. This is summarized in Table 1, which divides both locations and addresses into seven categories according to their postcodes. There has been a great deal of prior research on geographic profiling and distances traveled by offenders *(25–28)*. There were 621 offense–offender pairs for burglary and 360 offense–offender pairs for violence where both locations and addresses were known. In almost all cases, the highest number in a row was in the diagonal cell, showing that locations of offenses and addresses of offenders tended to be similar.

Generally, offender profiling aims to narrow down the range of potential offenders and to include the real offender within the identified number of possible offenders. In operational use, offender profiling could be based on all recorded offenders living in an area (e.g., Nottinghamshire or the City of Nottingham). For illustrative purposes, suppose that the system is based only on the location of the offense and the address of the victim and that it predicts that the offender lives in the same area as where the offense was committed. Offenses committed outside Nottinghamshire and offenders living outside Nottinghamshire are excluded from the calculations of SP and TPP.

Beginning with burglary, for each of the 133 offenses committed in Central Nottingham, it would be predicted that the offender lived in Central Nottingham, thereby narrowing down the range of possible offenders to 118 out of 575 Nottinghamshire offenders stored in the system. Hence, SP for each of these offenses is .205 (118/575). This prediction is correct for 87 out of 133 offenses, so TPP is .654. For Suburban Nottingham offenses, SP = .461 and TPP = .840. Over all six Nottinghamshire locations, the weighted ASP = .276 and TPP = .770. Hence, on

Table 1
Location of Offense Versus Address of Offender

				Address of offender				
Location of offense	Nottingham Center	Nottingham Suburban	Notts County	Mansfield area	Newark area	Worksop/ Retford area	Other	Total
Burglary								
Nottingham Center	87	37	8	0	0	0	1	133
Nottingham Suburban	27	204	5	1	0	0	6	243
Notts County	4	20	51	0	2	1	2	80
Mansfield area	0	3	4	66	2	0	1	76
Newark area	0	0	0	5	20	0	2	27
Worksop/Retford area	0	0	0	0	0	20	3	23
Other	0	1	0	0	3	4	31	39
Total	118	265	68	72	27	25	46	621
Violence								
Nottingham center	51	58	19	0	2	0	11	141
Nottingham suburban	5	74	4	1	0	0	4	88
Notts county	2	6	30	2	0	0	2	42
Mansfield area	0	0	8	27	4	0	8	47
Newark area	0	0	1	2	8	0	5	16
Worksop/Retford area	0	0	0	0	0	8	2	10
Other	0	0	0	1	0	0	15	16
Total	58	138	62	33	14	8	47	360

Based on 981 offense–offender pairs with locations and addresses known. Nottingham center, NG1–NG3; Nottingham suburban, NG4–NG9; Notts county, NG10–NG17; Mansfield area, NG18–NG21; Newark area, NG22–NG25; and Worksop/Retford area, DN postcodes.

average, an offender profiling system based only on the location of the offense narrows down the number of possible offenders to 27.6% of those in the system and includes the true offender 77% of the time. For violent offenses, ASP = .230 and TPP = .576, showing that the location of the offense was a less accurate indicator of the address of the offender for violence than for burglary.

It would clearly be inadequate to identify 27.6% of all offenders stored in a system as potential offenders, because it is necessary to narrow down the range of possible offenders much more than this. It would be reasonable to set a maximum value of ASP (say 1%) and a minimum value of TPP (say 10%) in deciding on the optimal number of variables and categories in a profile. The relative values of ASP and TPP will depend on the relative costs of identifying false positives and benefits of identifying true positives. Research is needed on how ASP and TPP vary as different numbers and types of variables are used in constructing the offender profile. The profiling system may be useful even if the "hit rate" is less than 10%, and it may be impractical to identify as many as 1% of offenders stored in the system as potential offenders.

This illustration based only on locations of offenses and addresses of offenders is unrealistic, because many more characteristics of offenders and offenses would be included in an operational offender profiling system.

CHARACTERISTICS OF THE OFFENSE VERSUS CHARACTERISTICS OF THE OFFENDER

The police records indicated that the 655 offenders had committed a total of 1017 offenses. Because of the phenomenon of co-offending, there are not 1017 separate incidents but 1017 offense–offender pairs. Hence, the offense and the offender could be compared in 1017 cases, 650 involving burglary and 367 involving violence. Farrington and Lambert *(24)* summarized the characteristics of burglary and violence offenses. For example, most burglaries were committed in Suburban Nottingham (38.3%) or Central Nottingham (21.7%), whereas most violence offenses were committed in Central Nottingham (39.8%) or Suburban Nottingham (24.3%).

Table 2 compares the characteristics of burglary offenses and offenders, whereas Table 3 compares the characteristics of violence offenses and offenders. The most important eight observable characteristics of offenders are summarized in these tables: sex, ethnicity, age, height, build, hair color, hair length, and facial hair. The *P* values are based on two-way cross-tabulations. The good news is that there are many statistically significant relationships that might form the basis of an offender profiling system.

Table 2
Characteristics of Burglary Offenses Versus Offenders

Offense characteristics (number of categories)	Percent recorded	Offender characteristics							
		Sex (2)	ETH (2)	Age (5)	HT (4)	BU (3)	HC (2)	HL (3)	FH (3)
Location (5)	99.2	–	.0001	.0001	.003	.01	–	.003	–
Site (6)	100.0	.011	–	.018	.046	.02	.014	.0006	.012
Time (4)	88.8	.03	–	.0001	.001	–	.085	.072	.013
Day (5)	98.9	–	.096	.008	–	–	–	–	.055
Season (4)	100.0	–	–	.0001	–	.019	.0001	–	.005
Distance from offender (4)	94.8	–	–	.0001	–	.019	.001	.006	–
Entry (4)	82.3	.093	–	.009	–	–	–	–	–
Method (3)	97.5	–	.046	.0005	–	–	–	–	–
Instrument (5)	63.8	.002	.053	.007	–	–	–	–	.042
Went equipped (2)	48.3	–	–	–	.089	–	–	–	–
Escape (2)	59.8	–	–	.001	–	–	.031	–	–
Alcohol influence (2)	100.0[a]	.082	.081	.0001	–	.0005	–	–	–
Reason (3)	99.2	.019	.038	.0001	.022	.071	.041	–	–

ETH, ethnicity; HT, height; BU, build; HC, hair color; HL, hair length; and FH, facial hair.
Based on 650 offense–offender pairs. The figure in each cell gives the significance level (based on χ^2).
–Not significant.
[a] Assuming that absence of information indicates negative information.

Table 3
Characteristics of Violence Offenses Versus offenders

Offence characteristics (number of categories)	Percent recorded	Offender characteristics							
		Sex (2)	ETH (2)	Age (5)	HT (4)	BU (3)	HC (2)	HL (3)	FH (3)
Location (5)	100.0	.0003	.0001	.015	–	.002	.001	0.096	–
Site (5)	100.0	–	.002	.0002	.055	.029	–	–	–
Time (3)	100.0	.0001	.0001	.0001	.0001	.018	–	–	–
Day (5)	100.0	.0002	.051	.063	.061	–	–	.003	–
Season (4)	100.0	–	.008	.021	–	–	–	–	–
Distance from offender (4)	95.6	.0008	.006	.0001	.0002	–	–	–	–
Disguised (2)	99.7	.076	–	.046	–	–	–	–	–
Intention (2)	98.6	.002	.015	.0001	.04	–	–	–	–
Weapon (3)	97.5	.016	–	.056	–	–	–	.041	.004
Went equipped (2)	26.2	–	–	.005	–	.055	–	–	.082
Escape (2)	68.7	.012	–	.005	–	.094	–	.082	–
Alcohol influence (2)	100.0[a]	.0001	.0001	.0001	.0001	.003	.088	–	–
Reason (5)	98.4	.0002	.0001	.0001	.0006	.002	–	–	–

ETH, ethnicity; HT, height; BU, build; HC, hair color; HL, hair length; and FH, facial hair.
Based on 367 offense-offender pairs. The figure in each cell gives the significance level (based on χ^2).
–Not significant.
[a] Assuming that absence of information indicates negative information.

Great problems arise in trying to relate offense and offender characteristics. For example, in relating the location of the offense to their age of the offender, it is not clear what are the best methods of categorizing each variable, nor how the results are affected by different categorization systems. Further research could investigate this. It would only have been possible to specify comparable magnitudes of relationships if all variables had been dichotomized, but this would have involved a considerable loss of information. Consequently, we decided to summarize relationships (in $m \times n$ contingency tables) in Tables 2 and 3 using P values. Significant P values indicate statistical regularities.

For example, in regard to location, burglary offenses in the City of Nottingham were significantly more likely to be committed by non-White offenders than burglary offenses elsewhere; 14.6% of burglary offenses in the city had non-White offenders compared with 0.8% of burglary offenses elsewhere ($\chi^2 = 37.52$, $df = 4$, $P < .0001$). This result may reflect the geographical distribution of ethnic minorities in Nottinghamshire. Violence offenses in the City of Nottingham were more likely to be committed by non-White offenders than violence offenses elsewhere and also more likely to be committed by female offenders than violence offenses elsewhere. Burglary and violence offenses in the City of Nottingham were also more likely to be committed by relatively small offenders, by those with black or dark brown hair and by those with relatively short hair.

Regarding the site, most burglaries were committed in residential (46.0%) or business (18.6%) premises, shops (17.7%) or pubs and entertainment places (8.3%). Residential burglaries significantly tended to be committed by male offenders, whereas there was some tendency for burglaries of shops and business premises to be committed by female offenders. Most violence offenses were committed in the street or other open spaces (50.7%), in pubs or entertainment places (16.6%), in shops (13.9%), or in transport places (12.3%). Violence in pubs or entertainment places was significantly likely to be committed by older offenders, whereas violence in streets or shops was more likely to be committed by younger offenders. Violence in shops was also more likely to be committed by non-White offenders, whereas violence in transport places was more likely to be committed by White offenders. Burglaries of residential, education, or pub/entertainment premises tended to be committed by relatively small offenders with short hair and no facial hair. Burglaries of business and transport premises tended to be committed by offenders with black or dark brown hair. Violence in transport and pub/entertainment places tended to be committed by relatively large offenders.

Most burglaries were committed between midnight and 3.00 a.m. (25.5%), 9.00 p.m. and midnight (18.9%), 6.00 and 9.00 p.m. (14.0%), noon and 3.00

p.m. (13.3%), or 3.00 and 6.00 a.m. (12.3%). Younger, smaller offenders dispro-portionally committed burglaries between 3.00 p.m. and 9.00 p.m., whereas those with facial hair disproportionally committed burglaries between 3.00 a.m. and 9.00 a.m., and females disproportionally committed burglaries between 9.00 p.m. and 3.00 a.m. Most violence offenses were committed between 9.00 p.m. and midnight (37.1%), midnight and 3.00 a.m. (17.7%), 3.00 and 6.00 p.m. (12.7%), or noon and 3.00 p.m. (10.4%). Violence between 9.00 p.m. and 3.00 a.m. was disproportionally committed by male, White, older, and taller offenders.

The incidence of burglaries was spread fairly evenly over different days of the week, although more occurred on Sunday (20.8%) than on any other day. In Tables 2 and 3, Monday/Tuesday and Wednesday/Thursday have been combined to reduce the number of categories. Younger offenders dispropor-tionally committed burglaries between Sunday and Thursday, whereas those with facial hair disproportionally committed burglaries between Friday and Sunday. Violence offenses were most likely to occur on Saturday (26.2%) or Friday (19.3%). Female, non-White, younger, and smaller offenders disproportionally committed violence on Monday/Tuesday or Saturday, whereas male, White, older, and taller offenders disproportionally committed violence on Friday or Sunday.

Most burglaries in this data set were committed in the winter months of December–February (33.8%) or in the spring months of March–May (25.7%). Because the data set was based on files entering the Nottinghamshire CRO during 9 months only, between March and November, it is not clear that the seasonal variations in the data set reflect true seasonal variations in crime or whether they were influenced by the data collection period. More burglaries were randomly excluded during the second half of the data collection period than during the first half. Most violence offenses were also committed in the spring (35.1%) or winter (27.6%) months. Spring burglaries were disproportionally committed by younger offenders and those with no facial hair, whereas summer burglaries tended to be committed by smaller offenders and those with black or dark brown hair. Violence offenses in the summer were disproportionally committed by non-White and younger offenders.

Most burglary (69.2%) and violence (55.3%) offenders lived within 1 mile (1.6 km) of the scene of the crime. A further 11.5% of burglars and 12.5% of violence offenders lived 2 miles (3.2 km) from the scene of crime, whereas 11.2% of burglars and 17.4% of violence offenders lived between 3 and 5 miles (4.8 and 8.1 km) from the scene of crime. Only 8.1% of burglars and 14.8% of violence offenders lived more than 5 miles (8.1 km) away from the scene of the crime. Hence, the location of the offense was an important clue to the address of the

offender. In the case of burglary, relatively older and larger offenders tended to live far away from the scene of the crime. In the case of violence, female, non-White, younger, and small offenders tended to live close to the scene of the crime.

Burglars entered buildings from the rear (51.4%), front (28.6%), roof (10.5%), or side (9.5%). Younger offenders entered disproportionally through the roof, whereas females tended to enter through the front. The methods used by burglars to gain access were by smashing windows (43.7%), forcing open doors or windows (37.4%), or without force (18.9%). Older offenders tended to smash windows, whereas non-Whites tended to force open doors or windows.

Hardly any burglars (1.4%) tried to disguise themselves, but 7.1% of violence offenders were disguised. There was some tendency for male and older violence offenders to be disguised more than female and younger offenders. Nearly half of the violence offenders (43.4%) made their intentions clear from the start, whereas the remainder surprised or conned their victim. Female, non-White, younger, and smaller offenders disproportionally made their violent intentions clear.

Most burglars used an instrument such as pliers or a screwdriver (48.4%), a blunt instrument or a brick (22.9%), or no instrument (22.2%). Female, non-White, and younger offenders tended to use no instrument. Most violence offenders used no weapon (71.2%), whereas 12.6% used a sharp weapon such as a knife and 10.6% used a blunt weapon such as a stick. Female and younger offenders tended to use no weapon, whereas offenders with facial hair tended to use blunt weapons.

Most burglary (79.6%) and violence (60.4%) offenders showed some degree of premeditation, because they went pre-equipped for their crime with an instrument or weapon (rather than, for example, picking up a glass in a pub). However, going pre-equipped was not significantly related to any offender characteristics. Most burglary (59.9%) and violence (74.6%) offenders made their escape after the offense on foot as opposed to in a vehicle. Female and younger offenders were disproportionally likely to escape on foot.

The majority of violence offenders (55.0%) were recorded as under the influence of alcohol at the time of their offense, as were 13.1% of burglars. Assuming that the absence of this information meant that offenders were not under the influence, male, White, older, and larger burglars were disproportionally likely to be under the influence of alcohol. Similarly, male, White, older, and larger violence offenders tended to be under the influence of alcohol.

According to the records, monetary gain was overwhelmingly the most common reason for burglaries (85.1%), followed by drink or drugs (8.5%). Female, White, older, and taller offenders disproportionally committed burglary

because of drink or drugs. In contrast, the most common reason for violence was anger or provocation (36.0%), followed by monetary gain (21.1%) and drink or drugs (16.6%). Female, non-White, younger, and smaller offenders disproportionally committed violence for monetary gain.

These results relating offense features to offender characteristics are quite intriguing. There are repeated suggestions that male, White, and older offenders commit offenses in a rather different way from female, non-White, and younger ones. Ideally, it would be desirable to develop a criminological theory to explain these kinds of results. This would require the supplementation of records by interviews with offenders asking them about their choice of offenses and victims.

OFFENSE VERSUS OFFENDER PROFILES

Factor analyses were carried out on features of burglary and violence offenses (all dichotomized) to investigate how many underlying constructs they reflected. The offense features included in the analyses (from Tables 2 and 3) were location, site, time, day, season, escape method, alcohol influence and reason (for burglary and violence); entry area, access method, and instruments used (for burglary only); and disguise, clear intention, and weapon use (for violence only). Distance of the offense from the offender's address was not included (because of the intention to compare the location of the offense with the address of the offender) and going pre-equipped was also not included because of the large amount of missing data.

For burglary, four important factors were extracted, accounting for 50.5% of the variance. After a varimax rotation, the highest loadings on the first factor were residential site (.76), day time (.63), and entry from the rear (.67); on the second factor were winter season (.56), entry by smashing windows (.72), and alcohol influence (.64); on the third factor were monetary gain reason (.73), escape not on foot (.61), and weekday offense (.34); and on the fourth factor were City of Nottingham location (.54) and no instrument (.72).

For violence, similarly, four important factors were extracted, accounting for 52.4% of the variance. After a varimax rotation, the highest loadings on the first factor were night time (.84), alcohol influence (.80), and clear intention (.45); on the second factor were street site (.74), no weapon (.65), and no disguise (.44); on the third factor were City of Nottingham location (.57), escape on foot (.70), and reason not anger (.58); and on the fourth factor were weekend offense (.73) and summer season (.52).

These factor analyses suggest that the basic and easily measured offense variables of location, site, time, day, and season are key elements of the fundamental dimensions underlying offense variables. Other offense variables were

associated with at least one of these basic variables. Hence, these basic offense variables will be used in developing illustrative offense profiles.

The extent to which a combination of offense characteristics (an offense profile) predicted a combination of offender characteristics (an offender profile) was then investigated. Because of the small number of cases, each profile was limited to four variables: location, site, time, and day (for offenses); and address, age, sex, and ethnicity (for offenders). The sample was divided at random into two halves: one used as a construction sample and the other as a validation sample. Offense profiles were related to offender profiles in the construction sample to determine which offender profile was most commonly associated with each offense profile. The success of this prediction was then investigated in the validation sample, using ASP and TPP. However, the analysis of burglary profiles was rather uninteresting, because in almost all cases, the predicted offender profile was a young White male.

Table 4 summarizes offense versus offender profiles for violence. For example, when the offense occurred in the street in the City of Nottingham at

Table 4
Offense Versus Offender Profiles for Violence

Offense profile				Offender profile				Const		Valid	
Loc	Site	Time	Day	Add	Age	Sex	Eth	Cor	N	Cor	N
NO	ST	NI	WD	NO	OL	MA	WH	2	2	2	2
NO	OP	DA	WD	NO	YO	MA	NW	4	20	3	22
NO	OP	DA	WD	NO	OL	MA	WH	4	20	6	22
NO	OP	DA	WE	NO	YO	FE	NW	4	19	4	15
NO	OP	DA	WE	NO	OL	MA	WH	4	19	2	15
NO	OP	NI	WD	NO	OL	MA	WH	8	22	9	25
NO	OP	NI	WE	NO	OL	MA	WH	19	47	18	44
CO	ST	NI	WD	NO	YO	MA	NW	1	1	0	1
CO	ST	NI	WE	CO	OL	MA	WH	3	3	1	2
CO	OP	DA	WD	CO	OL	MA	WH	6	11	0	6
CO	OP	DA	WE	CO	YO	MA	WH	4	7	2	9
CO	OP	NI	WD	CO	OL	MA	WH	10	14	10	14
CO	OP	NI	WE	CO	OL	MA	WH	13	25	15	35

Loc, location; NO, Nottingham; CO, county; site: ST, street or outside; OP, other place; time: NI, night (6.00 p.m.–6.00 a.m.); DA, day (6.00 a.m.–6.00 p.m.); day: WD, weekday (Monday–Thursday); WE, weekend (Friday–Sunday); add, address; age: OL, older (21 or over), YO, younger (20 or less); sex: MA, male; FE, female; Eth, ethnicity: WH, White; NW, non-White; const, construction sample; valid, validation sample; cor, number correct.

nighttime on a weekday, both of the offenders in both construction and validation samples were older White males living in the City of Nottingham. For city offenses in other places in daytime on a weekday, there were two equally common offender profiles in the construction sample: a young non-White male or an older White male, both living in the city. Similarly, for city offenses in other places in daytime on a weekend, young non-White city females and older White city males were equally common in the construction sample.

The TPP in the validation sample was. 411 (72 out of 175) compared with .480 (82 out of 171) in the construction sample. There is bound to be some shrinkage between construction and validation samples *(5)*. The ASP in the validation sample was .247. Hence, on average, these offense profiles identified 24.7% of offenders in the system as predicted offenders, and 41.1% of predictions based on offense profiles were correct.

CHARACTERISTICS OF THE VICTIM VERSUS CHARACTERISTICS OF THE OFFENDER

In comparing victim characteristics with offender characteristics, the analysis was based on 1084 offender–victim pairs. There were 655 different offenders and 739 different victims recorded in the files. Unfortunately, it was difficult to study the characteristics of burglary victims. Burglary is a crime essentially against a household or business, not against an individual. However, the characteristics of dwellings or business premises were not typically recorded in the files. In practice, the person listed as the victim of burglary (the "injured party") was usually the person who reported the crime to the police. Hence, if a household was burgled and the husband reported the crime to the police, the husband would be listed as the victim, although the wife and children had also been victimized. Therefore, the fact that burglary victims recorded in the files were disproportionally male (67.8% of 621 with sex known, out of 664 burglary victims) is misleading.

These considerations led us to study only the characteristics of violence victims (in the 420 victim–offender pairs). Table 5 summarizes the relationship between the characteristics of victims and the eight key observable characteristics of offenders. As in Tables 2 and 3, the *P* values are based on two-way cross-tabulations. Table 5 also summarizes (in the column headed "Same") the relationship between each victim characteristic and the same offender characteristic (e.g., victim sex versus offender sex and victim ethnicity versus offender ethnicity). Nearly one-third of female victims had female offenders (31.9% of 91) compared with only 2.4% of male victims, a highly significant difference ($\chi^2 = 72.78$, $P < .0001$). Hence, knowing that a victim was female helped in

Table 5
Characteristics of Victims versus Offenders for Violence

Victim characteristics (number of categories)	Percent recorded	Offender characteristics								
		Sex (2)	ETH (2)	Age (5)	HT (3)	BU (3)	HC (2)	HI (3)	FH (3)	Same
Sex (2)	99.5	.0001	.0001	.0001	.001	.01	–	–	.039	.0001
Ethnicity (2)	14.8	NC	–	–	–	–	–	–	–	–
Age (6)	96.7	.0001	.0002	.0001	.0001	.0005	–	–	.095	.0001
Height (3)	11.2	NC	–	–	–	–	–	–	–	–
Hair Color (2)	10.7	NC	–	–	–	–	–	–	–	–
Hair Length (2)	10.7	NC	–	–	–	–	–	–	–	–
Marital Status (2)	19.5	.0001	.0001	.0001	.067	.014	–	–	.02	.076
Occupation (4)	88.1	.0001	.0001	.0001	.035	.0001	.008	–	.03	.0001
Address (5)	86.7	.007	.0001	.0001	–	.011	–	.063	.002	.0001
Distance from Crime (4)	86.5	.0001	–	.006	–	.084	–	.047	–	NA
Alcohol Use (2)	100.0[a]	.002	.027	.0001	.013	.0006	–	–	–	NA
Activity (7)	98.3	.0001	.0001	.0001	.0001	.0003	.027	.003	–	NA

NA, not applicable; NC, not calculable (all offenders male among those recorded); ETH, ethnicity; HT, height; BU, build; HC, hair color; HL, hair length; and FH, facial hair.

Based on 420 victim–offender pairs. The figure in each cell gives the significance level (based on χ^2).

[a] Assuming that absence of information indicates negative information.

predicting the sex of the offender. Female victims were also associated with non-White offenders, younger offenders, smaller offenders, and offenders with no facial hair.

The ethnicity of the victim was rarely recorded in the files (in only 14.8% of cases). Perhaps because of small numbers, victim ethnicity was not significantly related to any offender characteristics. However, there was some tendency for White victims to have non-White offenders (14.9% of 47 White victims had non-White offenders compared with 6.7% of 15 non-White victims). The age of the victim was almost always recorded (96.7%). Younger victims tended to have younger offenders, female offenders, non-White offenders, and smaller offenders. The height, hair color, and hair length of victims were rarely recorded. Again perhaps because of small numbers, these victim characteristics were not significantly associated with any offender characteristics.

Moving on to non-observable victim characteristics, the marital status of the victim was rarely recorded (19.5%). However, single victims tended to have female, non-White, and younger offenders who were relatively small and had no facial hair. In addition, there was some tendency ($P = .076$) for single victims to have single offenders. The victim's occupation was usually recorded (88.1%). The significant results summarized in Table 5 largely reflect the fact that victims who were still in education tended to have female, non-White, and younger offenders who were smaller and tended to have black hair. In addition, victims in education tended to have offenders in education.

The victim's address was known in most cases (86.7%). The significant results summarized in Table 5 reflect the fact that victims living in Central and Suburban Nottingham were disproportionally likely to have female, non-White, and younger offenders. In addition, victims tended to live in the same areas as offenders. The distance between the victim's residence and the scene of the crime could be calculated in most cases (86.5%). In nearly half (47.4%) of these cases, this distance was 1 mile (1.6 km) or less, whereas it was 2–3 miles (3.2–4.8 km) in a further 20.1%. Hence, most victims lived close to the scene of the crime. Victims who lived very near to or very far from the scene of the crime were more likely to have male and older offenders, whereas victims who lived near to the crime were more likely to have young offenders.

The files indicated that the victim was under the influence of alcohol in 30.2% of cases and not under the influence of alcohol in a further 4.3%; however, it might perhaps be surmised that the absence of any mention of alcohol use by the victim generally reflected no alcohol use by the victim, so that the 30.2% who were users might be contrasted with 69.8% who were non-users. With this assumption, alcohol use by the victim was associated with male, White, older,

and taller offenders. The files almost always (98.3%) indicated what the victim was doing at the time of the crime. The most common activities were drinking or in a place of entertainment (30.3%), working (28.8%), and walking/cycling (18.4%). As with the victim's alcohol use, the victim drinking or in a place of entertainment was associated with male, older, and White offenders. The other interesting result to emerge from this analysis was that victims who were out shopping (6.0% of all victims) tended to have female, younger, and non-White offenders.

The relationship between victim characteristics and key demographic features of offenders seen in Table 5 suggests that these victim characteristics might be useful in an offender profiling system in narrowing down the range of possible offenders. Table 6, modeled on Table 4, summarizes to what extent address–age–sex victim profiles predicted address–age–sex–ethnicity offender profiles in construction and validation samples. For example, when the victim was a young city female, the offender was most commonly a young non-White city female. The TPP in the validation sample was .511 (92 out of 180) compared with .556 (89 out of 160) in the construction sample. The ASP in the validation sample was .262. Hence, on average, these victim profiles identified 26.2% of system offenders, and 51.1% of predictions based on victim profiles were correct.

Table 6
Victim Versus Offender Profiles for Violence

Victim Profile			Offender Profile				Const		Valid	
Add	Age	Sex	Add	Age	Sex	Eth	Cor	*N*	Cor	*N*
NO	YO	FE	NO	YO	FE	NW	5	10	4	9
NO	YO	MA	NO	YO	NA	WH	4	14	4	19
NO	OL	FE	NO	YO	MA	WH	2	3	2	12
NO	OL	MA	NO	OL	MA	WH	21	40	17	34
CO	YO	FE	NO	YO	FE	NW	2	5	2	5
CO	YO	MA	CO	OL	MA	WH	24	35	16	30
CO	OL	FE	CO	YO	MA	WH	5	14	11	17
CO	OL	FE	CO	OL	MA	WH	5	14	2	17
CO	OL	MA	CO	OL	MA	WH	23	39	34	54

Add, address: NO, Nottingham; CO, County; age: OL, older (21 or over); YO, younger (20 or less); sex: MA, male; FE, female; ETH, ethnicity: WH, White; NW, non-White; const, construction sample; valid, validation sample; and cor, number correct.

TO WHAT EXTENT DO OFFENDERS REPEAT SIMILAR TYPES OF OFFENSES?

The 655 offenders committed a total of 1017 recorded offenses leading to conviction during the time period of the research. As already mentioned, these represented 1017 offense–offender pairs. These figures exclude offenses "taken into consideration"; the types of these offenses were not specified in the records. For the 183 offenders with two or more recorded offenses, it was possible to compare the characteristics of pairs of offenses to see to what extent offenders repeated similar types of offenses. Each offense was compared with each other offense for each offender; hence, each offender with N offenses permitted $N(N - 1)/2$ comparisons within pairs of offenses. Most of these offenders (96) committed only two offenses.

In total, 753 pairs of offenses could be compared. However, in 46 cases, the offenses in a pair were different (one was burglary and the other was violence). The main comparisons in this section are of 638 pairs of burglary offenses and of 69 pairs of violent offenses. The preponderance of burglary comparisons shows that the multiple offenders in this research tended to be repeat burglars.

Table 7 summarizes the results of these comparisons. The table summarizes four statistics: the percentage agreement between characteristics of the two offenses, the percentage of comparisons with data recorded (i.e., not missing) on both offenses, the highest percentage of cases in one category of the contingency table, and the value of kappa, which is a statistical measure of agreement which takes account of chance expectation *(29)*:

$$\text{Kappa} = \frac{O - E}{N - E}$$

where, O, total cases of observed agreement; E, total cases of chance-expected agreement; and N, total comparisons.

According to Fleiss *(30)*, a kappa value of .40 or greater shows good agreement in comparison with chance expectation, and a kappa value of .75 or greater shows excellent agreement.

All four statistics are shown because they all indicate different features of the data. The percentage agreement between characteristics of the two offenses is a simple measure of concordance, but it is possible to have a high percentage agreement by chance if a high proportion of the offenses tend to fall in one category. This is why kappa is included as a measure of improvement over chance agreement. Variables containing a great deal of missing data are likely to be of limited usefulness in narrowing down the range of potential offenders. Clearly,

Table 7
Similarity in Characteristics of Offenses

Variable (number of categories)	Percent agreement	Percent recorded	Percent highest	Kappa
Burglary				
Location (7)	81.9	98.6	43.7	0.73
Distance (6)	74.0	91.1	60.6	0.45
Site (6)	62.7	100.0	50.9	0.33
Time (8)	29.3	75.9	8.9	0.18
Day (7)	21.2	97.8	5.0	0.08
Season (4)	61.1	100.0	22.3	0.48
Entry (4)	55.1	74.3	44.1	0.16
Method (3)	51.4	94.8	25.5	0.22
Instrument (5)	51.4	44.2	37.2	0.22
Escape (4)	100.0	48.7	55.3	1.00
Equipped (2)	78.1	32.9	72.4	0.21
Profile (16)	29.3	64.1	6.8	0.21
Violence				
Location (6)	85.5	100.0	50.7	0.77
Distance (6)	98.4	92.8	48.4	0.98
Site (5)	92.6	98.6	42.6	0.90
Time (5)	72.5	100.0	33.3	0.67
Day (7)	75.4	100.0	33.3	0.67
Season (4)	88.4	100.0	27.5	0.71
Weapon (5)	97.1	98.6	73.5	0.97
Intention (3)	86.8	98.6	33.1	0.80
Escape (2)	100.0	69.6	83.3	1.00
Equipped (2)	93.8	23.2	68.8	0.85
Disguised (2)	94.2	100.0	89.9	0.57
Profile (8)	83.8	98.6	26.5	0.80

Based on 638 burglary–burglary pairs and 69 violence–violence pairs.

the most useful variables are those with a high percentage agreement between the forms, a high percentage of data recorded, a not very high percentage of cases in one category, and a high value of kappa. Any criterion values of these statistics are somewhat arbitrary, but we have focused particularly on variables with at least 75% agreement, at least 75% of data recorded, and a kappa value of at least .40. It should also be realized that these quantities depend on the number of categories of a variable.

Table 7 summarizes the degree of agreement between the characteristics of offenses in each pair. For example, when locations of offenses were divided into seven areas as in Table 1, two burglary offenses were committed in the same location in 81.9% of the comparisons. Locations were recorded in 98.6% of cases, the most frequent category was for both offenses to be in Suburban Nottingham (43.7% of pairs), and the value of kappa was high (.73). Hence, burglary offenders tended to commit successive offenses (at least within this short time period) in the same areas. The same was true for violence offenders. Also, the distances traveled by offenders to commit their offenses were usually similar.

Violence offenders, in particular, tended to commit their offenses in similar sites (most commonly, on the street). There was also some tendency for burglars to victimize the same types of sites (residences, businesses, shops, etc.). Violence offenders also tended to commit their offenses at similar times, days, and seasons. However, there was no marked tendency for burglars to commit their offenses at similar times or on similar days. Burglars did commit their offenses in similar seasons. It might be thought that this was because many of the burglaries being compared led to convictions on the same occasion and hence in some cases might have been part of the same series. However, when the analysis was restricted to the 291 comparisons of burglaries leading to convictions on different occasions, the results were very similar (e.g., 59.1% agreement on season). Judging from the values of kappa, there was only weak agreement among burglaries on the place of entry (front, back, rear, and roof), the method (smash window, force entrance, and others), instruments used (tools, blunt instruments, etc.), and going pre-equipped. However, there was perfect agreement for burglary and violence offenses on the method of escape (on foot, car, motorcycle/bicycle, and public transport). Violence offenders were also consistent in their types of weapons used, whether their intentions were clear from the start, whether they went pre-equipped, and whether they made any effort to disguise their identity. Generally, violence offenses were more similar than burglaries, suggesting that offender profiling might be more useful with violence than with burglary in linking a series of similar offenses to the same offender.

The location–site–time–day offense profiles were also compared with each other to see how similar they were. Because all four constituent variables were dichotomized, these were in principle 16-category variables although the violence variable only had eight categories in practice. In the case of burglary, 64.1% of offenders had no missing data, the profiles of each offense in a pair agreed on 29.3% of occasions, and kappa = .21. In the case of violence, 98.6% of offenders had no missing data, the profiles on each offense in a pair agreed on 83.8% of occasions, and kappa = .80. Hence, there was good agreement between offense profiles for violence, and violence offenders tended to repeat similar types of offenses.

To What Extent do Offenders Repeat Similar Types of Victims?

The 655 recorded offenders had a total of 1084 recorded victims. Because of the phenomenon of co-offending, these are not 1084 different victims but 1084 offender–victim pairs. For the 204 offenders with two or more victims, it was possible to compare the characteristics of victims in a pair to see to what extent offenders tended to choose similar types of victims. As before, each offender with N victims permitted $N(N-1)/2$ comparisons within pairs of victims. Most of these offenders (105) had only two victims.

Altogether, 952 pairs of victims could be compared. However, in 43 cases, the offenses in a pair were different (one was burglary and the other was violence). The main comparisons in this section are of 684 pairs of burglary victims and of 225 pairs of violence victims.

Table 8 summarizes the degree of agreement between the characteristics of victims in each pair. There was little tendency for offenders to choose burglary victims of similar ages and sexes but that could be because burglary is essentially a household crime and who is counted as the victim is somewhat arbitrary (as explained on p. 153). It might have been better to code the characteristics of the burgled premises rather than those of the burglary victim, but the available data did not permit this. There was a marked tendency for offenders to choose violence victims of the same sex but not particularly of the same age.

Successive victims of burglary and violence offenders tended to live in the same area. There was also a marked tendency for burglary victims to have similar occupations (coded as unemployed, employed, in education, or housewife/retired) and a lesser tendency for violence victims to have similar occupations. Successive violence victims tended to be engaged in the same activity (coded as walking/cycling, waiting for transport, driving, working, drinking/entertainment, at home, and out shopping; most were involved in drinking/entertainment). Similarly, there was some tendency for successive burglary victims to be engaged in the same activity (coded as working/school, away/holiday, asleep, at home, moving home, out shopping, out for evening entertainment, in another part of the building; most were at home). Hence, there is some evidence of repetition in the choice of victims although the available number of variables was limited.

The sex–age–address victim profiles were also compared with each other to see how similar they were. Because all three constituent variables were dichotomized, these were in principle eight-category variables, although the burglary variable only had six categories in practice. In the case of burglary, the profiles of each victim in a pair agreed on 44.5% of occasions, and kappa = .23.

Table 8
Similarity in Characteristics of Victims

Variable (number of categories)	Percent agreement	Percent recorded	Percent highest	Kappa
Burglary				
Sex (2)	56.8	90.4	41.7	0.07
Age (6)	27.9	71.3	10.5	0.10
Address (7)	77.7	70.0	54.3	0.61
Occupation (4)	74.5	74.4	62.7	0.70
Activity (8)	43.6	76.8	22.5	0.30
Profile (6)	44.5	53.2	20.9	0.23
Violence				
Sex (2)	91.6	100.0	84.9	0.57
Age (8)	41.4	97.8	16.8	0.22
Address (6)	80.5	88.9	63.0	0.60
Occupation (4)	67.5	69.8	55.4	0.30
Activity (7)	96.8	98.7	72.5	0.93
Profile (8)	47.2	87.6	20.3	0.24

Based on 684 burglary–burglary pairs and 225 violence–violence pairs.

In the case of violence, the victim profiles agreed 47.2% of the time, and kappa = .24. These are rather low levels of agreement, showing little tendency for burglary and violence offenders to repeat similar types of victims.

OTHER ANALYSES RELEVANT TO OFFENDER PROFILING

An important issue is the extent to which offenders are specialized as opposed to versatile. In principle, offender profiling is likely to be more useful if offenders are specialized. Farrington and Lambert *(24)* investigated specialization by searching the previous criminal records of all 655 offenders. They found that 89.2% of burglars and 79.1% of violence offenders had a previous criminal record. (This refers to the criminal record at the time of the first arrest recorded in the period of our research.) Because only 10.8% of burglars and 20.9% of violence offenders would not have been found in existing records, this suggests that offender profiling is potentially useful as a technique for assisting in the detection of offenders. Burglars were significantly more likely than violence offenders to have previously recorded offenses. As many as 36.2% of burglars and 23.6% of violence offenders had 10 or more previously recorded offenses.

Just over half of the burglars (51.1%) had one or more previous burglaries in comparison with about a quarter (25.1%) of the violence offenders. Similarly, nearly half of the violence offenders (46.8%) had at least one previous violence offense (wounding, grievous bodily harm, actual bodily harm, affray, threatening behavior, or robbery) in comparison with about one-third (32.4%) of the burglars. Hence, restricting offender profiling to offenders with a recorded offense of the same type (e.g., searching for burglars only among recorded burglars) would make it impossible to identify about half of the offenders. More of the violence offenders also had a previously recorded offense of Breach of the Peace or public disorder (17.5% as opposed to 10.5% of burglars). These figures agree with criminological research *(31)* showing that there is some specialization in burglary and violence superimposed on a fair degree of versatility in offending.

Farrington and Lambert *(9)* compared victim descriptions of offender characteristics with police-recorded offender characteristics. They found that, for violence, sex, ethnicity, age, height, build, hair color, and hair length of offenders were often reported by victims and were reported reasonably accurately. They investigated how far sex–ethnicity–age profiles reported by victims were accurate and found an ASP of .132 and a TPP of .459. Hence, each profile identified 13.2% of stored offenders on average and was correct 45.9% of the time. The accuracy was slightly greater with rare profiles than with common ones.

Farrington and Lambert *(9)* also compared witness descriptions of offender characteristics with police-recorded offender characteristics. Once again they found that, for violence, sex, ethnicity, age, height, build, hair color, and hair length were often reported by witnesses and were reported reasonably accurately. They investigated how far sex–ethnicity–age profiles reported by witnesses were accurate and found an ASP of .118 and a TPP of .537. Again, the accuracy was slightly greater with rare profiles than with common ones.

Farrington and Lambert *(9)* also investigated how these offenders were apprehended. The most important ways in which burglars were arrested were that they were caught in the act (14.5%), through an informant (12.5%), they were caught near to or leaving the scene of the crime (12.0%), they were traced through property left at the scene of the crime or through the disposal of stolen goods (10.5%), they were seen acting suspiciously in the area, for example, carrying stolen goods (7.7%), they were caught for another crime and admitted this burglary (7.0%), or through an accurate description by a witness (6.7%). Coupe and Griffiths *(32)* also investigated how burglars were apprehended. The most important ways in which violence offenders were arrested were because they were detained at the scene of the crime (16.0%), through an accurate description by a

victim (14.7%), through an accurate description by a witness (13.3%), through a description of a vehicle or a number plate (10.6%), because they were caught in the act (10.6%), or as a result of inquiries in the local area (6.6%). Clearly, victim and witness descriptions were far more important in apprehending violence offenders than burglars, no doubt because violence offenders were more often seen by victims and witnesses. The time interval between offending and apprehension was typically very short, suggesting that the likelihood of arrest declined steeply with time after the commission of an offense.

CONCLUSIONS

Our research has shown the existence of numerous significant relationships that could form the basis of an offender profiling system. The following features (at least) could and should be included:

1. Offender: Address, sex, age (date of birth), ethnicity, height, accent, build, hair length, hair color, facial hair, tattoos, and distinctive physical features.
2. Offense: Location, site, time, day, date, method, instruments or weapons, method of escape, disguise, and offender under influence of drink or drugs.
3. Victim: Address, sex, age, ethnicity, marital status, occupation, activity at the time of the crime, and victim under influence of drink or drugs.
4. Victim report of offender: All offender variables except address.
5. Witness report of offender: All offender variables except address.

Distinctive physical features (e.g., bulging eyes and teeth missing) are worth recording although they do not apply to many cases, because they might help to identify the offender in these few cases.

We have made some progress in developing offender and offense typologies, but further work requires more extensive and more complete data. It is important to develop offender and offense typologies based on more variables and categories than we have used. However, there are a number of issues that our research has highlighted.

At the time of this research in Nottinghamshire, there was unsystematic and incomplete coverage of many items of interest, for example, those on the C10 (description and police antecedents) form. We think it is unlikely that the Nottinghamshire police were very different from other forces in this respect. The problem is that much of the information on the C10 form was never used again, so there was little incentive for police officers to spend a great deal of time completing the form. Indeed, the Nottinghamshire police did start completing these forms more carefully when they saw that we were making use of them. This problem might be overcome by redesigning the form into a series of check-lists, making it easy to circle the appropriate alternative each time. Nowadays, all

these data should be entered directly on to a computer. Also, the police could be trained in completing the forms and encouraged to record all items (e.g., height) as accurately as possible. It may be a mistake to rely too much on offender self-reports. Once offenders realize that the information on the C10 form might help to detect them in the future, they might be motivated to provide inaccurate information.

Further research is needed on many topics connected with offender profiling. An important issue is the rate of change of variables such as address, height, and build over time. A major problem is how offense data, victim data, and victim and witness information on the offender can best be combined to predict the profile of the offender. Our analyses were based on pairs (e.g., offense–offender and victim–offender), but future analyses need to be based on more complex combinations (e.g., offense–victim–offender triplets), requiring more data. Different profiling systems could be compared using ASP and TPP. One of the greatest challenges is how best to cope with a variable number of victims, a variable number of witnesses, a variable number of offenders, and a variable number of separate incidents. We have recorded co-offending but not really addressed it in our analyses; any offender profiling system will probably have to search for individuals rather than co-offending groups, especially as co-offending groups are typically short-lived *(33)*.

Research is also needed on how best to classify physical features of the offender, dress, tattoos, and so on. The classification systems currently in operation seem to be based on common sense rather than systematic research, but there could be relevant scientific literature on physical characteristics that could be applied; for example, there is the scientific field of anthropometry (concerned with the measurement of bodily features) and there is a great deal of psychological literature on the related topic of face identification. Research could also be carried out on improving questions to offenders, victims, and witnesses; for example, questions about being under the influence of alcohol or drugs could be made more specific, and hence more reliable and valid.

Research is also needed on the usefulness of additional information that might be collected. For example, more detailed information could be collected about the offender's drug and alcohol problems, psychiatric problems, and about his or her family background (e.g., number of siblings and coming from a one-parent family). Detected offenders might be given psychological tests, for example, to measure their personality, antisocial attitudes, or impulsiveness. Left or right handedness, face shape, and handwriting could be recorded. Records could be searched to determine the convictions of offenders' parents, siblings, and other family members to detect criminal families. The crime rates of the areas in which offenders live could be measured and coded. The distances between locations of

offenses and addresses of offenders could be determined more easily by reference to a geographical database. In connection with burglary, research is needed on how best to classify characteristics of households, dwellings, and business premises.

More fundamental research is needed, designed to develop theories about why there are correlations between certain offender characteristics, offense characteristics, and victim characteristics. Existing criminological theories are of limited relevance, because few criminologists have been interested in investigating correlations between physical characteristics of offenders and specific features of offenses. This information should be collected in longitudinal studies to link developmental and situational data. The theories should help to guide research on offender profiling by specifying particular characteristics of offenders, offenses, and victims that should be measured. Research is also needed on typologies of offenders, offenses, and victims. Studies are also required on the prediction of recidivism by offenders, so that recidivism probabilities and rates of offending can be taken into account in an offender profiling system. More criminal career research *(34)* is needed, for example, to investigate specialization in offending, to what extent serious offenders also commit more trivial offenses, and whether persons found not guilty subsequently have similar criminal careers to persons found guilty.

In our opinion, a computerized offender profiling system, based on criminological theories and empirical data about statistical regularities linking characteristics of offenders, offenses, and victims, would be a valuable addition to existing fingerprint and DNA-based systems in helping to detect offenders.

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Chapter 8

Criminal Profiling in a Terrorism Context

Geoff Dean

Summary

This chapter addresses the issue of the relevance of the offender/criminal profiling paradigm to terrorists. There are three main stumbling blocks inherent in the profiling paradigm that make transferring it to terrorists neither simple nor necessarily helpful and could in fact be dangerously misleading. It is argued that it is more fruitful to shift the focus of the profiling paradigm by engaging in profiling the "process" of terrorism rather than the "person." A multi-context model is developed to show how various factors operating at different but intermeshing contexts can come together to profile the terrorism process. Data from arrested Jemaah Islamiyah (JI) terrorist network members in Southeast Asia were used to demonstrate the utility of this multi-context model of systemic terrorism.

INTRODUCTION

This chapter engages in a critical analysis of the use of "criminal profiling" as developed in a criminal context and asks what relevance does such a paradigm have when applied in a terrorism context? More specifically, does offender profiling have potential to assist in developing a more comprehensive understanding of terrorism or is it largely irrelevant?

The chapter is divided into two main sections. The first section provides a brief history of terrorism before undertaking an analysis of how transferable the "criminal profiling" paradigm is to the terrorism field. Three main stumbling blocks to this issue of the transferability of offender profiling to terrorism are identified and discussed in this section. The second section introduces the notion

of profiling the "process" of terrorism rather than the "person" of a terrorist group and argues that this shift in focus has potential to increase the contemporary relevance of the offender/criminal profiling paradigm to terrorism. A multi-context model of systemic terrorism is used to demonstrate the utility of this focus. The applicability of this model is illustrated by research data on members of the Jemaah Islamiyah (JI) terrorist network arrested in Singapore in December 2001 and August 2002.

The chapter concludes with a discussion of the key benefits of using this multi-context model to combat terrorism by law enforcement/security agencies with investigative and intelligence gathering responsibilities for terrorism.

PROFILING TERRORISTS

There is another type of "offender" against society, namely, "terrorists," whose profiling may be potentially useful. Before embarking on an analysis of the utility of the offender profiling paradigm as developed in a criminal context to a terrorism context, a brief overview of the historical antecedents of terrorism is a necessary backdrop. Such an overview provides the background to understand the current wave of "religious" terrorism that bursts on the world stage in such chillingly dramatic fashion with the 9/11 attacks in 2001 in New York and what value offender profiling might have in this terrorism context.

A Brief History of Terrorism

The history of modern terrorism can be characterized as constituting four distinctive "waves" of terror. According to Rapoport *(1)*, the essential features of each of these waves are summed up in the label he assigns to them along with the approximate dateline for each wave:

1. "Anarchist" wave (1880s—lasted some 40 years, till beginning of 1920s).
2. "Anti-Colonial" wave (1920s—lasted some 35 years, till mid-1960s).
3. "New Left" wave (1960s—lasted some 30 years, largely dissipated by 1990s).
4. "Religious" wave (began on 1979 with Iranian Revolution).

In all these "waves," the dominant aim was revolution. But "revolution" was perceived and understood slightly differently in each wave. Terrorist organizations often based their "revolution" on the principle of national self-determination that was to be achieved by seceding from, overturning, or completely destroying the "perceived" unjust state or ruling party.

In this regard, it is worth noting that Menachem Begin, leader of the "Irgun," a rebel group that sprung up in the "anti-colonial" wave to fight for an autonomous Palestine State, was the first to describe his followers as "freedom

fighters" struggling against government terror. This term has proved so popular that as Rapoport states " ... all subsequent terrorist groups followed suit" *(1)*.

However, although the term "freedom fighter" had some legitimacy in the anti-colonial era, as often the causes for which revolutionaries fought were seen by many as more justifiable than in the first anarchist wave of terrorism, it is a term that has lost much of its credibility, having been corrupted by overuse and abuse by all terrorist causes.

The fourth wave of "religious" terrorism has often played a part in the three earlier waves, for religious identity is an underlying component that sometimes overlaps and becomes intrinsically interwoven in ethnic rivalries as evidenced in the Armenian, Macedonian, Irish, Cypriot, Israeli, and Palestinian conflicts.

However, the role of "religion" in these earlier waves of terror was to support the creation of a secular sovereign state that in principle was not different from other states in the international arena *(1)*. In the current fourth wave, "religion" has a crucially different meaning and use. "Religion" of the fundamentalist extreme type is still used as a legitimizing principle, in much the same way as the "self-determination" principle in the previous three waves was used to legitimize their forms of terrorism, but the purpose is different in this fourth "religious" wave in that the aim is not only to determine their own destiny (self-determination principle) but also in a particular form as a wholly "religious" state where secular politics, if allowed to exist at all, only plays a supporting role to "religion" as the supreme rule (religious-legitimizing principle). Thus, the goal is the reverse of most contemporary societies where secular politics is on top as the governing body, and the rule of law, even if given lip service in some societies, is the dominant standard. However, the "religious" terrorism of the fourth wave is built on the perspective that their fundamentalist interpretation of religion must be on top, not secular politics as the governing body, and that the rule of "religious law" not man-made laws must be the standard that operates in this religiously reformed society.

Therefore, the outworking of this "religious" legitimizing principle supplies the justification for the use of violent terror against the perceived "godless" ones and the "infidels" by the "true believers" who are acting on behalf of God. Such certitude in their own beliefs about the legitimacy of using terror tactics approved by God sets this fourth wave of terrorism distinctively apart from other previous mixes of religion and terrorism.

Islam is the religion that is currently at the forefront of this fourth wave of terrorism, as it is being played out in today's contemporary climate. However, such religiously justified terrorist's acts are not the sole or exclusive province of Islam. Other religions, such as the Christian Identity Movement in America, an ultra-right wing extremist group, have engaged in violent terrorist acts with

the same certainty about the righteousness of their Godly convictions. Islamic terrorism uses its "religion" to not only justify the use of deadly violence against anyone it deems an enemy but also fulfill its larger goal or vision to bring about a "pure," non-secular Muslim state governed by *Sharia*, Islamic law. Such a vision fuses the "spiritual" and the "political" together for the devout Muslim in a way that makes "terrorism" an acceptable sacrifice for Allah. The potency of this message was felt on the world stage with the al-Qaeda attack of 9/11 in 2001. The suicide mission was not carried out by a bunch of crazy, insane, lunatics. But the testimonies of those involved shows they were generally well educated and seriously "devout" Muslims.

APPLYING PROFILING PARADIGM TO TERRORISTS

Some modification to any system is necessary when it is seeking to be applied in a different context. However, the extending of an offender profiling paradigm* to terrorists is a substantial undertaking and requires more than tinkering at the edges. This is because the very nature of offender profiling as outlined in the first section presents three main roadblocks to transferring its methodology from a criminal context to a terrorism context. These roadblocks revolve around the following:

1. First, the offender profiling field is beset with definitional difficulties.
2. Second, there is conceptual confusion in the offender profiling field over different approaches.
3. Third, there exists the issue of the extent of psychological disturbance present in an offender.

Each of these stumbling blocks of the "criminal offender" profiling paradigm—definitional difficulties, conceptual confusion, and psychological disturbance—will be discussed in relation to terrorism and the "terrorist offender."

DEFINITIONAL DIFFICULTIES

In relation to offender/criminal profiling, Kocsis *(2)* has noted that there is no commonly agreed term for the construct of profiling. Clearly, the "profiling" label acts like a covering blanket over very real differences and disparate approaches to profiling and where various profiling terms are used idiosyncratically by different writers and practitioners. Hence, its meaning has become

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* In England and Europe, the literature favors the term *offender profiling*, whereas in America, the term *criminal profiling* is more often used. Also, the FBI used to use the term *psychological profiling* but now call what they do in the "profiling" arena *criminal investigative analysis*.

blurred at best and badly misunderstood at worst. Just as the "offender profiling" field is beset with terminological difficulties over how to define "profiling," the scene is even more disastrous when it comes to defining "terrorism." Quite apart from trying to apply "profiling" whatever that may mean the fact is the terrorism field itself is plagued with definitional difficulties as to what constitutes "terrorism."

Schmidt and Jongman *(3)* cited 109 different definitions of "terrorism" in the scholarly literature when they undertook a survey of leading academics in the terrorism field. This was in 1988, and the search for an uncontentious definition has still not abated. Much of the definitional debate revolves around trying to split hairs over when do the so-called freedom fighters become terrorists. As Townshend points the problem of defining "terrorism" as one of "...labelling, because 'terrorist' is a description that has almost never been voluntarily adopted by any individual or group"*(4)*. It is a pejorative label applied by governments and states to persons who use violent threats and/or force to attack such governments and states. Hence, government and state definitions of terrorism automatically treat any threat and/or use of violence as an illegal act. The problem here, of course, is this makes the state the sole arbitrator on who has the right to use violence. The US State Department's definition is a typical example of this self-serving perspective when it defines terrorism as "premeditated, politically motivated violence perpetrated against non-combatant targets by subnational groups or clandestine agents, usually intended to influence an audience"*(5)*.

Naturally, having a monopoly of the legitimate use of violence against your opponents is politically and operationally very advantageous for total-itarian states. Even in democratically elected states, it is to their political advantage to silence critics by using such self-serving definitions of terrorism, as it allows them to side step the issue of "state-sponsored terrorism." This form or type of terrorism is defined as "a method of warfare whereby a state uses agents or surrogates to create political and economic instability in another country" *(6)*. The use of the CIA by various American government admin-istrations to destabilize a number of countries, especially in Latin America over many years, is a classic case of definitional hypocrisy. Hence, the clichéd statement used by almost all guerrilla warfare and militant insurrectionary groups that "one person's terrorist is another person's freedom fighter" under-scores the relativity at very core of the definitional difficulty of terrorism. It depends on who is to do the labeling as to which side they are perceived to be belong to—a fighter for freedom or a terrorist agitator.

It is beyond the scope of this chapter to explore this definitional dilemma of terrorism any further other than to point out the inherent difficulties that any

definition entails. Even the more promising definition offered by Ganor that "terrorism is the intentional use of, or threat to use violence against civilians or against civilian targets, in order to attain political aims" *(7)* and supported by Barker as a "definition that works" because it can be applied to governments and their agencies or proxies as well as "subnational groups" still has labeling problems *(8)*.

CONCEPTUAL CONFUSION

The second roadblock in applying criminal profiling lies firmly in the field of profiling itself. As stated earlier, there is a diverse range of approaches and models available within the profiling field, but the fragmentation and argumentation over which approach/model is "best" plagues this field.

Hence, even if the "offender profiling" paradigm could be shown to be effective with regard to picking out terrorists in the crowd, there is little conceptual clarity that exists in the profiling domain to guide would-be "terrorist" experts in selecting which "profiling" approach to use, where and when, and on what type of terrorist. It comes down to personal preferences and idiosyncratic choices rather than any systematic way of assessing the usefulness of any profiling approach.

Of necessity, most "profiling" attempts rely on "statistically based" approaches rather than on "psychologically or behaviorally based" approaches, a point discussed in "Psychological Disturbance". These "statistically based" approaches generally get packaged as software like the much-touted "Matrix" statistical package favored by some American states in the wake of 9/11.

"Matrix" is short for "Multistate Anti-Terrorism Information Exchange" that combines state records and data culled from a so-called Terrorist Handbook, which purportedly reveals how terrorists "penetrate and live in our society," by the company that produced the software to arrive at a "terrorism quotient," which gives a high terrorist factor (HTF) to people who show a statistical likelihood of being terrorists *(9)*. The fact that such "profiling" systems exist is more a testament to the power of marketing than any independently demonstrated effectiveness in picking out terrorists.

PSYCHOLOGICAL DISTURBANCE

Criminal profiling has traditionally been used with "criminal" offenders who have some element of "psychological dysfunction" exhibited through their behavior, especially in crimes of a serial sexual nature like rapes and murders *(10,11)*. The key point, therefore, is that the usefulness of "offender profiling" is very much dependent on some form of psychological dysfunctionality being present at a crime scene. Hence, this raises the third roadblock with using offender profiling within a "terrorism context," because extensive empirical

research has found that in general terrorists do not exhibit the familiar telltale signs or "signature" characteristics of psychological dysfunctionality that are found in "criminal contexts" at the crime scenes of serial offenders.

In fact, Townshend states categorically that terrorists "... far from being 'criminals, crusaders, and crazies' emerge in most good empirical studies as 'disturbingly normal people' "*(4)*. This theme of the apparent "normality" of terrorists at least in psychological terms is well documented in the terrorism literature. Moreover, Rubenstein asserts that "Thankfully, the search for the 'terrorist mind' is now all but abandoned." He goes on to explain that

> As Walter Laqueur pointed out twenty-five years ago, the task is quixotic, seeing that among those engaging in political violence there exist so many varieties of terrorist organizations and behavior, sociocultural and political contexts for conflict, and diverse personality types *(12)*.

Other writers on terrorism agree with this assessment that a "typical profile" for a terrorist does not exist. "No comparative work on terrorist psychology has ever succeeded in revealing a particular psychological type or uniform terrorist mind-set" *(13)* according to Williams citing the work of David Long, a former assistant director of the US State Department's Office of Counter Terrorism. Williams also cites Mohamed Atta, the suicide pilot who flew American Airlines Flight 11 into the north tower of the World Trade Center in New York on September 11, 2001, as a case in point

> Mohamed Atta came from a privileged Cairo family and, when he was 24, went to Hamburg to study urban planning. Friends who knew him in Cairo and during his first few years at Hamburg's Technical University thought of him as a good guy and basically unremarkable *(13)*.

In fact, Crenshaw reinforces just how apparently "normal" terrorists tend to be. "What limited data we have on individual terrorists suggest that the outstanding characteristic is normality" *(14)*.

In relation to the specific manifestation of terrorism in the person of a suicide bomber, the same conclusion about there is no such thing as a "typical profile" anymore is especially the current situation in the Middle East. As Reuter points out, it used to be the case that some of the first suicide bombers were isolated, young, poor, ultra-religious people with little hope or prospects for the future, but that is no longer true *(15)*. Suicide bombers are now drawn from all walks of life and sections of the community in the Middle East. In essence, trying to "pick" today's "suicide bomber" out of the crowd is a naïve and futile task. Hence, the focal question this empirical finding about the "normality" of a terrorist in general leads us to consider is how profiling can be of any use when it comes to trying to pinpoint the "terrorist" in the passenger

line waiting to board a plane or standing outside a coffee shop in a busy street or shopping mall primed to push the bomb button? Despite this evident difficulty in profiling seeing "normal" people as terrorists, this does not imply that "profiling" is of little or no value to understanding terrorism. It depends on the profiling focus. It is argued that it is more fruitful to focus on profiling the *process* of terrorism rather than just the *person* as a terrorist. This is the issue explored in the next main section.

PROFILING TERRORISM

It is clear from the preceding discussion that while profiling a terrorist, especially suicide bombers, makes little sense, it is still possible to profile the "process" used to shape an individual into a potential terrorist. That is, it is important to make a clear conceptual distinction between profiling a person and profiling a process.

It is also equally clear that the phenomenon of terrorism, as we are currently experiencing it around the globe, cannot be explained in individual psychological terms using simplistic, single-factor notions, such as they are "brainwashed," or "crazy," or "fanatics," or "the poor and uneducated" who do these terrible things. To understand the process of terrorism, the focus has to be wider than individual psychology and must include the context in which the shaping of an individual's beliefs and values takes place. This is particularly so given the contemporary sociocultural–political Islamic climate that uses religion to legitimize and justify terrorism in the name of God.

MULTI-CONTEXT MODEL OF SYSTEMIC TERRORISM

To more fully comprehend this wider focus on how the process of terrorism works, Diagram 1 depicts a multi-context model of terrorism using a metaphor of intermeshing cogs to illustrate the systemic nature of the process.

As can be seen in Diagram 1, each of the three intermeshing cogs represents a systemic process from the "macro" *societal* level through the "intermediate" *group* level to the "micro" *individual* level. Also, there are eight "factors"[†] or surrounding "cog teeth" depicted that intermesh at various levels that are associated with this model of terrorism. They are as follows:

[†] These eight aspects in this model are considered as "factors" rather than stages or phases. Stage/phase models of terrorism in the author's view are too mechanistic to capture the dynamic interplay of these eight aspects of the terrorism process. Hence, the term "factors" is preferred, as it allows for a more flexible understanding of how an individual enters into the

Multi-Context Model of Systemic Terrorism

6. Psychological Intensification
[brain-hardening]
(mind of individual becomes 'hardened' to any worldview other than the radicalisedone)

Psychological-Personal System (micro context)

Group-Organisational-Network System (intermediate context)

5. Psychological Identification
(belief in the 'rightness'of 'cause'and the need to use violence to achieve 'justice')

7. Beliefs Radicalisation
[brain-washing]
Secular-extreme left/right ideology Religious-fundamentalism Islamic, Christian, Hinduism, etc.

Socio-Cultural-Political System (macro context)

8. Committed Activation
(decision to join and undergo training for terrorist mission)

4. Legitimising Violence
(community/society acceptance of use of violent force to 'right'perceived 'wrongs')

1. 'Perceived'Injustice
(ethnicity, nationalism, tribal separatism, poverty, religion, etc.),

3. Political / Diplomatic Failure
(inability to bring about fair and equitable solution to 'perceived'injustices)

2. Enculturated Violence
(use of force seen as 'solution'to 'right' the 'perceived'injustices)

Diagram 1. Multi-context model of systematic terrorism.

1. Macro context (sociocultural–political system).
   i. "Perceived" injustice
   ii. Enculturated violence
   iii. Political/diplomatic failure
   iv. Legitimizing violence
2. Micro context (psychological–personal system)
   v. Psychological identification
   vi. Psychological intensification
3. Intermediate context (group–organizational–network system)
   vii. Beliefs radicalization
   viii. Committed activation

The four factors at the "macro" level set in motion a de-legitimization process of the sociocultural and political context that conditions individuals to consider the use of violence as an acceptable response to perceived and/or actual injustices that the state/nation and/or international diplomatic efforts have failed to

process of becoming a terrorist. For example, it means that on the model it would be misleading to suggest that all eight "factors" must be present for someone to become a terrorist. But a stage/phase approach suggests an invariant sequence, that is, if a "stage/phase" is missed, then the process invariably breaks down. Although this is a possibility in a "factor" approach, it is not absolutely the case. A person could still go on to become a terrorist without some of the "group" or "societal" factors that support the terrorism process.

remedy. This is precisely the process of enculturated violence that has evolved in the Middle East in relation to the Palestinian situation where humiliation and hopelessness are the daily experience of the masses. This geopolitical context has bred a "culture" of violence that is capable of generating in individuals a "self-sacrificing" desire to kill oneself for the "cause," "greater good," "higher call," or to enter "paradise" early. In the Palestinian community, approval to go on a "martyr operation" is well entrenched, as research *(15)* indicates that the level of approval for violence rises in line with the level of education, for the well-informed have been driven to the view that armed struggle is the only way out of the current situation. As can be seen in the model, these four factors or *cog teeth* are "macro" factors that are depicted as turning the *biggest*‡ *cog* "counter clockwise," as this is metaphorically speaking what happens when a community turns to violence to solve problems. It goes against the normal direction of a society. The effect of this counter-clockwise movement is to intermesh with two specific *cog teeth* or factors on the *smallest cog* that symbolize disenfranchised and/or disaffected individuals at the "micro" level of their psychological–personal system of beliefs. The two salient psychological factors that operate at this level are personal "identification" and "intensification" with a terrorist cause. It is worth noting here that this model makes a critical distinction between the seventh factor of a "brain-washing" process and the sixth factor of a "brain-hardening" process. This distinction is important as it draws attention to the subtle process whereby an individual's thinking becomes "hardened" in a certain direction willingly through their own efforts, whereas "brain-washing" as this term denotes involves a conditioning process of "systematic indoctrination that changes or undermines one's convictions" *(16)* usually by some charismatic cult leader against an individual's will into believing in a cause.¶

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‡ The three cog sizes big, middle, and small are meant to reflect the relative weighting given to each cog in this model. That is, the big cog implies how strong its four "push" factors in the sociocultural-political system are considered to be relative to the other systemic cogs in the model, whereas the middle cog of the group-organizational-network context is stronger than the small cog of the individual.

¶ Stahelski *(17)* presents a social psychological "conditioning" model of five phases in this regard. They are as follows: Phase 1, stripping away all other group member identities (depluralization); Phase 2, stripping away each member's personal identity (self-deindividuation); Phase 3, stripping away the personal identities of enemies (other-deindividuation); Phase 4, identifying enemies as subhuman or non-human (dehumanization); and Phase 5, identifying enemies as evil (demonization). Such a conditioning model may account for some individuals becoming terrorists but by itself, as with most psychological-type models, it is one-dimensional and ignores geopolitical and cultural factors.

However, this is not the point being made with regard to the sixth factor of "psychological intensification." Individuals who commit terrorist acts have already been "psychologically identified" with certain causes; hence, they are not "changing" their convictions as the brain-washing process implies. Rather, it is precisely because their convictions are pre-aligned with a potential terrorist cause that a terrorist group/organization has little if any "indoctrination" to do at this point.

As noted in the model, the seventh factor about "beliefs radicalization" is where a process of "systematic indoctrination" (brain washing) can occur for those individuals who have not yet been "psychologically identified" with a particular cause or set of grievances they perceive as unjust. In an Islamic context, this situation usually arises when young children are sent to fundamentalist religious schools where the uncritical repetition of verse after verse of the Islamic texts takes place. Such a context could be described as akin to the brain-washing process. However, in the case of adult individuals who have already been "psychologically identified" with a cause, this seventh factor of "beliefs radicalization" has more to do with reinforcing pre-existing beliefs rather than changing them. Hence, the use of the term "brain-hardening" is more appropriate to apply to these adult individuals as it implies a much more "voluntary" process because of the person's already existing strong identification with the "justness" or "rightness" of a cause to such an extent that they are attracted to and allow themselves to uncritically accept extreme radicalized worldviews preached with missionary zeal by either secular or religious exponents. In this regard, Juergensmeyer makes the salient point that no religion is immune from having advocates in their midst who push extreme fundamentalist interpretations of God and the world. Moderate interpretations of Islam, Buddhism, Hinduism, and Christianity are to be avoided along with the notion of democracy in such fundamentalists interpretations *(18)*.

This dynamic interplay of this intensification process of "brain-hardening" is apparent in Diagram 1 by the counter-clockwise momentum of the "micro" (individual) cog as it intermeshes with "intermediate" (group) cog. This allows the dynamic nature of group–organizational–network system to swing behind "individual" cogs to support the directional nature of the already brain-hardened beliefs and further reinforced by self-appointed leaders of secular or religious ideologies who relentlessly churn out extreme views that radicalize beliefs (secular and/or religious) in the direction of fundamentalists interpretations where everything involves dichotomized thinking in terms of right/wrong, black/white, good/bad, true/false, and holy/evil. Hence, the end point of the terrorism process is reached when individuals fully commit themselves by taking the step from thinking and talking about extremist views to acting on them by undergoing specific terrorist training and mission activation. As noted

in the multi-context model, this eighth factor is one of *committed activation*, and it represents the end game in this complex interwoven process of multiple factors that come together in the shaping and making of a terrorist. Note that the use of the term "decision to join" at this eighth factor point should not be understood as implying an actual formal "joining process" like signing in as a member of a club or organization. "Religious" terrorists do not so much "join" in this formal sense but rather "identify" with the use of terror tactics, as they perceive this to be the only viable way left to advance their cause. Hence, the fifth factor of *psychological identification* is the critical element in the process, regardless of how this identification was achieved either through the early formative years of indoctrination at religious schools or in later life from a newfound faith in religion as the supreme guiding principle for one's life.

The following section applies this multi-context model to "profile" the process of terrorism using data from the JI terrorist network in Southeast Asia to illuminate the utility of this model. The "statistically based" picture of the 36 JI members arrested for terrorism activities in Singapore will be used to "profile" the "process" not the "persons" *per se*.

JI TERRORIST NETWORK IN SINGAPORE

The Ministry of Home Affairs in Singapore released a White Paper on terrorism in 2003. In that publication, they identified JI as the most significant terrorist network currently operating in the Asia-Pacific region *(19)*. The Council on Foreign Relations regards JI as a militant Islamic group with strong links to al-Qaeda, which seeks to establish a pan-Islamic state across much of Southeast Asia *(5)*.

However, Gunaratna also makes the point that in so far as this Southeast Asian terrorism network is concerned, "the security and intelligence services, accustomed to collecting intelligence by technical methods, have limited high-quality information about this group"*(20)*. In 2001, the JI terrorist network was planning its most ambitious undertaking so far in the region. It could be speculated that the seemingly stunning success of the al-Qaeda attack on the twin towers in New York in September 2001 may well have inspired the JI network to up the stakes of the struggle in the Asia-Pacific region.

Thankfully, the JI plans for several attacks to take place in Singapore did not eventuate. A total of 36 members of the JI network were arrested for terrorism-related activities in Singapore in two separate operations between December 2001 and August 2002 by the Internal Security Department (ISD) of the Singapore Police Force (SPF).‖ In the first operation, 15 JI members

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‖ Data presented on JI members are collated from open source information.

Table 1
Data on First Arrests of Jemaah Islamiyah (JI) Network Members in Singapore in December 2001

Racial composition		Education level		Housing type	Terrorist training location		National service	
Malay	6	Tertiary	7	Unknown but all owned their own home	Afghanistan	8	Completed	4
Indian	4	Polytechnic	2		Malaysia	0	Exempted	11
Boyanese	1	Secondary	6		MILF trained	2		
Javanese	2	Primary	0		Unknown	5		
Arab	1							
Pakistan	1							
Total	15		15			15		15

MILF, Moro Islamic Liberation Front.
All 15 arrested were Singaporean Muslims.

were arrested by the ISD. All of these persons were served with a Detention Order that remains in place for 2 years under Section 8.1(a) of the Internal Security Act of the Singapore Government. All of these persons were Muslims and residents of Singapore. Table 1 provides data on these 15 JI members in relation to their racial composition, education level, type of housing, the location of any military training they received, as well as if they completed or were exempted from National Service[§] in Singapore.

In the second SPF operation against the JI network several months later in August 2002, a further 21 JI members were arrested. Table 2 presents similar data on these 21 members of the JI network from this operation.

Table 3 presents a composite picture of the JI members arrested in the two SPF operations across a range of variables. For most of these variables, percentages are used to provide a clearer snapshot of the nature of the JI network operating in Singapore.

As can be seen from this summary table, there are several variables that stand out as being of considerable interest in relation to profiling "terrorists"

[§] All male Singaporean and permanent residents are required to perform 2–2.5 years of National Service on the age of 21.

Table 2
Data on Second Arrests of Jemaah Islamiyah (JI) Network Members in Singapore in August 2002

Racial composition		Education level		Housing type		Terrorist training location		National service	
Malay	10	Tertiary[a]	7	Executive flat	2	Afghanistan	3	Completed	5
Indian	3	Polytechnic	3	5-Room flat	5	Malaysia	14	Exempted	16
Boyanese	3	Secondary	5	4-Room flat	14	MILF trained	2		
Javanese	3	Primary	3	All owned home		Unknown	2		
Arab	1	Unknown	3						
Pakistan	1								
Total	21		21		21		21		21

All 21 arrested were Singaporean Muslims.
a One obtained a first-class Honours Degree in Islamic Studies.

Table 3
**Summary Table of Jemaah Islamiyah (JI) Arrests for the Two
Operations—December 2001 and August 2002**

Variables	Descriptive breakdown (%)
Age	Average (39 years)
Sex	Male (100%)
Racial status	Diverse mix
Malay	44%
Indian	19%
Boyanese	11%
Javanese	14%
Arab	6%
Pakistan	6%
Religious status	Islam (100%) (most important personal value)
Marital status	Married (majority)
Educational status	Technical qualification at all levels (majority)
Tertiary qualification	39%
Vocational certificate	14%
Lower qualification	39%
Unknown	8%
Employment status	Employed (majority)
Employed full-time	87%
Employed part-time	6.5%
Not employed	6.5%
Housing status	Home owners (100%)
Socioeconomic status	Middle class (majority)
National service status	Exempted (majority)
Completed	25%
Exempted	75%
Terrorist training	Trained (majority)
Afghanistan	31%
Malaysia	39%
MLF trained	11%
Unknown	19%
Recruitment setting	Religious schools (100%)

who belong to the JI network in Singapore. The picture that emerges is that
such "terrorists" are in the main *married, middle class, home owning, early
middle aged, employed men* with *technical qualifications* and a *devout desire*
for a deeper religious experience as evidenced by their attendance at *religious*

schools and willingness to undergo *terrorist training*. Such a profile is entirely consistent with the bulk of the research literature on terrorism that, by and large, "terrorists" are very "normal" people, especially in relation to those who identify with the "religious" or fourth wave of terrorism the world is currently experiencing.

To underscore the point, these "terrorists" from a profiling and behavioral analysis perspective do not stand out and in fact will appear as the average person on the street with the only discernible thing that sets them apart from the crowd is that they take their religion, in this case Islam, very seriously. This is the "mindset" of a devout follower not a fanatic. Although it could be argued that some "devout" followers may become "fanatical" in seeking to apply their beliefs, this type of "fanaticism" would be more appropriately termed an obsessive–compulsive drive infused with religious significance rather than a classic psychiatric type "insane" or personality disorder. Needless to say, offender profiling of any type is not good at reading people's minds.

When this JI "terrorist profile" is considered alongside the "terrorism process" as profiled on the systemic model, some interesting findings emerge. In that, the aggregated profile of a JI terrorist describes is one of individuals who are predominately married, middle-class, middle-aged, employed, home-owning, technically qualified, religiously devout men who attended religious schools and underwent terrorist training. This profile is entirely consistent with the systemic terrorism process model as depicted. In fact, a cogent argument can be made that the intermeshing of the eight factors of the model is not only consistent with this "terrorist profile" but predictable using this multi-context model.

The *implicit assumption* of this terrorism model is that *context determines the response parameters of individuals.* That is to say, any context, be it a small group context or a larger cultural or societal context, not only constrains but also shapes at both conscious and unconscious levels of awareness and hence determines in this sense what is the tolerable range or parameter of responses an individual should make in such a context to remain a socially or culturally "acceptable" member of that context.

Therefore, one should look at the "JI terrorist profile" as being a product of context-constraining and context-shaping factors that individuals have over time incorporated as sense-making and meaning-creating responses to their lived experience. In this light, such a context-constrained and context-shaped individual has available only a limited range of acceptable parameters or choices to make in each of these multi-leveled contexts. Thus, from this perspective, the relevance of profiling the "process" of terrorism rather than the terrorist makes for better logic on the basis of the existing research literature available on terrorism.

To illustrate this logic, under the right sociocultural and/or sociopo-litical/geopolitical circumstances (with any combination of factors 1, 2, 3, and 4—"macro-context" level), an individual who finds religion, or for that matter any ideological system, appealing to their mind by supplying ready-made answers to the questions of life and thereby providing a sense of meaning and purpose to their existence will begin (factors 5 and 6—"micro-context" level) to psychologically identify more with this religiously and/or ideologically inspired worldview and seek out forums (factors 7 and 8—"intermediate-context" level) in which to psychologically intensify their self-confirming, meaning-infused worldview. Hence, by understanding and applying this multi-context systemic model of the terrorism process, it comes as no surprise to see the "profile" of a JI terrorist emerge as it does.

A further intriguing question is: is this "profile" of the JI operatives caught in Singapore typical of other Islamic terrorist networks in other parts of the world? Or, is this "profile" specific to Asian Islam? What little research on Asian-style terrorism that does exist *(21)* seems to suggest is that there are a few factors in this JI profile that can be generalized to other religiously inspired terrorist groups. Consider, for example, the common denominator that the educational qualifica-tions of the majority of JI operatives were of a "technical nature." Some possessed degrees in electrical engineering and information technology, whereas at the vocational level the qualifications were mainly in metal machining and mainte-nance fitting. Research has found that this educational emphasis on "technical knowledge" among "fundamentalists groups" of all faiths is a very common trait or characteristic. The speculative rationale for this finding is that fundamen-talists who do hold some tertiary or professional qualification are more likely to come from fields like applied sciences and/or possess technical and bureaucratic qualifications that "predispose" them to " . . . read scriptures like engineers read blueprints—as a prosaic set of instructions and specifications" *(21)*. In this sense, it could be argued that one of the weaknesses of the higher education system is that in general people who opt for "technical knowledge" type diplomas and degrees have little if any real exposure to social science content with its emphasis on "critical thinking" and the inherent dangers in thinking in black-and-white, true/false versions of reality.

CONCLUSIONS

This chapter addressed the issue of the relevance of the offender/criminal profiling paradigm to terrorists. It is argued that there are three main stumbling blocks inherent in the profiling paradigm that make its applicability to profiling

terrorists problematic, quite apart from the definitional and conceptual difficulties apparent in the field of terrorism itself. In essence, the use of "psychologically oriented" approaches based on clinical and behavioral assessments appears to be of very limited use when applied to terrorists, as no such definitive "terrorist personality" has been found to exist in the scholarly literature. The apparent "normal profile" of terrorists from a psychological perspective makes their detection extremely difficult using this type of yardstick.

The only qualification to this finding is that when terrorists are on a mission, some may "give off" telltale signs of stress, which could be behaviorally detected by observant, well-trained law enforcement/security personnel who may happen to be present at the time and location of the carrying out of the terrorism mission. However, this is a hit-and-miss approach that probably has little better odds of detection than random chance.

The other main orientation with the profiling paradigm is the "statistically based" approaches. Statistical approaches do have some applicability to spotting terrorists, but they have to be treated with caution. Statistics create databases that generate watch lists of possible terrorist suspects. However, the main flaw with these types of statistical approaches is that they are based on skewed samples of already known or captured terrorists; hence, they create "stereotypes" like "all Taliban terrorists have beards." Such simplistic statements often do more harm than good and at worst misdirect investigative and intelligence gathering efforts and resources. This is especially important to be cognizant when interpreting statistically based findings given the "normality" of a terrorist profile as discussed previously.

All things considered, transferring the offender profiling paradigm to terrorists is neither simple nor necessarily helpful and could in fact be dangerously misleading. Hence, in light of this conclusion, the position taken in this chapter is that it is more fruitful to shift the focus of the profiling paradigm by engaging in "process" profiling rather than "person" profiling when it comes to dealing with terrorism.

To illustrate the potential usefulness of profiling the terrorism "process," the author developed a multi-context model to show how various factors operating at different levels and in different but intermeshing contexts can come together to produce a process of systemic terrorism. Data from arrested JI terrorist network members in Southeast Asia were used to demonstrate the utility of this multi-context model. The key benefits of the model are that it fosters a wider and deeper appreciation and understanding of how terrorism as a "systemic phenomenon" works and on that basis is able to assist in "narrowing the scope" of investigative and intelligence activities as well as providing "useful strategies for interviewing" suspected terrorists. Both of these benefits

are also the primary aims of the offender/criminal profiling paradigm. The significant point to note about arriving at similar goals is the different road taken to profiling the "process" rather than the "person."

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Chapter 9

Geographic Profiling of Terrorist Attacks

Craig Bennell and Shevaun Corey

Summary

Through the use of a computerized geographic profiling system and two case studies, this chapter examines the applicability of geographic profiling in the context of terrorist attacks. The findings of this examination are somewhat mixed with a final discussion of how principles of geographic profiling may be better developed and applied to terrorism.

INTRODUCTION

Terrorism is defined by the Federal Bureau of Investigation (FBI) as "…the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives" *(1)*. Since the terrorist attacks that occurred in the United States on September 11, 2001, attempts have been made to develop more effective and efficient strategies for combating terrorism *(2)*. Many of the procedures that have been proposed deal directly with trying to prevent future terrorist activity by identifying the whereabouts of known terrorists. This chapter presents a preliminary attempt at contributing to this effort by examining whether a procedure known as geographic profiling can be used to identify the location of terrorist hideouts based on an analysis of attack sites. Geographic profiling already assists with similar tasks in other settings,

namely serial crime investigations, by exploiting identifiable and consistent spatial patterns exhibited by serial offenders in order to isolate probable home locations *(3)*. If such a task could be accomplished with a relatively high degree of accuracy in the military or intelligence domain, it would undoubtedly be beneficial to the current war on terrorism.

Whether it is possible to use geographic profiling techniques successfully in this context will largely depend on whether the spatial behavior of terrorists is similar to that of serial criminals. This issue has not been extensively explored to date [however, see *(4)*]. There certainly appear to be some similarities between the serial criminal and the typical terrorist (e.g., they both commit multiple offenses), but there are clearly many differences as well (e.g., they commit their offenses for different reasons). Thus, we must examine what it is about serial criminals that allows them to be geographically profiled with such a high degree of accuracy and then make a determination as to whether terrorists, of one sort or another, exhibit similar features. If there is sufficient similarity between the two types of offenders, and we will argue later in this chapter that on some occasions there is, then it should be possible under these conditions to accurately profile the terrorist. Before examining these issues in depth, however, it is first necessary to provide a brief introduction to the field of geographic profiling. More specifically, a discussion of computerized geographic profiling systems is warranted, because these systems currently appear to be a popular method for predicting the home location of an offender based on his or her crime site locations.

A Brief Introduction to Geographic Profiling

In its most basic form, geographic profiling involves using knowledge about the relative locations of an offender's crime sites to predict the highest probable location of his or her residence (or some other anchor point, such as a work place) *(3)*. Many geographic profilers are careful to point out that geographic profiling does not solve crimes *(3)*. Rather, it is more commonly conceptualized as a way of managing police information in order to support serial crime investigations. For example, one common application of geographic profiling is to use the prediction of an offender's likely home base in order to prioritize suspects. This is particularly useful in serial crime investigations that result in large suspect pools. More specifically, the police can plot the respective home locations of a list of potential suspects on a map along with the geographic profile and rank order the suspects according to their proximity to the predicted home base (the closest suspect would be considered first, etc.) *(3)*.

Although there were numerous instances of geographic profiling predictions being made in the 1970s and 1980s *(5–7)*, the early 1990s marked the emergence of the field of geographic profiling as we currently know it. During this period, computerized geographic profiling systems were developed, which allowed such predictions to become more systematic and sophisticated *(3,8,9)*. Regardless of the specific computer system being used, the basic operating principles of these computerized geographic profiling systems are the same *(9)*. In essence, mathematical functions are applied to produce a probability surface (Figure 1) that demonstrates the likelihood of an offender residing at various geographic locations around the area where the crimes have been committed *(3)*. On the basis of several decades of offender spatial behavior research *(10)*, the mathematical functions are typically computed from large data sets of offenses to reflect the distribution of distances between offender home and crime locations. These functions typically take the form of a distance decay
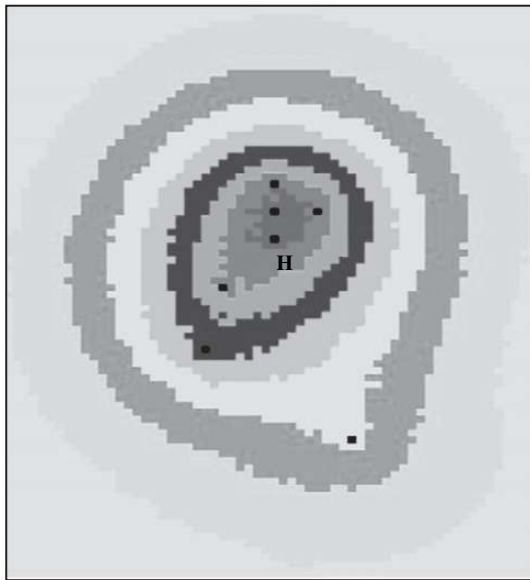
Fig. 1. A computerized geoprofile. The different bands (represented here by different shades of gray) indicate the likelihood that an offender lives in a particular geographic location (the area of highest probability is centered on the cluster of four crimes in the center of the profile). The eight crime sites in this particular crime series are indicated by black dots, and the home location of the serial offender is indicated by H. In this case, the offender's home is located near the area of highest probability, and therefore, the hit percentage (see "Case Studies") would be relatively low (indicating an accurate profile).

function*(11)*, which in profiling terms reflects the fact that the probability of an offender residing at a particular geographic location decreases as that location gets farther away from the offender's crimes. The shape of the distance decay function does vary from system to system, but the underlying premise is the same: serial offenders tend to commit their crimes close to home, and, as a result, it should be possible to analyze their crime sites and identify a likely home location. The functions are applied to each crime site, and the locations around the crime sites are assigned a probability reflecting the likelihood that the offender resides in that particular location. Where functions overlap, the probabilities are summed, resulting in higher probability values for those areas. Each location on the map is then assigned a color according to its level of probability (e.g., the locations with the highest probabilities are assigned the color red), resulting in a "geoprofile" that can be used by the police to structure their search for suspects *(3)*.

COMPUTERIZED GEOGRAPHIC PROFILING ASSUMPTIONS

One question that emerges is: How can these computerized geographic profiling systems be expected to reliably predict serial offender's home locations? The answer to this question is relatively simple. These systems can produce accurate profiles because serial offenders are surprisingly structured, at least in terms of their spatial behavior *(12)*. For example, research has repeatedly shown that the majority of serial offenders travel relatively short distances from home to commit their crimes *(3,13,14)*. Research has also demonstrated that the home location of many serial offenders can be found within their area of criminal activity (i.e., their crimes literally surround their home; referred to as a marauding pattern) *(15–17)*. These are the primary reasons for the effectiveness of geographic profiling. Indeed, when serial offenders behave in ways that contradict these findings (i.e., by exhibiting severe directional biases in their travel behavior), geographic profiling will typically be ineffective *(3)*.

Thus, according to many geographic profilers, for computerized geographic profiling systems to achieve their maximum potential, they must only be used under certain conditions. Although there is some debate about the specific nature of these conditions, there seems to be some level of agreement on the importance of five assumptions. Essentially, for computerized geographic profiles to be accurate

1. the profile must be based on multiple crime sites,
2. the crimes must be linked to the same offender,
3. the offender committing the crimes cannot be commuting into the area of criminal activity,

4. the distribution of suitable targets (i.e., target backcloth) must be relatively uniform around the offender's home, and

5. the offender cannot move anchor points (or operate from multiple anchor points) during his or her crime series *(3)*.

These same five assumptions will no doubt play a critical role in determining whether geographic profiling will be successful in predicting the anchor points of terrorists based on the spatial pattern of their attacks.

APPLYING COMPUTERIZED GEOGRAPHIC PROFILING TO TERRORIST ATTACKS

Given that certain factors are known to lead to accurate geographic profiles in the investigative context, the first step in determining whether geographic profiling will be successful when applied to terrorist activity is to consider whether the five assumptions discussed in "Computerized Geographic Profiling Assumptions" holds true for the majority of terrorist incidents. From a review of the literature, it seems to be the case that some of these assumptions will be routinely met while the majority will be violated, at least for certain types of attacks.

Assumptions that will Frequently be Met

It seems likely that the first two assumptions will frequently be met in the terrorist context. In other words, multiple attacks are usually committed by terrorists, and these attacks will typically be able to be linked to one another. In effect, our review of the terrorism literature did not turn up terrorist groups who committed only one or two attacks. Although it was difficult to estimate the exact number of attacks committed by some terrorist groups, the majority of them clearly commit a sufficient number to make geographic profiling a feasible option. Indeed, most of the terrorist groups we reviewed exceeded the thresholds set by Rossmo *(3)* and Levine *(18)* of 5 and 10 crimes, respectively. For example, the Revolutionary People's Struggle, a terrorist group in Greece that will be discussed in "Case Study 2: The Revolutionary People's Struggle", is known to have been responsible for over 200 bombings from 1975 to 1995 *(19)*. Even if we focus on attacks committed by specific individuals within these terrorist groups, as we will do in our analysis, the assumption of multiple attacks is frequently met.

In terms of accurately linking terrorist attacks to the group responsible, it will often be the case that the nature of the target itself and the way in which the target is attacked will allow such linkages to be made [in a similar way to how criminal investigators use an offender's *modus operandi* (MO) to

link crimes].* In addition, unlike the typical serial offender, terrorist groups are often known to officially claim responsibility for their actions, generally in the form of public announcements *(1,20)*.† According to Segaller *(1)* and Drake *(20)*, terrorist groups tend to profess their acts for several reasons, including a desire to propagate their beliefs or to justify their actions to the public. Such claims would make the task of linking terrorist attacks together relatively straightforward, so long as there was sufficient evidence that the group taking responsibility was not being deceptive about their involvement.

Assumptions that will Only Sometimes be Met

The other three profiling assumptions, that targets will be uniformly distributed in space, that marauding behavior will be evident, and that anchor points will remain stable will not likely be met in the terrorist context as frequently as the first two assumptions. However, it is expected that these assumptions will be met under certain conditions. For example, with respect to the uniform distribution of targets around the offender's anchor point, this will depend to a large extent on the terrorist group under consideration and the specific objectives that group is trying to achieve when selecting targets. Consider a domestic terrorist group driven by anarchism (i.e., an opposition to one group of people ruling over others). This group will be relatively non-specific in its selection of targets because its primary goal will likely be to overthrow the existing system of government and business *(22)*. Potential targets will abound, at least in urban areas, and be uniformly distributed in space. In contrast, terrorists with a more specific agenda, extreme anti-abortionists for instance, will have a target selection strategy that is more heavily influenced by target backcloth *(23)*. Target distribution will, in turn, influence the likelihood that a terrorist will commute to his crimes. Compared with a terrorist group with non-specific target requirements, groups with a specific target-selection strategy will be more likely to exhibit commuting behavior.

In terms of anchor point stability, several issues must be considered in the context of terrorism, which typically do not have to be considered in serial crime

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* If it does turn out to be the case that geographic profiling in the terrorist context is more feasible when the focus is on attacks committed by specific individuals within terrorist groups, some sort of MO or signature analysis may have to be conducted to link crimes to a specific offender (i.e., knowing that a particular terrorist group carried out the attacks may not be sufficient).

† There are some instances, although these appear to be in the minority, where terrorist groups do not claim responsibility for their actions and in some cases they positively deny acts despite strong evidence of their involvement *(21)*. In these situations, accurately linking terrorist attacks together will obviously prove more difficult.

investigations. For example, although not a serious consideration in criminal investigations, it must always be kept in mind that many terrorist groups consist of a widespread network of membership *(20)*. In these cases, geographic profilers would be faced with a confusing array of multiple offenders, potentially living in different areas and possessing multiple anchor points, with each offender contributing to the attack in some unknown, but potentially important way (e.g., by assisting with the actual attack, by providing intelligence related to possible targets, by supplying weapons or offering hideouts). Clearly such circumstances are not ideal for geographic profiling purposes.

CASE STUDIES

In this section, we will present two case studies for analysis, each involving a different terrorist group—*Action Directe* and *The Revolutionary People's Struggle*. These groups were chosen because of the availability of information about them within the public domain. We will begin each case study by providing a very brief overview of the terrorist group, in terms of their history, general philosophy, target preferences, and typical actions taken. We will then proceed to discuss one particular series of terrorist attacks linked to a member of each group (these series were also chosen because of the availability of data) and will present the results from a geographic profiling analysis that was performed on the relevant spatial data for that attack series. The information relating to each of the terrorist groups and the specific series of attacks under consideration here was collected from a wide range of publicly available sources, including journal articles, books, and webpages.

All of the geographical analyses presented here were carried out using the computerized geographic profiling system known as DRAGNET *(8)*. This system relies on an empirically derived distance decay function, which is applied around the terrorist attack sites in the manner described in "A Brief Introduction to Geographic Profiling".‡ The system accepts as input a series of $x–y$ geocoded coordinates, indicating the sites of the terrorist attacks, and provides as output a probability surface indicating the likelihood that the terrorist resides at particular geographic locations. The hit percentage¶ for each

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‡ The distance decay algorithm used by DRAGNET to perform its calculations was actually derived from a sample of American serial killers and takes the form of a negative exponential function *(8)*. As discussed later in this chapter, this function may not necessarily be appropriate when applied to terrorist attacks.

¶ Hit percentage is calculated by rank ordering (from largest to smallest) the pixels included in the geoprofile based on their probabilities and determining the percentage of pixels that need to be searched before arriving at the pixel containing the offender's anchor point *(3)*. The smaller the hit percentage the more accurate the profile.

case study is presented in order to quantify the accuracy of the profile. The limited data and scant research on terrorism precluded the inclusion of qualitative profiling considerations (e.g., the potential impact of physical barriers on terrorist movement).

CASE STUDY 1: ACTION DIRECTE

Action Directe, was a communist and socialist terrorist group that originally focused its attacks on the French state in conjunction with the communist movement in France (they also pursued some Israeli targets) *(1,19)*. After the election of Francois Mitterrand in 1981, a socialist Prime Minister, their ideology changed to encompass a new focus on anti-Americanism. *Action Directe* was responsible for acts of both domestic and international terrorism. However, its base of operation was mainly in France, with few attacks occurring outside of that country. The group's targets included businesses, airlines, airports, and a small number of government, diplomatic, and educational institutions *(1)*. The group's primary means of attack was the use of explosives, although there were several occasions on which the group carried out armed robberies and assassinations (Rene Audran in 1985, the manager of French arms sales, and Georges Besse in 1986, the head of the Renault Corporation) *(1)*. Following the assassination of Georges Besse, the main leaders of the group were arrested, thereby terminating the existence of the group.

Although *Action Directe* is responsible for an estimated 50 attacks, within the context of this chapter, we are going to examine a series of attacks linked to one member of *Action Directe* who worked and stored explosives at the Guinean Embassy in Portugal. The address of the embassy is R. Alcolena 17, Lisbon, Portugal 1400. The following series of attacks are of interest[||]:

1. February 23, 1985—The rear entrance of the Marks and Spencer store was bombed at 6–8 Rue des Mathurins, Paris, France 75009.
2. April 3, 1985—The Israeli Leumi Bank was bombed at 35 Boulevard des Capucines, Paris, France 75002.
3. April 3, 1985—The National Immigration Office was bombed at 44 Rue Bargue, Paris, France 75015.
4. July 21, 1986—The headquarters of the Organization for Economic Cooperation and Development was bombed at 2 Rue Andre Pascal, Paris, France 75775.

As can be seen in the geoprofile presented in Figure 2, DRAGNET was not able to accurately identify the location of this specific anchor point because

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[||] Information about this series of terrorist attacks came from the NMIPT (http://www.mipt.org/) *(19)* and both volumes of *International Terrorism in the 1980s* by Mickolus et al. *(24,25)*.
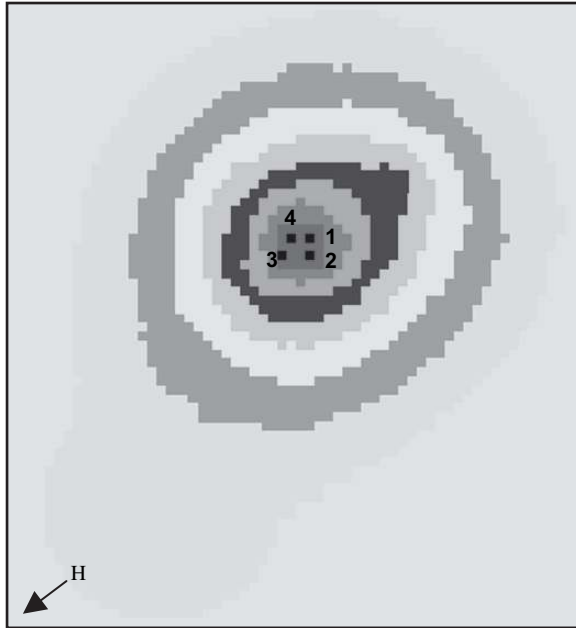
Fig. 2. A geoprofile of the *Action Directe* attacks. The locations of the terrorist attacks are indicated by black dots (the numbers next to the dots indicate the temporal sequence of the attacks), and the terrorist's anchor point is indicated by the letter H.

the offender traveled far distances to carry out his attacks (from Portugal to France). More specifically, the hit percentage in this case was 100% (indicating that the terrorist's anchor point was not located in any part of the prioritized area). It is possible that the offender did have other anchor points (e.g., a residence or place of work) in closer proximity to the attack sites, and these anchor points may be included in the search area. However, there was no indication of this in the data that we collected.

CASE STUDY 2: THE REVOLUTIONARY PEOPLE'S STRUGGLE

The *Revolutionary People's Struggle* (*Epanastatikos Laikos Agonas—* ELA) was a leftist group, which grew out of the resistance to the Greek military government that controlled Greece from 1967 to 1974. The ELA was an anti-capitalist, anti-imperialist, and anti-American group whose goal was to encourage revolution against the government of Greece and to remove US military bases from its country *(19)*. Their targets included mainly businesses, diplomatic and government facilities, and the military of both Greek and

American origin. Throughout its existence, the ELA detonated over 200 bombs *(19)*. The group comprised over 70 people nation-wide, and its attacks were mainly aimed at property destruction. The group terminated in 1995, but its members have gone on to join or create other Greek terrorist groups.

Within the context of this chapter, we examine a series of attacks linked to one member of ELA. During this series of attacks, the member lived at 12 Kyknou St., Palaio Psychico, Greece 15452, where he was arrested in February 2003. The series on which we will focus includes the following[§]:

1. October 14, 1976—The Athens office of the Siemens Corporation was bombed at 8 Artemidos St., Athens, Greece 15125.
2. April 27, 1982—A firebomb was put in a car belonging to a US Embassy secretary in the parking garage of an apartment at 15 Fokylidou St., Athens, Greece 10673.
3. June 2, 1982—Two offices of the American Honeywell Corporation were bombed at 46 Sfingos Avenue, Athens, Greece 11745.
4. June 2, 1982—A car belonging to the Bulgarian Embassy was bombed at 33 Kallari St., Psichiko, Greece 15453.
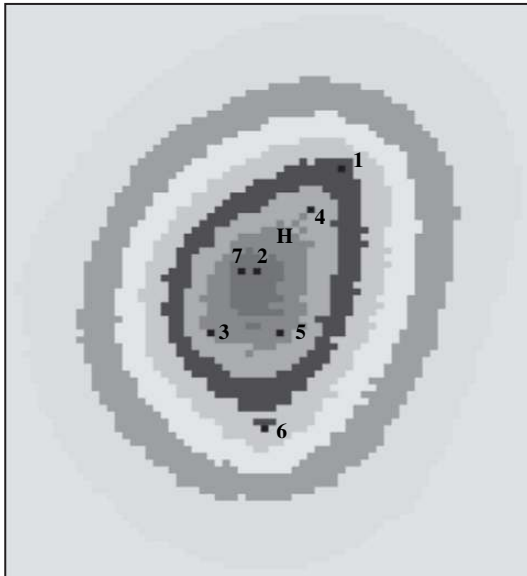
Fig. 3. A geoprofile of the *Epanastatikos Laikos Agonas* attacks.

[§] Information about this series of terrorist attacks came from the NMIPT (http://www.mipt.org/) *(19)* and both volumes of *International Terrorism in the 1980s* by Mickolus et al. *(24,25)*.

5. July 3, 1982—The Chase Manhattan Bank was bombed at 3 Korai St., Athens, Greece 10564.
6. July 1, 1985—A bomb was placed in a car in the parking lot of the Apollon-Pallace Hotel at 10 Agiou Nikolaou St., Kavouri, Athens, Greece 16671.
7. March 18, 1986—A bomb in the underground garage damaged the entrance to the Greek-American Association at 22 Massalias St., Athens, Greece 10680.

As can be seen in the geoprofile presented in Figure 3, DRAGNET was able to identify the location of the anchor point in this series with a reasonable degree of accuracy. The hit percentage for this analysis was 14%. Unlike the case with *Action Directe*, this result was obtained because the offender displayed a distinct marauding pattern of spatial behavior.

CONCLUSIONS

The purpose of this chapter was to present a general framework for understanding whether geographic profiling, as it is commonly practiced in serial crime investigations, has any potential for success when used to identify the location of unknown terrorists. As is the case in the investigative domain, the discussion presented in this chapter suggests that geographic profiling may be possible in the terrorist context, but only under certain conditions. The case studies that were undertaken indicate that one of the reasons for this is that fundamental profiling assumptions can at times be violated when terrorists commit their crimes. For example, in the case of *Action Directe*, the terrorist carrying out the attacks exhibited extreme commuting behavior, traveling from one country to another. Under these circumstances, conventional geographic profiling techniques will be of limited utility. However, when geographic profiling assumptions are met, as in the case of ELA, accurate geographic profiles can be constructed. These results suggest that more research needs to be conducted to determine the exact conditions under which geographic profiling will be successful in cases of terrorism. Such research would have the potential to inform decision-makers in the military and intelligence communities as to the circumstances under which they should rely on geographic profiling techniques.

Given the geographic profiling assumptions discussed previously, this technique will most likely be of use in domestic terrorism, as opposed to international terrorist activity, and current estimates suggest that a sizable proportion of all terrorist attacks are of the domestic type. For example, the FBI has indicated that there have been many recent cases of terrorist acts in the United States committed not only within US borders but also at a very local level *(26)*. One relatively recent case involved a series of arsons that occurred in Phoenix, Arizona. The targets were new homes being built near the North Phoenix Mountain Preserves and a group called the *Coalition to Save the Preserves*

claimed responsibility. In reality, no such group existed. Only one man was involved in the terrorist attacks and, in 2001, Mark Warren Sands was charged and pled guilty to the crimes *(26)*. Given the proximity of Sands' residence to the arson sites (he resided in Phoenix), it is likely that a geographic profile of the attack locations would have allowed the authorities to prioritize Sands as a potential suspect early on in the investigation. Along the same lines, the types of insurgent attacks that are currently taking place within the cities of Iraq and Afghanistan (in addition to many other countries) may be particularly conducive to geographic profiling (because of their local nature). Work is currently underway by other researchers to examine this possibility *(4,27)*.

Given the potential utility of geographic profiling in cases of domestic terrorism, it should be pointed out that the results reported in this chapter likely underestimate the value of this technique. There are at least two reasons why this is true. The first relates to our use of the distance decay function as a model of spatial behavior. As indicated previously, given the many differences between serial offenders and terrorists (e.g., in terms of their underlying motivations to offend), it is likely that specially derived models of terrorist behavior will be required before geographic profiling can reach its full potential in this context. In other words, a decay function derived from a sample of serial killers (as used in this chapter) may not adequately capture the structure inherent in the spatial behavior of terrorists (e.g., the rate of "decay" exhibited by terrorists may differ in a significant way from what is typically found for serial offenders). Indeed, the necessary model may not even take the form of a distance decay function.**

The second reason why the current results may underestimate profile accuracy is that no qualitative analysis was undertaken for any of the profiles presented in this chapter. An important component of most geographic profiles is a qualitative analysis of factors that could be used to refine the quantitative profiling prediction produced by the computer system *(3)*. According to Rossmo *(3)*, such an analysis typically includes, but is not limited to, an examination of how an offender's spatial behavior may have been influenced by

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** Some people have argued that, even when describing the spatial behavior of serial offenders, distance decay models are inappropriate. For example, Levine and Associates *(9)* argued for the use of travel demand models in these situations. Unlike distance decay models, travel demand models can take into account (i) factors associated with the person doing the traveling (e.g., a person's ability to travel), (ii) factors related to the point of destination (e.g., how attractive it is to the traveler), and (iii) costs associated with the travel (e.g., how much time it takes to make the trip). Models such as these might prove more productive when profiling terrorists.

1. victim activities and schedules,
2. physical or mental barriers,
3. zoning and land use,
4. transportation routes,
5. neighborhood demographics,
6. media coverage of the crimes, and
7. police presence.

An analysis of such factors was not possible within this chapter because of a lack of detailed data, but such an analysis must be carried out before any firm conclusions can be reached about whether geographic profiling techniques have the potential to be effective.

Having said all of this, given that we found at least some support for geographic profiling in this chapter, it is perhaps worthwhile to consider how this technique could be used in the terrorist context if it were to receive further empirical support in the future [see *(4)* for some emerging support]. As mentioned briefly in "A Brief Introduction to Geographic Profiling", geographic profiling is typically used as an information management tool in the investigative context *(3)*. For example, a geographic profile may allow a police force to select areas for surveillance operations, prioritize suspects based on postal codes, establish patrol saturation efforts, optimize door-to-door canvasses, identify ideal areas for media blitzes, systematize DNA sampling, and so on *(3)*. Nearly all of these applications also have potential value in the context of terrorism, and they would likely contribute to a more efficient investigation (e.g., by using the profile to focus on high probability suspects living near the prioritized search area) and better intelligence (e.g., by using the profile to identify canvassing areas where the generation of useful tips will be maximized). Of course, many more applications would be case specific and could be determined best by the front-line workers involved directly in the analysis of the attacks.

ACKNOWLEDGMENTS

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PART III

LEGAL AND POLICY CONSIDERATIONS FOR CRIMINAL PROFILING

Chapter 10

Criminal Profiling as Expert Evidence?
An International Case Law Perspective

Caroline B. Meyer

Summary

This chapter will focus on international case law concerning criminal profiling and the legal framework of (novel) evidence admission. Various cases from US, Canadian, Australian, UK, and German courts will be considered to show how they legally evaluate criminal profiles offered as evidence or, in the case of Switzerland, how such profiles would presumably be treated. It is argued that criminal profiling is currently with good reason failing the legal tests for admissible expert evidence and that judges should therefore not admit criminal profiles, not even as circumstantial evidence.

INTRODUCTION

In today's rapidly changing and constantly evolving society, scientific, technical, and many other advances are being made at an historically unprecedented pace. Forensic science has burgeoned, and courts have become increasingly reliant on expert evidence. New techniques have often ensured the conviction of the guilty and the acquittal of the innocent and cast light on crimes, the truth of which might otherwise have remained undiscovered. However,

even well-qualified experts are not infallible, and their proposed evidence will sometimes reflect the fact that their field of expertise is fraught with considerable flaws. The courts must therefore exercise constant vigilance to ensure that they are not unwittingly misled.

Criminal profiling represents a method for identifying general but distinguishing personal characteristics and psychological personality traits of a yet unknown perpetrator from prior victim–offender interactions, crime scene analysis, geographical analysis, physical evidence, and victimology in an ongoing or closed investigation to help law enforcement direct their investigation and allocate their resources efficiently *(1)*, which has also been termed "what to why to who" *(2, pp. 865,866)*. It is used to reveal information regarding the unknown offender's age, sex, race, educational level, marital status, intelligence, arrest history, military history, family background, social status and interests, socioeconomic level, residence in relation to the place of the crime (in geographical profiling), personality characteristics, and description of vehicle, and/or regarding interview tactics and techniques *(2, p. 866)*. It is to be sharply distinguished from unacceptable racial profiling *(3,4; 5, p. 118)*.

The historical roots of criminal profiling in the United States and Europe have been discussed elsewhere *(1)*. Many European countries have now developed their own approaches to criminal profiling and established specialized academic research institutions and trained police units *(1,6)*, for example, the German Bundeskriminalamt *(7,8)*, implementing the first quality standards in 2003 *(9,10)*, as well as Austria *(11)*, Scandinavia *(12)*, and the United Kingdom *(13)*. Switzerland has only recently adopted ViCLAS, the computerized Violent Crime Linkage Analysis System, and is now training its own case analysis specialists *(1,14,15)*.

Despite the significant number of perplexing issues proponents of criminal profiling are facing, often prosecutors have been introducing profilers and profiles in court as evidence, mostly in North America *(16–19; 20, p. 191)*, but also in Canada, Australia, the United Kingdom, and Germany. Of course, the legislature, judges, and legal scholars have always dealt with emerging areas of science and other fields of knowledge, some of them ground-breakingly useful and legally admissible like DNA analysis, others (internationally) inadmissible "junk science" like the "testimony" of psychics or astrologers and therefore are constantly challenged to determine whether new techniques, scientific or not, meet established standards for admission of evidence or whether the standards themselves might need adaptation. So far, surprisingly few commentators have touched on the legal aspects of criminal profiling as expert evidence.

CRIMINAL PROFILING AS EVIDENCE? A SAMPLE OF INTERNATIONAL CASE LAW

The United States of America

EXPERT EVIDENCE ADMISSIBILITY: SUPREME COURT STANDARDS AND FEDERAL RULES OF EVIDENCE

Criminal profiles are mostly introduced in criminal court by the state in the form of expert evidence *(21)*. Judges who have to determine admissibility are then confronted with the difficult task of dealing with profiles based on a fluid conglomerate of major and minor theoretical and practical bodies of knowledge, which are complex and not yet homogenous, and with measuring it against the applicable legal standards. Judges face an enormous responsibility deciding on admissibility, as their decision to admit or exclude profile evidence may ultimately significantly influence the outcome of a particular case and set a precedent for other courts when they are required to deal with the same new field *(22)*.

Although expert evidence in general existed well before 1923 and judges apparently had until then just inquired about the expert's qualifications ("[a]s is well known, the ancient view of all expert testimony was that the expert's mere opinion was to be accepted or rejected wholly on the reputation and qualifications of the witness," *23, p. 489*), and whether the offered knowledge was beyond the common juror's range of knowledge *(23)*, that year's Supreme Court case of *Frye v. United States (24)* set new rules on the admissibility of (scientific) expert evidence in general. The defendant, who was accused of second-degree murder, attempted to introduce as evidence the results of a "systolic blood pressure deception test," a precursor to the polygraph test, to determine his innocence. It was held by the US Supreme Court on appeal from the Supreme Court of the District of Columbia that if a piece of offered evidence was rooted in a new or developing field of science, it shall not be admissible until the relevant scientific community has accepted it as reliable:

> When the question involved does not lie within the range of common experience or common knowledge, but requires special experience or special knowledge, then the opinions of witnesses skilled in that particular science, art, or trade to which the question related are admissible in evidence . . . Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in its twilight zone the evidentiary force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs. *(24, p. 1014)*

The court reasoned that the systolic blood pressure deception test had not yet gained "such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made" *(24, p. 1014)*.

This general acceptance test has faced ongoing criticism, for example, regarding the imposition of a factual waiting period while new theories and techniques gain acceptance or for being too liberal because of the variable definition of the breadth of a scientific field *(25)* and because this was a very lenient standard, as experts could be found who would testify that a theory was "generally accepted" *(26, p. 224)*. Furthermore, the enactment of the Federal Rules of Evidence in 1976 (and adopted state Rules of Evidence; *21, p. 255*) led to a slow decline of the Frye test standard especially in federal courts *(27)*.

The Federal Rules of Evidence of 1976, in Article VII (governing the admissibility of expert and opinion testimony), Rule 702, amended and effective since December 1, 2000 *(28)*, did not perpetuate the strictures of the Frye test *(29)*:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

A trilogy of Supreme Court decisions, *Daubert v. Merrell Dow Pharmaceuticals, Inc. (30)*, *General Electric Co. v. Joiner (31)*, and *Kumho Tire Co. v. Carmichael (32)*, (re)defining the legal rules governing evidence admissibility, had led to the amendment of Rule 702 in 2000 *(27)*. In Daubert, the claimants suffered from limb reduction birth defects and sued Merrel Dow, the manufacturer of a morning sickness drug their mothers had taken, and claimed that the drug had caused their birth defects. First, the court held that the "general acceptance" test of Frye was superseded by the Federal Rules of Evidence of 1976, which had also been enacted to lower legal barriers for expert testimony *(30, p. 594)*, and thus general acceptance in the scientific community was not necessarily a precondition to the admissibility of scientific evidence under the Federal Rules of Evidence. Second, the court concluded that Rule 702 placed appropriate limits on the admissibility of evidence that was purportedly scientifically based by assigning to the trial judge the task of ensuring that an expert's testimony both rested on a reliable scientific foundation and was relevant to the task at hand. This entailed a preliminary assessment of whether

the reasoning or methodology underlying the testimony was scientifically valid and of whether that reasoning or methodology could be properly applied to the facts in issue. Noting that the inquiry was a flexible one, the Supreme Court then outlined several factors that judges may consider when evaluating whether the underlying reasoning or methodology was scientifically valid:

(1) whether the expert's theory or technique is falsifiable and has been tested *(30, p. 2796)*,
(2) the reliability of a procedure and its potential rate of error *(30, pp. 2796,2797)*,
(3) whether the theory or technique has been subjected to peer review *(30, p. 2797)* and whether the results have been published *(30, p. 2797)*, and
(4) in partial accord with the Frye test, whether the expert's methods and reasoning enjoy general acceptance in the relevant scientific community *(30, p. 2796)*.

These four factors were not enumerated as an exhaustive list, and it was then largely left to case law to clarify the proper application of the Daubert criteria *(26, p. 226)*. The federal and many state courts today are committed to this flexible and nuanced but also more uncertain approach *(27)*. Although Frye demanded the court to acquiesce to the opinion of a relevant scientific community, Daubert requires the judges to make their own independent inquiry, for example, considering peer review, publications, and general acceptance in the scientific community *(33)*. However, the now deceased Chief Justice Rehnquist, concurring in part and dissenting in part, expressed doubts about its practicality; he was, for example, "at a loss to know what is meant when it is said that the scientific status of a theory is its 'falsifiability' " *(30, p. 599)*. It is therefore not surprising that in a recent survey of 400 state trial court judges regarding their attitudes toward the Daubert criteria, 91% seemed to understand the criteria of peer review/publication and general acceptance, but only 6% had a clear understanding of falsifiability and 4% of error rates *(34)*. This survey did not measure how well the gatekeeping obligation was handled and whether federal judges understood the concepts any better. It is also questionable how jurors can assess the reliability of expert testimony *(27, pp. 152,153)*. Furthermore, according to Dahir et al. *(35)*, it appears that the influence of Daubert on judicial admissibility decisions was not very significant and that judges have been relying on criteria and habits of analysis familiar to them (e.g., the general acceptance standard, relevance, qualifications, and credibility of the expert). This led the authors "to conclude that one reason that psychology is still considered part of the 'soft sciences' is that judges seldom hold the discipline to the same rigorous methodological standards as the 'hard sciences'. Until this is done, Daubert's impact on the admissibility of psychological syndrome and profile evidence will remain negligible" *(35, p. 78)*.

In *General Electric Co. v. Joiner (31)*, the US Supreme Court clarified in 1997 the review process not addressed in Daubert: the abuse of discretion—the standard ordinarily applicable to review of evidentiary rulings—was the proper standard by which to review a district court's decision to admit or exclude expert scientific evidence. In addition, it held that nothing in either Daubert or the Federal Rules of Evidence required a district court to admit opinion evidence that was connected to existing data only by the ipse dixit of the expert *(31, p. 146)*.

Then, in *Kumho Tire Co. v. Carmichael* in 1999 *(32)*, the Supreme Court was required to decide how the Daubert ruling applied to the testimony of experts who were not scientists. The court stated that the Daubert "gatekeeping" obligation applied to all expert testimony and that Rule 702 did not distinguish between "scientific," "technical," and "other specialized" knowledge, so that "Daubert's general principles apply to the expert matters described in Rule 702" *(32, p. 149)*. "And where such testimony's factual basis, data, principles, methods, or their applications are called sufficiently into question…the trial judge must determine whether the testimony has a reliable basis in the knowledge and experience of [the relevant] discipline" *(32, p. 149)*. Therefore, whether an expert based his/her testimony on professional studies or personal experience, he/she had to employ the same level of intellectual rigor in the courtroom that characterized the practice of an expert in the relevant field *(32, p. 152; 36, pp. 178,186)*. The court had also stated that a trial court may consider one or several of the more specific factors that Daubert mentioned when doing so would help determine that testimony's reliability *(32, p. 150)*. But it also reminded the gatekeepers that the Daubert test of reliability was "flexible," and Daubert's list of specific factors neither necessarily nor exclusively applied to all experts in every case; rather, the law granted a district court the same broad latitude in deciding how to determine reliability as with respect to its ultimate reliability determination. With this, it has been noted, the US Supreme Court has provided the lower federal courts with only a sketchy set of sailing directions *(37, p. 45)*.

Criminal profiling could be considered an area of "specialized knowledge," although it has been argued that "[c]riminal psychological profiles can be deemed quasi-scientific because they are created through a scientific process" *(21, p. 263)*, because it—if at all—employs social science theories (its categorization being debated; *21, p. 262; 38, p. 755*) rather than criminological theories (that are falling under scientific evidence; *21, p. 262*). Either way, such testimony in the form of expert opinions must be reliable and relevant and may—depending on the particular circumstances of the particular case at issue—fulfill Daubert's criteria of testability, peer review, error rates, and general acceptance in a Daubert court *(32, p. 150)*.

U.S. Case Law: Overview

Most attempts to use criminal profiling techniques in (state) courts (primarily in criminal cases) have involved expert testimony regarding behavior consistency, character evidence *(21, p. 259*; *39, pp. 106,107*: FBI arsonist profile admitted by the trial court but ruled inadmissible character evidence by the Georgia Court of Appeals because the defendant had not placed his character at issue), the assessment of crimes, establishing an essential element in capital murder (e.g., that the killing was committed for sexual gratification; *40*), uniqueness analysis, assessing dangerousness, linkage analysis, or support for a search warrant and have mostly been ruled inadmissible. This has also been noted by the UK Court of Appeal in December 2000: "[s]o far as is known, there have been seventeen occasions in the United States when criminal trial judges have admitted evidence of psychological profiling: in each case the decision has been overturned on appeal" *(41, n. 25)*.

Criminal profiles used by the police to identify characteristics of people that should be subject to further investigation have always been inadmissible in court proceedings to prove guilt *(42, p. 1084)*, being "too sweeping and over inclusive, and hence potentially misleading to juries and unfairly prejudicial to defendants" *(43;44, p. 151)*. It was also noted that "evidence intended to address guilt by likening a defendant to a profile or stereotype of those likely to commit the crime in question has great potential for introducing bias and error. Most such evidence is certain to have prejudicial impact, yet will more often than not lack probative value" *(44, p. 152)*. Criminal profiles are also regularly viewed as unreliable, with reliability being the *sine qua non* of expert testimony *(40, p. 1150*; *45,46)*.

FBI profilers, largely unsuccessful in giving profiling testimony, have begun introducing linkage analysis in a growing number of cases. Linkage analysis can be defined as "the comparison of two or more crimes for common characteristics of a unique or distinctive nature that permits a trained investigator to conclude that the same perpetrator committed the crimes" *(47, p. 998)*. The underlying methodology, however, draws more or less on the same theoretical and practical knowledge, experience and intuition as criminal profiling, and the development of the linkage analysis approach to crime analysis had its origins in the same serial crime studies undertaken by the Behavioral Science Unit of the FBI. However, the insofar specialized FBI agents usually stress that linkage analysis is not the same as profiling testimony (e.g., Robert Hazelwood; *48*). Nevertheless, although sometimes allowed by lower courts, such testimony has also mostly been excluded *(49, pp. 113,114; 50)*.

There has even been a case *(51)* where a fictitious FBI profile played a role in interviewing a suspected killer, apparently to ensure that he was focused on the polygraph examination and the incident in question. The Supreme Court of Connecticut concluded that the false reference to the profile had not been designed to elicit an admission and had not coerced the defendant's subsequent statements, and affirmed the conviction. Such improper uses should, however, not be considered by the state when trying hard at the same time to advance the credibility of the profiling process and its acceptance in court.

Although there are now many court decisions dealing with (authentic) criminal profiling evidence, the scope of this chapter allows only to address a few of them, illustrating different uses of profiles.

U.S. CASE LAW: EXAMPLES

State v. Haynes and State v. Roquemore

One case that well illustrates the many pitfalls of profiling testimony is *State v. Haynes (52)*. Richard Haynes was convicted of murder by the Common Pleas Court in Ohio. On appeal, the assignment of error concerning the admission of the testimony of Robert Walter (a prison psychologist) as an expert in criminal profiling was evaluated. Walter had testified to the distinction between a homophobic murder and an anger-retaliatory murder. The state argued that this testimony showed that the crime was not a homophobic murder done out of panic after an unsolicited homosexual encounter but rather an anger-retaliatory killing committed purposely after a cooling off period *(52, n. 5)*. Following Evidence Rule 402, stating that all relevant evidence was admissible, except as otherwise provided, the court of appeals addressed the reasons for exclusion of this testimony. It held that neither the scientific reliability nor the general acceptance of the theories proposed by the criminal profilist had been established and that the prejudicial effect of the testimony far outweighed its probative value. His testimony conflicted with Ohio Evidence Rule 702, although Walter had testified in three other murder trials before, including *People v. Drake (53)*, regarding a pathological condition and the specific profile of "piquerism," as well as Evidence Rule 704 (stating, *inter alia*, that "[o]pinion testimony on an ultimate issue is admissible if it assists the trier of the fact, otherwise it is not admissible") and Evid R. 403 ("[a]lthough relevant, evidence is not admissible if its probative value is substantially outweighed by the danger of unfair prejudice, of confusion of the issues, or of misleading the jury").

In Walter's testimony, he had identified types of perpetrators and argued that the appellant's version of the killing and his subsequent actions were typical of an anger-retaliatory murder and in great length and detail described

the traits and characteristics of such a type of murderer and found that the appellant's actions and motivations matched that profile. The court reasoned that admissibility of similar testimony, for example, on the battered woman syndrome, had already been rejected in other cases *(54, p. 521)*, partly out of a belief that such testimony would tend to stereotype a defendant, causing the jury to become prejudiced *(52, n. 13)*, so that a jury would "decide the facts based on typical, and not the actual, facts" *(54, p. 521)*. The court also mentioned that character evidence was inadmissible unless the defendant had first introduced evidence of his own good character according to Evidence Rule 404(A)(1), which he had not. Because Walter's testimony on the anger-retaliatory profile had been laden with references to personality and character traits of the accused that matched the profile of a deliberate killer, the court excluded his testimony on these grounds as well.

Furthermore, Walter had testified on cross-examination that he had based his opinion on police reports, the autopsy report, and conversations with the prosecutor and the police. Only the autopsy report was admitted into evidence. Pursuant to Evidence Rule 703 (providing that an expert cannot base his/her opinion on hearsay but must rely on his/her own personal knowledge of facts and data submitted as evidence in the case), the court ruled that conversations with the police for example were clearly hearsay. Admission of expert opinion testimony based in part on medical reports and medical histories not admitted into evidence and not prepared by the witness had also been held to be preju-dicial error in other cases; the court applied this reasoning to police reports as well *(52, n. 17)*. The admission of Walter's testimony by the trial court was once again considered erroneous.

Finally, the error of admission was ruled prejudicial and not harmless beyond a reasonable doubt, as it was possible that the evidence complained of might have contributed to Haynes' conviction. On review of the record, putting aside Walter's expert testimony, the remaining evidence did not constitute overwhelming independent evidence of guilt. The court reversed his conviction for murder and remanded the cause for a new trial. Therefore, in this case, it was especially important to be cautious in admitting questionable evidence because it could have had a significant impact on the outcome of the trial, absent other compelling evidence against the defendant.

Five years later, in *State v. Roquemore (49)*, the same expert was admitted by the trial court as an expert in criminal profiling. In this case, he testified that the crime scene was "disorganized" and went on to describe the crime as anger-retaliatory in nature. The defense appealed Roquemore's conviction on the grounds that the trial court had committed reversible error and had deprived Roquemore of due process of law by permitting introduction of inadmissible

opinion testimony by a criminal profilist. The Ohio Court of Appeals ruled (again) that there was a distinct possibility of stereotyping the defendant and that Walter's opinion had consisted of generalities and stereotypes rather than specific facts, which could prejudice a jury. The testimony also did not pass the hurdles of character evidence and reliability and the court reversed the conviction.

Commonwealth v. DiStefano

In *Commonwealth v. DiStefano (55)*, a murder case, the Commonwealth of Pennsylvania tried to introduce the testimony of FBI agent Robert Hazelwood and prison psychologist Richard Walter as experts in the fields of violent crime behavior, crime scene analysis, violent crime assessment, and murder. The defendant argued that both men were criminal profilers and that their opinions were not predicated on a sufficiently established methodology that was generally accepted, that the testimony was predicated on speculation and probability, that it was too prejudicial, and that it invaded the jury's province. Crime scene and linkage analysis were viewed by the defendant's lawyers as similar to profiling testimony, like "a different suit on the same animal": "It's a distinction without a difference" *(55,56)*. The Court of Common Pleas of Lackawanna County found that Hazelwood, having worked 16 years in the Behavioral Science Unit, was only allowed to testify about his analysis of the crime scenes, and his opinions and conclusions related to the physical evidence (or lack thereof) of the crime scenes, as long as his report and opinions did not seek to profile *(55)*. The court noted,

> What the Commonwealth seeks to establish through using Hazelwood's testimony is that the defendant exhibited the characteristics and behaviors of how a murderer may act. Not only is the testimony profiling, but it is also speculative and expressed in terms of probabilities. This court finds that the Commonwealth has failed under Frye ... to establish that profiling testimony has gained general acceptance in the scientific community to form the basis of Hazelwood's expert testimony. Furthermore, Hazelwood's report and related testimony evidences little probative value and is extremely prejudicial to the defendant. Such testimony is akin to an expert eyewitness account that the defendant committed the murder. This court will not allow such an account. *(56, p. 3)*

The court prohibited the attempt to discuss

> ... the establishment of a link between assessed behavioral traits of a murderer, specific characteristics and behavior of the defendant and direct or indirect assertions of the defendant's guilt. ... This court will not allow Mr. Hazelwood to expand into profiling or areas of probabilities. We remain mindful that an opinion

couched in terms of probabilities and/or possibilities is to be excluded as lacking the requisite certainty to be admissible as an expert witness. *(56, p. 3)*

Walter's testimony was ruled inadmissible for similar reasons *(55, p. 18)*.

State v. Stevens, Simmons v. State, U.S. v. Meeks, and State v. Lowe

William Stevens was convicted in the Criminal Court for Davidson County (TN) of two counts of first-degree premeditated murder of his wife and his mother-in-law, as well as especially aggravated robbery *(50)*. He was sentenced to death; he appealed the judgment and raised the issue whether it had been error to limit the testimony of crime scene expert Gregg McCrary *(50, n. 2)*. The Court of Criminal Appeals of Tennessee affirmed the trial court's decision after undertaking an extensive analysis of McCrary's testimony.

McCrary had been retained by the defense to conduct a crime scene analysis in which he examined the evidence at the crime scene to determine the likely motive for the crime. He had requested that he not be given any information regarding the suspect, and he had stressed that he was not engaging in criminal profiling. McCrary described the crime scene as a "disorganized sexual homicide" and elaborated on this theme, comparing it with a contract murder crime scene *(50, n. 44)*. He was asked whether a potential accuracy rate had been established, and he reported that the FBI had conducted one survey and determined that its agents were 75–80% accurate on crime scene analysis and profiling. He further explained that this type of analysis was not a hard science "where you can do controlled experiments and come up with ratios" *(50, n. 44)* but that the increased demand for such services exemplified its effectiveness. He therefore argued the proof of validation and reliability in the process was that the method was accepted and used and the demand was far greater than the resources to provide it.

The testimony offered was not based on scientific theory and methodology but on nonscientific "specialized knowledge," that is, the expert's experience. After hearing this offer of proof, the trial court had disallowed the foregoing testimony, determining that it dealt with the "behavior aspect of an offender and not the crime scene" *(50, n. 46,47)*. It had commented that although McCrary was thought to be a "tremendous asset" in law enforcement, his testimony regarding the behavioral aspects of suspects and motive did not comply with Tennessee Rule of Evidence 702 (being more stringent than its federal counterpart in that it requires the expert testimony to "substantially assist the trier of fact," whereas the federal rule requires only that the testimony "assist the trier of fact," which indicates that the probative force of the testimony must be stronger), "because there is no trustworthiness or reliability" and it was too speculative:

Although this type of sophisticated speculation is undoubtedly very helpful to criminal investigators, it is not sufficiently reliable to provide the basis for an expert opinion in a criminal trial. Likewise, although not technically considered "profiling", McCrary's attempt to analyze the "behavior of the offender based on all the forensic evidence" does not pass muster. Despite agreeing that human behavior is very complex and that there can be multiple motives for a homicide, McCrary intended to express an expert opinion that the killer in this case had not been hired to commit the murders but, instead, had committed a sexually motivated crime triggered by an upsetting event. This Court does not doubt McCrary's assertion that his opinion is based upon years of research and experience. For that reason, the Court agrees that the opinion is not based entirely on speculation. However, the Court is not convinced that this type of analysis has been subjected to adequate objective testing, or that it is based upon longstanding, reliable, scientific principles. Consequently, after considering the proffered testimony, the relevant authorities, and the arguments of counsel, the Court again concludes that this portion of McCrary's testimony would not have "substantially assisted the trier of fact." *(50, n. 49)*

During the jury-out hearing, McCrary himself conceded that, to his knowledge, no court in the United States had ever admitted expert testimony that relied on criminal profiling. However, the trial court permitted McCrary to testify generally about the crime scene, staging, and the possibility that there were two offenders.

Before the Court of Criminal Appeals of Tennessee, the defendant argued that the trial court had erred by requiring that McCrary's testimony be "based upon longstanding, reliable, scientific principles" because the testimony was "specialized," rather than "scientific," and he argued that the trial court had misconstrued the nature of McCrary's testimony in finding it inadmissible. The court stated that opinion testimony by expert witnesses was governed by Tennessee Rules of Evidence 702 and 703 (the latter stating "the court shall disallow testimony in the form of an opinion or inference if the underlying facts or data indicate lack of trustworthiness"; there is no such restriction on expert testimony under the federal rule). In determining the reliability of expert "scientific" or "specialized" evidence, the court considered the following factors: (a) whether the scientific evidence had been tested, (b) whether the evidence had been subjected to peer review or publication, (c) whether a potential rate of error was known, (d) whether, as formerly required by Frye, the evidence was generally accepted in the scientific community, and (e) whether the expert's research in the field had been conducted independent of litigation *(50, n. 52; 57, p. 266)*. Therefore, no matter what type of evidence was at issue, the evidence had to be derived from "relevant . . . methods, processes, and data, and not [based] upon an expert's mere speculation" *(57, p. 265)*. According to McCrary, the system of analysis he had used in analyzing this crime scene was

not a "hard science," but was based on methods, processes, and data developed by the FBI for the investigation of violent crime. Insofar, the court did not follow the defendant's argument that the trial court had applied an incorrect legal standard.

Stevens next argued that the trial court had misconstrued the nature of McCrary's testimony and that McCrary was prepared to testify about characteristics of a crime scene and what those characteristics indicated, which were matters not within the common understanding of the jury *(50, n. 54)*. He asserted that the testimony would have substantially assisted the jury in understanding the crime scene. In support of his argument, the defendant relied on two cases from other jurisdictions in which similar testimony was permitted *(40, n. 4–13; 58)*. In *Simmons*, the Alabama Court of Criminal Appeals had considered the defendant's challenge to the testimony of Thomas Neer, an agent for the FBI, who worked in their profiling and behavioral assessment unit *(40, n. 5)*. His analysis of the crime scene had indicated that the homicide offense at issue was sexually motivated and that the person who had committed the offense had done so for sexual gratification. The Alabama court had distinguished Agent Neer's testimony from "profile" testimony, which it found to be of little probative value and extremely prejudicial to the defendant; it stated that there was "an enormous difference in testimony identifying a person who bears certain characteristics as being more likely to have committed the offense and in testimony that the physical evidence of a crime indicates certain characteristics about the offense" *(40)*. After listing Neer's extensive experience in the field of crime scene analysis, the court had "recognized that through interviews, case studies, and research a person may acquire superior knowledge concerning characteristics of an offense" *(40, n. 10)*. It then determined that there had been adequate evidence presented to establish the reliability of crime scene analysis and victimology as fields of "specialized knowledge" and that the jury would be "greatly assisted by a professional analysis of the crime scene in comparison to other murder cases" *(40, n. 10,11)*. However, the case involved the use of criminal investigative analysis, not true profiling *(59)*. Similarly, in *Meeks (58)*, the United States Court of Military Appeals had held that the testimony of FBI Agent Judson Ray was admissible in the defendant's trial for a double homicide. Agent Ray was permitted to testify that in his "professional opinion, . . . the person that was responsible went there with sex and killing on his mind" *(59, n. 66)*. In finding the testimony admissible, the court determined that Agent Ray had extensive experience and training in the field of crime scene analysis: "This showing of expertise can hardly be considered speculation" *(59, n. 68)*. The court had also noted that a homicide and its crime scene were not matters likely to be within the knowledge of an average court-martial member

and that Agent Ray's testimony would assist those members in understanding the evidence *(59, n. 68,69)*.

Although the Court of Criminal Appeals of Tennessee found these cases instructive, it noted that the evidence in both cases was admitted under rules of expert testimony identical to the federal rule, not the Tennessee rule, in that the rule required only that the evidence "assist the trier of fact" *(40, n. 6)*. The probative force of the testimony had to be stronger before it was admissible in Tennessee *(40, n. 57; 57, p. 264)*. Moreover, the court argued that other courts had found similar testimony to be inadmissible under the less stringent standard of evidence that will "assist the trier of fact" *(49, pp. 112–115; 60, pp. 784,785)*. The court next analyzed the *Lowe* case, where the Ohio Court of Appeals had found the proposed testimony of FBI Agent John Douglas to be inadmissible *(60, p. 785)*. Agent Douglas, who had been an FBI agent for 20 years, also had extensive experience in crime scene analysis *(60, p. 784)*; he had been prepared to testify that, based on his review of the crime scene materials, he believed that the motivation for the homicide in question was sexual. After reviewing the proposed testimony, the court had found that it was not sufficiently reliable to be admissible, stating "[w]hile we in no way trivialize the importance of Douglas's work in the field of crime detection and criminal apprehension, we do not find that there was sufficient evidence of reliability adduced to demonstrate the relevancy of the testimony or to qualify Douglas as an expert witness" *(60, p. 785)*.

Applying Tennessee's more stringent requirement that expert testimony "substantially assist the trier of fact," the Court of Criminal Appeals of Tennessee ruled that McCrary's testimony was not reliable enough in the instant case to substantially assist the trier of fact in understanding the evidence or in determining a fact in issue. It stated that Tennessee courts had always been hesitant to admit expert testimony dealing with behavioral characteristics of offenders or victims to prove that a certain crime did or did not occur as alleged and went on to cite several precedents *(61, pp. 561,562)*. The court also believed that contrary to the defendant's assertions, McCrary was attempting to do more than merely explain the characteristics of a crime scene. His testimony had offered an opinion on the psychological motives of the perpetrator, based solely on the evidence left at the crime scene: McCrary had been prepared to testify that he could determine the motive of the perpetrator by comparing the crime scene at issue with "typical" crime scenes in which the motivation was a sexual assault brought about by a precipitating stressor. Thus, his testimony was attempting to show that a crime did or did not occur as alleged based on the manner in which a person behaved. Moreover, the court mentioned that McCrary himself had testified that an internal FBI study had determined the

accuracy rate of crime scene analysis and criminal profiling to be 75–80% accurate *(50, n. 62)*. Considering all this, the court concluded that the trial court had not abused its discretion by determining that the proposed expert testimony was not reliable enough to substantially assist the trier of fact.

Finally, the defendant also asserted that the trial court's exclusion of McCrary's testimony effectively prevented him from putting on a defense. A defendant's right to present a defense, which includes the right to present witnesses favorable to the defense, is guaranteed by the Sixth Amendment to the US Constitution and the Due Process Clause of the Fourteenth Amendment to the US Constitution. "In the exercise of this right, the accused, as is required of the State, must comply with established rules of procedure and evidence designed to assure both fairness and reliability in the ascertainment of guilt and innocence" *(62, p. 302)*; "[h]owever, these procedural and evidentiary rules of exclusion 'may not be applied mechanistically to defeat the ends of justice' " *(63, p. 432)*. In the instant case, the court noted that generally, the analysis should consider whether (a) the excluded evidence was critical to the defense, (b) the evidence bore sufficient indicia of reliability, and (c) the interest supporting exclusion of the evidence was substantially important *(63, pp. 433,434)*. It then concluded that the defendant was not denied the right to present such a defense: McCrary's testimony was not the "linchpin of the defendant's case" *(50, n. 64)*, and although the admission of the testimony would have obviously strengthened the defendant's theory of the case (that a named third party had committed the murders because he had been sexually infatuated with one victim rather than because the defendant had hired him to do it), it was not essential to the defense. The jury could also have drawn this conclusion themselves from the facts of the crime scene, and, as already determined, the expert testimony did not bear sufficient indicia of reliability to substantially assist the trier of fact. The court mentioned that

> while the type of crime scene analysis performed by Mr. McCrary is undoubtedly an asset to criminal investigations, it is only seventy-five to eighty percent accurate according to an internal FBI study. Considering the importance a jury places on expert testimony and the need to place only reliable evidence before a jury so as to ensure accurate fact-finding, this testimony was properly excluded. *(50, n. 22)*

Therefore, no reversible error on the part of the trial court was found *(50, n. 114)*; additionally, the defendant's convictions and his sentences of death were affirmed. This case also shows that basically the same reliability standards apply when a profile or behavioral analysis is used for the defense to create reasonable doubt.

Regarding the *State v. Simmons* case discussed in Stevens (60), p. 217, Donald Cochran, assistant US attorney in Alabama, noted that it "is only fair that prosecutors be allowed to present testimony by someone qualified to explain how such criminals think. Because of the status of the FBI's Profiling and Behavioral Assessment Unit as the only organization in the world [!] that specializes in the investigation of bizarre and brutal crimes, testimony by members of the unit will always be powerful evidence. So long as such testimony meets the requirements set out in Rule 702 regarding the propriety of expert testimony in general, use of such testimony appears to be a reasonable and fair resolution to an unusual situation" *(50, n. 89)*. He also mentioned that criminal investigative analysis must be distinguished from "profiling". Criminal investigative analysis on the one hand involved a detailed review of all aspects of a particular crime, which may have been committed by either a known or an unknown offender. "Profiling on the other hand, is an analysis of a crime or series of crimes committed by an unknown offender which results in a detailed description of the type of person who would have done such a crime or series of crimes. This 'profile' of the unknown offender is designed to be used by investigators to assist in catching the offender. As the offender in this case was already known, the case involved the use of Criminal Investigative Analysis, not true 'profiling' " *(50, n. 139; 60)*.

State v. Fortin I and II

These well-known capital murder and death penalty cases have kept New Jersey courts busy for at least 5 years so far, the latest judgment being that of the Supreme Court of New Jersey *(47,64,65)*. Steven Fortin was charged with killing a woman in a savage sexual assault. The state offered evidence to show similarities between an incident in which the defendant had sexually assaulted and strangled a state trooper in Maine and the sexual assault and murder of Ms. Padilla for which he was charged in New Jersey. The prosecution introduced Robert Hazelwood, a well-known retired FBI agent and expert in violent sexual crimes, to catalogue the similarities between the crimes committed against Trooper Gardner and Padilla. The purpose of Hazelwood's testimony was to show that the manner in which the two crimes were committed was so unique that only one person could have committed both crimes *(64, p. 591)*. That Fortin had sexually assaulted Trooper Gardner was not disputed. At trial, Hazelwood focused on motive, *modus operandi*, and signs of ritual, finding unique similarities between the two crimes on all three grounds. He concluded that both crimes were motivated by anger and that he had not seen the same combination of ritualistic behaviors in his work over the course of his 30-year career. The trial court ruled admissible pursuant to New Jersey Rule of

Evidence 404(b) the other-crime evidence of Fortin's sexual assault of Trooper Gardner *(64, pp. 523,524)*. The Appellate Division affirmed the 404(b) ruling but concluded that Hazelwood's analysis was not sufficiently reliable to be admitted as expert testimony and concluded that Hazelwood could testify as "an expert in criminal investigative techniques" but could not "testify on the ultimate issue of whether the person that assaulted Trooper Gardner [was] the same person that murdered Melissa Padilla" *(64, pp. 528,529)*.

The New Jersey Supreme Court then held that the expert testimony of Hazelwood concerning linkage analysis lacked sufficient scientific reliability to establish that the same perpetrator committed the Maine and the New Jersey crimes *(64, p. 513)*. It also found that it was a field in which only Hazelwood and a few of his close associates were involved; as such, there were no peers to test his theories and no way in which to duplicate his results. As possible other means by which to test the validity of Hazelwood's conclusions, the court required prior disclosure of a reliable database as an essential qualifier to ensure the validity of Hazelwood's testimony *(64, p. 518)*: "If there is such a database of cases, the witness's premise can be fairly tested and the use of the testimony invokes none of the concerns that we have expressed about the improper use of expert testimony" *(64, p. 518)*. Under this prerequisite, Hazelwood was allowed to testify on his proposed *modus operandi*/signature and uniqueness analysis as well as the state of mind of the perpetrator but not on whoever committed the Maine assault also committed the Padilla homicide (linkage analysis). Justice Long, concurring in part and dissenting in part, stated that linkage analysis

> is an excellent tool for law enforcement when investigating crimes. . . . An investigator's tool cannot properly be elevated to a level of scientific reliability on par with DNA testing. Linkage analysis is, essentially, an application of a veteran investigator's opinion as to the perpetrator of a specific crime. A court cannot properly cloak an officer's testimony as to the identity of a criminal with an aura of science. This would unfairly prejudice a defendant and would allow an expert to testify to the ultimate issue of a case based upon a theory with dubious evidentiary reliability. *(66, p. 1350)*

The defense then requested a comprehensive listing of the 4000 cases referred to in Hazelwood's testimony and any database he had relied on in forming his opinion. The state responded that Hazelwood did not have such a list and that no database or scientific studies were reviewed in forming his opinion. Relying on Fortin I, the defendant contended before the New Jersey Supreme Court that Hazelwood had not produced a database of cases from which he made his comparisons and derived his conclusions, as ordered by the Supreme Court of New Jersey as a precondition to his testimony *(47)*. Accordingly, the defendant argued that the trial court should not have permitted

Hazelwood to testify in light of his failure to comply with this court's discovery order and that he was denied, in essence, his constitutional right to confront Hazelwood on the terms required by this court and, therefore, his right to a fair trial.

The Supreme Court did not accept the state's claim that Hazelwood had provided a "reliable database" by reference to his expert report, his resume, his publications, and his pretrial testimony:

> We cannot agree with the trial court that Hazelwood's reference to his experience, training, and education was a substitute for a "database of cases" or that the failure to provide such case information only went to the weight to be given to his opinion, rather than its admissibility. Hazelwood's testimony, although presented as the application of criminal investigative techniques, was couched in the aura of science, more particularly, behavioral science. *(47, pp. 586,587)*

The basis for the production of a database had been New Jersey Rule of Evidence 705, stating "The expert may testify in terms of opinion or inference and give reasons therefore without prior disclosure of the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination." Fortin I had unmistakably required prior disclosure of a reliable database to ensure the validity of Hazelwood's testimony and to allay the Supreme Court's concerns about its improper use *(64, 162 N.J., p. 533, 745 A.2d, p. 518)*. The Supreme Court therefore held:

> Surely if thousands of murder cases and hundreds of tests performed on bodily fluids can be tabulated in a database, the basic information for a database in this case can be compiled as well. Hazelwood's database should have consisted of violent sexual assault cases that he had investigated, studied, or analyzed during his professional career, and the peculiar *modus operandi* and ritualistic characteristics of those crimes. Such a database would have provided some basis for verifying the frequency of sexual assaults in which perpetrators bite the faces or breasts of their victims, or manually strangle them, or engage in high risk attacks, to name but a few of the characteristics Hazelwood found distinctive in this case. If Hazelwood was correct about the unique combination of characteristics that the Gardner and Padilla assaults had in common, the database would have strengthened and validated his conclusions. The jury also was entitled to know if there were any flaws in his analysis. We do not suggest that the database had to be comprised of all of the cases investigated, studied, or analyzed by Hazelwood, or even a majority of them. We understand that it might be overly burdensome or impossible to construct such a record if he were not keeping such records on a running basis and if he truly were denied access to the records by other law enforcement authorities. Hazelwood, however, holds himself out as an expert in this field and presumably has kept records for the purpose of conducting research, publishing articles and books, and presenting lectures. We

believe that if he had the will to do so, he could provide some credible database for submission to the trial court. The database, at a minimum, must permit an acceptable basis for comparison. We are not prepared on the present record to say what number of cases would constitute a sufficient database. That determination we leave to the trial court. *(47, p. 590)*

The New Jersey Supreme Court overturned Fortin's death sentence and conviction because Hazelwood should not have been permitted to testify on violent sexual crimes without producing the required, reliable database of violent sexual assault cases. Indeed, it may be argued that earlier decisions dealing with the issue of linkage analysis have been somewhat superficial in their consideration of the issues *(67–69)*. The Fortin case analyzed the reliability issue more closely and also provided some pointers as to how to argue reliability.

People v. Schmidt

An unusual case, as it concerns a profile regarding an apprehended offender, is *People v. Schmidt (70)*, decided by the Court of Appeal of California, Sixth Appellate District. The appellant had originally been committed to the California Youth Authority (CYA) in October 1989 after the juvenile court sustained a petition that had charged him with sodomy and first-degree murder of a 3-year-old girl in 1988. After two appeals, a reduced charge of second-degree murder was sustained. He had been committed to the CYA ever since. He could have been released when he turned 25 in 1997, but the appellant's commitment was extended for 2 years by trial court order. His release was then scheduled for February 1999. Schmidt requested a jury trial on the issue whether he was presently dangerous to the public and should be recommitted for 2 more years. The prosecutor filed a motion to have Michael Prodan, a criminal investigative profiler, and a police officer trained in investigating crimes scenes and behavioral sciences, who had interviewed many criminals as well as spoken with people who work with sexual sadists, to testify about the "profile of the person who committed the crime based upon an analysis of the crime scene" and "provide information regarding the profile of a sexual sadist and pedophile" *(70, p. 91)*. Prodan, who had never met Schmidt, would also establish that sexual sadists remained dangerous to the community, that the person who committed the appellant's crime was a sexual sadist, and that such persons were dangerous *(70, p. 92)*.

Prodan was accepted by the court as "an expert in the area of behavioral science analysis and criminal profiling" *(70, p. 26)*. He reviewed the materials surrounding the appellant's crime and gave testimony regarding the appellant being a sexual sadist *(70, pp. 26,27)*. He testified that the person who committed

the 1988 crime had used the child's suffering and death as part of sexual arousal, saying he believed that the perpetrator had masturbated over the dead victim and that the perpetrator had engaged in sophisticated criminal behavior called "staging" and that the defendant's youth at the time of the crime made the defendant more dangerous. He stated that once a person acted in a sexually sadistic manner, the chances for treatment were "very small, if not nil" and that sexual sadists did not change *(70, p. 108)*. The court ruled the evidence admissible on the issue of public danger.

Schmidt appealed this decision and contended that the criminal profile evidence was irrelevant and that Prodan was not qualified as an expert to offer opinions regarding the mental state of perpetrators *(70, p. 93)*. Even assuming that the trial court should have excluded Prodan's criminal profile testimony, the appellate court concluded that it did not prejudice appellant: two psychologists had also testified that the appellant was a sexual sadist, and seven other professionals had testified that the appellant remained a danger to the public. In light of all other evidence, the appellate court believed that there was no reasonable probability that the jury would have reached a different verdict had Prodan's testimony been excluded *(70, p. 94)*. In light of this conclusion, the court did not need to discuss whether the appellant's trial counsel should have objected to Prodan's testimony as based on an untested scientific technique. The order committing appellant to the CYA was affirmed *(70, p. 98)*.

It is interesting to note that in his dissenting opinion, Judge Rushing *(70, p. 107)* stated that the trial court had erred in admitting profile or crime scene analyst evidence. The prosecutor had stated that Prodan would say nothing about the defendant and had conceded that Prodan could not make mental health comments because he was not qualified to do that. However, these areas were still covered by Prodan's testimony. According to Judge Rushing, the expertise of Prodan was not relevant to the issues being tried, as the identity of the perpetrator was not in question. Whether Prodan as a criminal profiler would classify the 1988 crime as "sexually sadistic" under profiling guidelines was not relevant. And even if it were considered marginally relevant, the evidence would still be inadmissible because it was more prejudicial than probative. Prodan's aura of expertise, the graphic nature of his testimony, and the extreme negativity of his conclusions about the defendant's mental state and current dangerousness were extremely damaging to the defendant *(70, p. 109)*, because essentially Prodan had said the defendant was an incurable sexual sadist, forever dangerous to the community. Therefore, it seemed reasonably probable to Judge Rushing that a different result would have occurred absent these errors. For these reasons, he would have reversed the order committing defendant to the Youth Authority.

Haakanson v. State of Alaska

In this case, the defendant sought review of the judgment of the Superior Court of the State of Alaska, which convicted him on 10 counts of a 14-count indictment for sexual abuse of a minor in the first degree, sexual assault of a minor in the first degree, and sexual abuse of a minor in the second degree. The Court of Appeals of Alaska *(71)* had to decide whether the prosecution was allowed to introduce a profile to show that the defendant was (more) likely to have committed an offense because the defendant fitted within that profile.

Several jurisdictions have addressed the related issue of a "battering parent" or "child batterer" profile before and have held that evidence of such profiles was inadmissible character evidence, unless the defense has first raised the issue *(72, p. 138*: prosecution may not introduce character evidence of a defendant to show the defendant has the characteristics of a typical battering parent; *73, p. 18*: state may not introduce evidence of a battering parent syndrome unless the defense had first raised the issue; *74, pp. 63,64*: prosecution may not introduce evidence of a "battering parent" syndrome or show that the character of the defendant fitted the profile of a "battering parent"). The weight of authority clearly suggested that Rule 404(a) prohibited the profile testimony to be introduced at trial, unless the defense had raised the character issue first. In addition, a jury could place undue emphasis on sex offender profile testimony. Alaska Evidence Rule 403 provided for excluding relevant evidence if its probative value was outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury. The state did not show that the probative value outweighed the inherent prejudicial effect of the profile evidence. Therefore, it was held that the trial court had erred in allowing the expert to testify regarding the characteristics of a typical child sexual abuser because such profile testimony was inadmissible *(74, n. 19)*. The defendant's conviction was reversed and remanded for a new trial.

This case also shows that the unwarranted implication of guilt is particularly prejudicial where, as here, the expert testimony establishes a (general) profile of the typical perpetrator which carries with it the implied opinion that the defendant is the sort of person who would engage in the alleged act and therefore was guilty in the instant case. By contrast, when the finder of the fact is asked to infer that a victim fits a profile, this does not directly cast the accused in a menacing and prejudicial light, therefore such testimony may fare better *(113)*.

Idaho v. Parkinson

In *State v. Parkinson*, decided by the Court of Appeals of Idaho *(75)*, the defendant challenged the decision of the District Court of the Seventh Judicial

District, having convicted him of sexual abuse of a child under 16 years of age. Parkinson complained that the trial court had erred when it excluded sex offender profile testimony offered through Marcel Chappuis, a psychologist, and Peter Welsh, a former FBI agent with experience in the development of sex offender profiles for use by law enforcement personnel. The district court had concluded that (a) the profile evidence was offered to bolster Parkinson's credibility and was thus impermissible because veracity was not a "fact in issue" subject to expert opinion; (b) the evidence at issue would not "assist the trier of fact to understand the evidence"; and (c) the expert opinion evidence would constitute a direct comment on the guilt or innocence of Parkinson and replace, rather than aid, the jury's function. An adequate foundation had also not been shown for either Chappuis or Welsh to render opinions that Parkinson did not fit the profile of a sex offender *(75, p. 651)*.

The court of appeals noted, as had the district court, that the introduction of expert testimony regarding whether a defendant fitted an alleged "sexual offender profile" was almost universally rejected in other jurisdictions *(45,46; 76–88)*. Various reasons were given for the rejection of this type of evidence, including that it had not gained general acceptance in the scientific community, that it invaded the province of the jury and unfairly prejudiced the defendant, and that it would not assist the trier of fact to understand the evidence or to determine a fact in issue. The court also observed that the literature discussing the many methods of psychological assessment used to evaluate sex offenders indicated that there was no psychological test or combination of tests that could determine whether a person engaged or would engage in deviant sexual activity *(89, pp. 143,144; 90)*. The court saw no error for the trial court "to exclude from evidence testimony dealing with a scientific theory for which an adequate foundation has not been laid" *(75, p. 652)*. According to Idaho Rule of Evidence 702 and Daubert, it then reviewed the relevant criteria and suggested six additional factors for admitting expert evidence, including (a) the presence of safeguards in the technique, (b) analogy to other scientific techniques whose results were admissible, (c) the nature and breadth of inferences drawn, (d) the extent to which the basic data were verifiable by the court and jury (e) the availability of other experts to test and evaluate the technique, and (f) the probative significance of the evidence in the circumstances of the case *(75, p. 34; 90)*.

The court went on to address the offer of testimony by Chappuis. In his opinion, Parkinson did not fit the psychological profile of sex offenders. Although he had based his opinion on the results of an evaluation format that included the Minnesota Multiphasic Psychological Inventory, he had not described the personality or psychological characteristics that made up the

profile, the methodology by which the profile was derived, stated whether or how the technique had been tested, described the profile's level of accuracy in distinguishing between offenders and nonoffenders, or stated whether the profile and the assessment technique utilized had attracted widespread acceptance within the psychological community. Although the court did not hold that evidence on each one of these points was essential to an adequate foundation for evidence of this type, the absence of evidence on any of these considerations prevented a conclusion that the proffered testimony would "assist the trier of fact to understand the evidence or to determine a fact in issue" as required for admission under Idaho Rule of Evidence 702.

Welsh's proffered testimony suffered from similar defects in foundation. He had acknowledged that the FBI sex offender profile, which he had utilized, had been developed for use by law enforcement officials and that its application was more of an art than a science. He did not identify the components of the profile or explain how it was developed other than noting that its development involved interviews with convicted sex offenders. Welsh neither stated whether or how the resulting profile had been tested for accuracy nor identified the technique's error rate. Although he testified that the profile was widely used in the law enforcement community, it was not apparent whether that use was primarily for devising profiles of perpetrators of unsolved crimes or for the purpose for which it was offered in this case, that is, to determine whether an accused identified by the alleged victim did in fact commit the crime. In short, Welsh's testimony did not provide information from which it could reasonably be ascertained that the profile technique was trustworthy, that it was based on valid scientific principles, or that it could properly be applied in the manner advocated by Parkinson. Accordingly, the court found no error in the trial court's exclusion of evidence offered by Parkinson regarding sex offender profiles, and the judgment of conviction was affirmed *(75)*.

Kohler v. Englade

While investigating the deaths of several women in the Baton Rouge area, a law enforcement task force had received two anonymous tips that Mr. Kohler, the subsequent suspect, was a person who should be further investigated. He refused to submit to a DNA test. The detective then obtained a warrant and collected a saliva sample. The search warrant was based on the plaintiff fitting an FBI profile suggesting, among other things, that the killer would have (a) a job that required physical strength, (b) a criminal record, and (c) tight finances. Kohler had been convicted of a burglary, he was unemployed, and he had previously worked as a welder for a company located in the area where a

victim's personal property had been found. Although those factors could apply to many people, in conjunction with other information, it had caused officers to focus on Kohler. The detectives had, however, omitted important information, for example, that the suspect had been pardoned for his conviction. In the following civil action and summary judgment *(91)*, the plaintiff and suspect sued the city, a police chief, a detective, and a sheriff, alleging that his right of privacy, the security of his person, and the Fourth and Fourteenth Amendment of the US Constitution had been violated. The U.S. District Court for the Middle District of Louisiana ruled that the warrant was nevertheless properly issued but cautioned that

> it is important to note the mere fact the plaintiff met certain elements of an FBI profile would not suffice to establish probable cause for obtaining a warrant. This is especially true when the profile was so broad and vague that it cast a net of suspicion over thousands of citizens. Nevertheless, considering [the detectives] conducted an additional investigation and used the profile only as a single factor, the Court finds there was sufficient probable cause. *(91, pp. 756,757)*

Even if the warrant had contained the omitted material, factors other than the profile were still viewed as sufficient to support a finding of probable cause. The U.S. District Court for the Middle District of Louisiana denied the individual's motion for a new trial and/or an amended judgment on April 15, 2005 *(91, p. 758)*.

Similarly, other courts have stated that the fact that a suspect met a profile was not probable cause in itself *(92, p. 1036)* but that a profile and other available information taken together provided enough material to constitute probable cause (*21, p. 251; 93, p. 923*; see also *State v. Pennell*, where a criminal profile was admitted to support probable cause for a search; *94*). It should be noted, however, that the evidence needed to obtain a search warrant need not be based on evidence admissibility standards at trial (*95, pp. 171–173; 96, pp. 804,805*; for other cases, see *21, p. 252*).

Canadian Cases

Crime scene reconstruction and analysis results (e.g., opinion evidence explaining the significance of blood spatters or a pathologist's opinion about the cause of death of the victim) as expert opinion evidence usually meet (as in the United States) the legal requirements for admissibility. However, several attempts to introduce criminal profiling evidence, for example, regarding motivation and guilt or identity of the perpetrator, have not been successful.

R. v. Mohan

A practicing pediatrician was charged with four counts of sexual assault on four female patients during medical examinations conducted in his office *(97)*. The defendant's counsel sought to introduce a psychiatrist's testimony that the typical offender in the cases in question would exhibit certain abnormal, pedophiliac characteristics, which the accused did not possess; therefore, he did not fit the psychological profile of the putative perpetrator. Mohan set out the following criteria for the admissibility of expert evidence: (a) relevance, (b) necessity in assisting the trier of fact, (c) the absence of any exclusionary rule, and (d) a properly qualified expert. The Supreme Court of Canada stated that

> there was no material in the record to support a finding that the profile of a pedophile or psychopath has been standardized to the extent that it could be said that it matched the suggested profile of the offender depicted in the charges. *(97, para. 38)*

The expert's group profiles were not seen as sufficiently reliable to be considered helpful. In the absence of these indicia of reliability, it could not be said that the evidence would be necessary in the sense of usefully clarifying matter otherwise unaccessible, or that any value it may have had would not be outweighed by its potential for misleading or diverting the jury *(97, para. 46)*. The decision of a trial court not to allow profiling evidence was upheld.

R. v. J.-L.J.

Six years later, in 2000, the Supreme Court of Canada considered criminal profiling evidence again *(98)*. As in Mohan, the accused sought to adduce the evidence of a psychiatrist who was of the opinion that the perpetrator would have a highly distinct personality disorder, the particular traits of which the accused did not exhibit. This expert opinion was held to be insufficiently reliable to warrant admission; the court emphasized that a profile must be to some degree "standardized" if it was to be at all useful for the purpose of demonstrating the distinctiveness of the perpetrator. In addition, it had to be ensured that the profile of distinctive features was not put together on an *ad hoc* basis for the purpose of a particular case *(98, para. 44)*.

R. v. Ranger

The present key case regarding criminal profiling in Canada is *R. v. Ranger (99)*. The Ontario Court of Appeal had to review an appeal by Rohan Ranger, who was convicted of first-degree murder and manslaughter of two teenaged sisters, stabbed in their homes. Detective Inspector Kathryn Limes, manager of the Behavioral Sciences Section of the Ontario Provincial Police,

which provides the police with specialized support services including criminal profiling, was contacted by the police after the suspect had been arrested and charged with the murders of the Ottey sisters. She formed the opinion that the perpetrator had staged a break-in at the Ottey home, that he had staged the scene to divert suspicion from himself, and that he had a particular interest in one of the sisters. At trial, the Crown sought the Detective Inspector as an expert witness regarding crime scene staging to elicit her opinion that the crime scene in this case had been altered to look like a break-in. The Crown submitted that this evidence was relevant to identity because a staged crime scene was circumstantial evidence that the crime was committed by someone who wanted to divert suspicion from himself as a likely suspect, which in this case would be Ranger.

The court held that "opinion evidence is needed in this case in the sense that it will likely provide information that is outside the experience and knowledge of the jury. The factual issue of whether a break and entry is authentic or staged is not likely to be a subject within the common knowledge of the jurors" *(99, para. 29)*. She was also qualified enough as an expert in this particular area. Her testimony, however, was not confined to the opinion that the crime scene was staged. It included an opinion about the motivation of the perpetrator for staging the scene and a description of the most likely suspect as someone who had a particular interest in one sister.

The appellant argued that the trial judge had erred in admitting "unscientific criminal profiling analysis as expert opinion evidence" *(99, para. 4)*, as it did not meet the reliability or necessity criteria for admissibility of expert evidence set out in *R. v. Mohan (97)*. In Mohan, it was held that

> [t]he party seeking to introduce expert opinion evidence must meet four criteria: relevance, necessity, the absence of any other exclusionary rule, and a properly qualified expert. Even where these requirements are met, the evidence may be rejected if its prejudicial effect on the conduct of the trial outweighs its probative value ... The first two criteria and the assessment of whether the probative value outweighs the prejudicial effect also include an inquiry into the reliability of the proposed evidence. *(97, para. 48)*

The Court of Appeal distinguished between the expert witness's opinion that the crime scene appeared staged ("crime scene evidence") and her various opinions on the motivations and characteristics of the likely perpetrator as a person associated with the victims ("criminal profiling," *99, para. 53*). Regarding crime scene evidence, the court found that it was open to the trial judge to find that it was necessary to admit some form of expert opinion on this issue, as he or she was in a better position to determine whether the subject matter was one that may come within the normal experience of a jury or whether

they were likely to come to a wrong conclusion without expert assistance on the issue of whether the crime scene was staged. On its face, this evidence met the four criteria set out in Mohan. However, the manner in which the crime scene evidence was packaged for the jury *(99, para. 66)* exemplified a real danger that the evidence may have distorted the fact-finding process. The court reminded the parties that Mohan had stated, "Dressed up in scientific language which the jury does not easily understand and submitted through a witness of impressive antecedents, this evidence is apt to be accepted by the jury as being virtually infallible and as having more weight than it deserves" *(99, para. 19)*. In the instant case, the risk of creating prejudice to the accused far outweighed any probative value *(99, para. 67)*.

The court then evaluated the criminal profiling evidence, which it aptly defined as "the analysis of a crime scene and other details about a crime, in conjunction with the analyst's understanding of cases of a similar nature, for the purpose of inferring the motivation for the offence and producing a description of the type of person likely to be responsible for its commission" *(99, para. 68)*. The Court compared this case with *R. v. Guilfoyle (41)* (see p. 236), where an English court had made a comment that was apposite to the evidence in question on the appeal: "[Defense counsel] accepted that, if evidence of this kind were admissible in relation to the deceased, there could be no difference in principle in relation to evidence psychologically profiling a defendant. In our judgment, the roads of enquiry thus opened up would be unending and of little or not help to a jury" *(41, para. 68)*. For the Ontario Court of Appeal, the Detective Inspector's opinions about the perpetrator's likely motivation for staging the crime scene and his characteristics as a person associated with the victims and having a particular interest in one sister constituted evidence of criminal profiling *(99, para. 82)*. It noted that it was improper for the trial judge to allow such evidence, because criminal profiling

> is a novel field of scientific [!] evidence, the reliability of which was not demonstrated at trial. To the contrary, it would appear from her limited testimony about the available verification of opinions in her field of work that her opinions amounted to no more than educated guesses. *(99, para. 82)*

As such, the evidence also approached the ultimate issue, was highly prejudicial, and therefore held inadmissible. The court further ruled that the trial judge had erred in limiting defense counsel's ability to cross-examine the expert on the fact that her "profiling analysis" was completed on the basis of a known suspect in consultation with the Crown and the police, and the prominence that the trial judge gave to the Detective Inspector also had heightened the prejudice. Because it could not be said that the failure to properly circumscribe

the expert opinion evidence on this issue occasioned no harm, the court gave effect to this ground of appeal *(99, para. 89).*

R. v. Clark

In the most recent case dealing with criminal profiling, Joel Alexander Clark was convicted for first-degree murder of two elderly victims found stabbed to death in their apartment *(100)*. He denied the killings and only admitted to stealing a credit card, which he had then used to purchase items. He had also had bloodstains on his clothes, and DNA testing had confirmed it was the victims' blood. The trial judge admitted expert evidence of crime scene reconstruction.

The Ontario Court of Appeal then ruled that an expert in crime scene analysis could offer opinion evidence about what had occurred at the crime scene and how the crime was committed. Evidence that the crime scene had been staged (purposefully altered prior to the arrival of the police) was viewed as a subset of this expertise *(100, para. 75)*. However, criminal profiling evidence to explain why the crime was committed and who likely committed it was ruled generally inadmissible. The expert's evidence that the person responsible for the deaths would likely be someone who knew the victims was also held inadmissible, because it spoke to the motivation and characteristics of the likely perpetrator, which had fit comfortably with the accused *(100, para. 87)*. The court concluded, however, that the impugned evidence occasioned little if any harm to the appellant and that the verdict would necessarily have been the same had it been withheld from the jury: the case against the appellant was seen as overwhelming and "he would surely be convicted again if retried" *(100, para. 134)*. The verdicts rendered by the jury "would have been the same had the jury not been exposed to the small amount of impermissible criminal profiling evidence" *(100, para. 139)*. The appeal was dismissed *(100, para. 140)*.

After reviewing these Canadian cases, educated guesses regarding criminal profiling, exceeding the "what" question of admissible crime scene analysis including staging and concerning the "why" and "who" questions, have, not surprisingly, not been admitted as evidence under the guise of expert opinion; such testimony can hardly ever be reliable enough and subjected to the kind of rigorous scrutiny and review that is a legal prerequisite to its admissibility.

English Case Law

Most profilers in Britain are psychiatrists or psychologists, and although they are increasingly involved in criminal investigations before trial, they have so far had little potential or opportunity for taking part in pre-trial, trial, or

sentencing *(18)*. According to one study, of 90 studied cases that went to court, profiling was an issue in just six cases and only two profilers actually reached the courtroom *(18)*. Profilers, as opposed to (other) forensic psychologists, who are often involved in trial, are not viewed as delivering expert evidence, much less evidence that could establish guilt or innocence of a defendant *(18)*. It has been observed that profiling has "never been admissible in the British legal system as expert evidence, because of definitional problems and disagreements about the scientific knowledge base" *(101)*. Two published decisions have so far dealt directly with criminal profiling: *R. v. Stagg (102)* and *R. v. Guilfoyle (41)*, both ruling profiles inadmissible.

R. V. STAGG

In *R. v. Stagg (102)*, the police had used an undercover operation to gather information about Colin Stagg, who was a suspect in the killing of Rachel Nickell. His correspondence with a policewoman had revealed that he shared a supposed rare sexual deviancy with the killer of Nickell and that his psychological profile conformed insofar with the psychological profile that had been prepared of the killer. The Central Criminal Court refused to admit such evidence, calling the investigation a misconceived and deceptive operation that, otherwise, would have an adverse effect on the fairness of the proceedings. The profiling evidence offered by the prosecution was also rejected, and Justice Ognall made general damning statements about the use of profiling as evidence:

> The notion that a psychological profile is in any circumstances admissible in proof of identity is to my mind redolent with considerable danger: first because of the rule against evidence going solely to propensity; second because the suggested analogy between this case and the authorities on so-called similar fact evidence is prima facie highly questionable, and third because of the question of whether this is truly described as expert evidence at all. *(102, p. 28C)*

Nevertheless, it has been argued that the admissibility of profiling evidence still remains open for the courts to decide *(16)*, because *R. v. Stagg* was a decision of a Crown Court, not an appellate court, which made for a limited binding precedent, because the evidence against Stagg was rejected "on grounds unrelated to the admissibility of the profile: that the investigation was conducted in such a manner as to render the evidence unreliable" *(16, p. 209)*, and furthermore, because Justice Ognall's statements were mere *obiter dicta*, therefore not binding *(16, pp. 209,210)*.

Ormerod pointed out numerous reasons for a court to reject profiling evidence *(16, pp. 212–242)*: the profiling process depends somewhat on intuition *(16, p. 212)*, and profiling is often irrelevant to the facts in issue (e.g.,

if a criminal psychologist testifies that the defendant will probably have certain characteristics) and will distract the trier of fact by creating side issues, it may be unreliable, unfair, too prejudicial, or privileged *(16, p. 215)*; in addition, a whole profile, based on probabilities, could never be "a fact," that is "true," and a part of a profile, if, for example, 90% of rapes were intraracial, would at least lead to reliability questions *(16, p. 216)*. Furthermore, even if parts of a profile passed the relevancy hurdle, the judge must still be satisfied that the evidence has relevance and that the probative force will be sufficient to outweigh any prejudicial effect it might have on the jury *(16, p. 219)*. Also, if trying to determine guilt, the profile would have to "identify factors that are specific to those who commit the type of crime in question and are not shared by the rest of the population" *(16, p. 221; 103, p. 139)*. Finally, a court could still exclude the evidence under its general discretion *(16, p. 236)*, if the admission would have such an adverse effect on the fairness of the proceedings that the court ought not to admit it under section 78 of the Police and Criminal Evidence Act *(16, p. 237)*, that is, because of how the evidence was obtained, as in the Stagg case, for example, where an undercover police operation required the exclusion of this evidence.

R. v. GUILFOYLE

The accused in this case was charged with the murder of his wife and sought to admit fresh evidence before the Court of Appeal from Professor David Canter, a psychologist, who had conducted a "psychological autopsy" of the deceased. Based on his examination of some of the evidence, including the deceased's diary and post-mortem reports, the psychologist had formed the opinion that the victim had taken her own life. The Court of Appeal ruled that Canter's opinion was inadmissible as a matter of law for numerous reasons, including that there was no identifiable way to test the reliability of his testimony:

> In our judgment, although Professor Canter is clearly an expert in his field, the evidence . . . was not expert evidence of a kind properly to be placed before the court for a number of reasons. First, although this alone would not necessarily be fatal to the admissibility of his evidence, he had never previously embarked on the task which he set himself in this case. Secondly, his reports identify no criteria by reference to which the court could test the quality of his opinions . . . there is no data base comparing real and questionable suicides and there is no substantial body of academic writing approving his methodology . . . [The] use of psychological profiling as an aid to police investigation is one thing, but its use as a means of proof in court is another . . . the present academic status of psychological autopsies is not, in our judgment, such as to permit them to be admitted as a basis for expert opinion before a jury. *(41, n. 25)*

However, the Court of Appeal may have left a door open for admitting such evidence in saying that "...the present academic status... is not...such as to permit them to be admitted as a basis for expert opinion" *(41, p. 25)*.

Australian Case Law

Criminal profiling has had equally few successes as an "area of expertise" in Australia *(104)*. For example, the Supreme Court of the Australian Capital Territory found in an arson and murder case *(105)* that the "suggestion that a person who is not qualified as a psychiatrist or psychologist [a 'behavioral consultant' who had studied profiling in the U.S.] may express an expert opinion as to the personality, character and likely future behavior of a man he has never met" was one which the judge had not previously encountered in a court of law *(105, para. 21)*. "Opinions of this kind" (visual observations of a crime scene, identifying signs of premeditation and planning, deduction that the crime was the produce of an outburst of rage, and tentative conclusions to the type of person likely to have committed it)

> may enable the police to identify the most likely range of suspects and to sharpen the focus of their enquiries accordingly. However, the fact that profiling may sometimes prove to be a valid investigative tool does not justify a conclusion that its exponents may leap majestically over the limitations of modern psychology and psychiatry and give expert evidence as to the personality and conduct of a particular person. I doubt that even the most eminent psychiatrist or psychologist would attempt to venture a professional opinion as to the underlying personality of a person whom he or she had neither met nor seen interviewed, even if informed of what had been found at a particular crime scene and invited to infer that the person had been the offender...even well qualified experts are not infallible .... Hence, courts must exercise constant vigilance to ensure that they are not unwittingly misled. Amongst the many factors which may lead an expert witness into error is a malady which, if encountered in a new car salesperson, might be described as gross product enthusiasm. *(105, para. 21–23)*

Accordingly, Judge Crispin ordered that the suspect, Steven Hillier, be admitted to bail, but imposed strict conditions including requirements that any contact with his children occur only in the presence of officers of the Department of Family Services *(105, para. 28)*.

The subsequent history of this case includes the decision of the Supreme Court of the Australian Capital Territory in 2004 *(106)* and the Supreme Court of the Australian Capital Territory Court of Appeal's in 2005 *(107)*. Hillier's appeal was allowed, and the conviction and the sentence were set aside. The Court of Appeal ruled that DNA evidence against Hillier was not strong enough

and that there were reasonable grounds to suggest another person was involved in the murder.

German Case Law

Few cases have been made public where criminal profiling has played a role in court. For example, the criminal court (Landgericht) Nuernberg-Fuerth *(108,109)* decided that it had no reasonable doubt that the scientific conclusion of the expert, Dr Thomas Mueller, a prominent FBI-trained Austrian policeman-turned psychologist *(110)*, who had testified that the offender was an retaliatory rapist and the crime a mixed sexual homicide, was correct. Mueller had linked one case of a yet unsolved murder of a prostitute to other cases of prostitute rapes, which Roland K., the defendant, had confessed to earlier. The court was also impressed that the expert had found the defendant's motive just based on the account of the victim (he had never met K.). The court, apparently having just enough circumstantial evidence, followed the expert's view, convicted Roland K. of the rapes and the murder, and sentenced him to 10 years in prison, the highest sentence under juvenile criminal law in Germany. The defense had unsuccessfully tried arguing that the methods of the expert were questionable and that profiling was not science but comparable with parapsychology or astrology. The court did not examine whether the testimony given by the expert was scientifically sound or otherwise reliable. Apparently, his qualifications and experience were enough, because the Landgericht stated that there were no doubts regarding the correctness of his "scientific conclusion" *(108, p. 73)*, which is almost reminiscent of the pre-Frye era in the United States. It may have blinded the Landgericht to some degree that a very prominent and publicized figure had offered seemingly convincing testimony regarding a novel "science." The Supreme Court of Germany (Bundesgerichtshof) upheld the decision, finding no "obvious error" in the judgment *(111)*.

On May 18, 2000, Mueller was called as an expert in another murder case by the Landgericht, Berlin *(112)*. He testified that the murder of a 9-year-old girl was a mixed sexual homicide according to the Crime Classification Manual of the FBI and that the murderer had to have known the apartment complex in which the murder was committed, so that the offender must have been someone living there at some point prior to the crime, which had been the case. The defendant was acquitted, however, because the Landgericht was not convinced that these characteristics could not fit another person. The presiding judge added in an interview that the crime scene analysis did not help the court determine whether the defendant had been correctly accused, and he would not allow such testimony in the future *(112)*. It should be noted that Mueller had adopted

the FBI approach, having been schooled there, which is being used less and less in Germany and which differs from the approach of the Bundeskriminalamt in methodology and quality *(112)*. In another case *(113)*, in 2003, the Amtsgericht Bremerhaven also did not admit profiling as expert evidence; that judgment is, however, neither publicly available nor yet final.

In the case of Oliver B., the Landgericht Dortmund *(114)* mentioned the use of a criminal profile by a German forensic psychologist in the sexual assault and subsequent murder of 18-year-old Nina T. The psychologist had written a criminal profile of the offender and had made a victimology assessment of the 18-year-old victim during the investigation. On trial, he was allowed to testify regarding his victimology assessment and said that he thought it impossible that the victim had been capable of spontaneous sexual encounters, let alone with a stranger. Although this testimony was not based on his profile of the offender and is insofar unusual, it is one of the very few cases that a criminal profile or victimology assessment has even been heard in court or mentioned in the final written decision.

There does not seem to be a consensus yet regarding admitting profiling evidence in German courts; in the (almost nonexistent) literature, however, it has been voiced that linkage analysis and profiling could be admissible in German courts, as long as experts declared that their opinions were not based on scientific and tested methods *(115, p. 246*; for a more cautious approach, see *109, pp. 300,301*). It should be kept in mind that this would, however, as in other countries, lead to probably insurmountable reliability and probative value issues. In future cases, it must therefore at least be clearly determined whether the (German) profiling approach is based on reliable methodology, especially regarding if a case is lacking other hard or even circumstantial evidence to decide on *(1)*.

Swiss Case Law

No case has been published yet where criminal profiling has been introduced in a court of law. The prosecution or defense may propose to the judge(s) to include or acquire profile evidence, and for example, the defense may object to it (*116, p. 275*, or the defense may also submit a "private" expert's testimony, *116, p. 312*). However, to determine its scope and to evaluate such written or oral testimony remains in the realm of the judge's discretion: "L'expert propose, le magistrat dispose" *(116, pp. 308,310,313*; *117, p. 149*); in the case of a private expert, so is the decision whether to consider it at all *(116, p. 315*). Any expert would need to be sufficiently qualified, and his or her methods would need to be reliable and tested to be taken into account. For lack of

experienced experts and reliable methodology as well as probative value, it seems highly unlikely that a profile could even serve as circumstantial evidence, no matter that there is no "numerus clausus" of evidence types *(116, p. 276; 117, p. 149)*. If a Swiss court adopted a comparative approach to determine admissibility, it is even harder to imagine that a judge or panel of judges would consider criminal profiling at all *(116, pp. 278,308)*, considering how little success profiling has had in foreign countries' decisions. Even if the underlying methodology of criminal profiling was accepted as reliable (which was discussed e.g. for *modus operandi* analysis, *116, p. 278*; but see generally *116, p. 314*), a "classic" criminal profile still only presents general characteristics fitting more than one individual, which appears similar to a police drawing of an unknown perpetrator following witness statements that looks similar to the later accused person, which is also not used as evidence because it could depict other people with similar appearance as well.

A profile should therefore stay a (cautiously used) tool for law enforcement to allocate investigative resources efficiently and to help narrow the search for the right perpetrator and find necessary and acceptable evidence to build a case. One has to keep in mind that unless enough accepted and time-tested evidence (e.g., DNA evidence, fingerprints, a voluntary confession) is available to the court, it would have to acquit the defendant, as he or she can only be convicted if proven guilty beyond a reasonable doubt (*in dubio pro reo* principle; *118, p. 58*). The conviction of an innocent person (or the acquittal of a guilty person due to an unfair trial) cannot be an option or a risk to take, especially when someone is charged with a grave crime.

CONCLUSIONS

Current popular culture ascribes to profilers a level of knowledge and objectivity that demands acceptance of their opinions. Experts with impressive credentials are used to elevate possible inferences to the level of scientific truth. Measuring criminal profiling against current legal admissibility standards, however, is quite another matter. Although some authors still argue that "[j]udicial use of criminal psychological profiling has a poor track record as a result of misunderstanding, misuse, and misapplication, and, thus, such testimony will usually not be admitted at trial" *(21, p. 249)*, others believe that an expert witness might be given a legitimate role in a trial but only "on the shortest and most carefully constructed judicial leash" (see *65, p. 285*, for suggestions) and it has also been stated that it seems more likely that profiling should be used with caution with its merits and applications based on a far stronger empirical basis *(119)* or that profiling should not be used at all

in court *(1)*. Although one should generally avoid unnecessarily and prematurely foreclosing the use of novel expert testimony, the cautious statements are certainly being backed up by the overwhelming majority of US precedent and international (published) case law. Even with a more flexible legal approach as applied in the United States in Kumho *(65)*, the research and experience limits seem overwhelming so far.

After reviewing two dozen cases, present profiling techniques are regularly and with good reason failing expert evidence admissibility standards. This is mostly due to their heterogeneous and fluid theoretical body of knowledge, interlaced with hardly testable individual experience and intuition, resulting in poor reliability and probative value. Furthermore, on the legal side, such evidence needs to navigate its way "through practically all of the most difficult rules of the law of evidence" *(16, p. 242)*, no matter which country's courts are called on. In this context, one has to keep in mind that even regarding DNA analysis, some authors and practitioners have raised doubts when the analysis was "only" 99.89% accurate *(117, p. 149)*, a percentile that profiling can probably never achieve in the first place. But even if profiles were accepted as reliable and valid, and if the defendant fit all characteristics, they could still not prove that the single individual in question was the correctly identified offender. Profiles do not individualize, but they generalize about the potential offender and his or her characteristics. Some authors have also voiced concern that criminal profiling carries the "danger of creating new, apparently scientifically-reinforced, stereotypes, hence criminalising sections of the population" *(5, p. 118)*. Consequently, testimony regarding the issue of guilt has never been allowed, and rightly so, because if (it could be proven that) just one other person fit the profile as well, the margin of error already amounts to an unacceptable 50%. This is one reason why profilers have been retained by defense attorneys. However, the same legal standards apply to both sides, which is why at present such evidence offerings have been ruled inadmissible on the same grounds. As a caveat, it should also be noted that counting on profiling evidence may yield dire consequences for clients "and could even lead to a new area of legal malpractice claims" *(26, p. 239)*. In this context, it has been justly stated that "experts have an affirmative ethical duty to refuse to give testimony that would not reasonably be expected to pass Daubert/Kumho scrutiny" *(26, p. 238)*. In the absence of a confession and other hard and conclusive evidence (in which case a profile would not be needed in the first place), it is in addition virtually impossible to determine whether the profile is correct; an acquittal would also not necessarily mean that the defendant, fitting most parts of the profile, had been wrongly accused *(21, pp. 264,265)*. The determination of a potential error rate remains one of the biggest challenges, especially in view of a lack of unification due to a theoretically fragmented field and its challenges in application *(17)*.

Nevertheless, it has still been argued that a profile meets three of the four factors in Daubert, and "courts should view the evidence generated in a profile as sufficiently reliable because the underlying principles can be tested, the procedure and basis for a profile's conclusion is subject to peer review, and standards for control of the profiling technique's operation exist" *(21, p. 265)*. Therefore, profiles should be admissible expert evidence in criminal trials and "courts should welcome the benefits of criminal psychological profiles" *(21, p. 266)*. The supposed benefits would, as most profiles have been introduced by the state, be arguably mostly on the side of the prosecution. This should be kept in mind especially in the United States, where the death penalty is still legal in many states, but in other countries as well, because

> the need for a high degree of scientific acceptance, and particularly reliability, is vital when a criminal case is involved where the individual's freedom or, in fact, his life may be at stake. *(120, p. 333)*

In cases where the available evidence is not optimal and the jury or judge need to rely on circumstantial evidence, the temptation may be great to admit a fitting criminal profile into evidence, but until this technique is reliable, tested, and accepted in the scientific or relevant knowledge community and is able to provide legally accurate and meaningful probabilities, if that day *ever* comes, it is to be excluded as expert evidence to ensure the defendant's right to a fair trial. Lastly, there have been cases in the United States that held profiling information to be sufficient to be a part of upholding the validity of an affidavit used to obtain a search warrant *(96, pp. 804,805)*; however, even if not the same legal standard of evidence admissibility is applied here, probable cause still needs to be just that to curtail the constitutional rights of an individual suspect. The limits of the method therefore must continue to set the limits of its reach.

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Chapter 11

Criminal Profiling

Impact on Mock Juror Decision Making and Implications for Admissibility

Anne Marie R. Paclebar, Bryan Myers, and Jocelyn Brineman

Summary

Little empirical research exists on the impact of criminal profiling testimony on mock juror decision making. The study in this chapter addresses the concerns of the courts and legal commentators that profiler testimony may prejudice jurors. Participants consisted of both undergraduates and citizens from the community who were asked to read a case summary of a fictitious trial and answer a series of questions about the evidence in addition to rendering verdicts. The participants were not significantly influenced by the presence of a criminal profiler in terms of perceptions of the defendant's guilt, belief that the two crimes were linked, and defendant's danger to society. On the contrary, there was evidence that the participants showed a poor ability to distinguish between testimony of an accurate and an inaccurate profiler.

INTRODUCTION

Criminal profiling continues to be a tool of criminal investigation, despite concerns surrounding its effectiveness. Hence, although it is routinely associated with investigations, its admissibility in court remains in question because of lack of clear evidence of its reliability and validity. Furthermore, questions about its scientific merit have proven to be a substantial obstacle to the introduction of expert testimony by criminal profilers in criminal proceedings.

A second issue, of no less importance, is whether profiling testimony may prejudice the jury. That is, jurors may place undue trust in the testimony of a profiling expert and fail to weigh the evidence appropriately, the testimony may cause jurors to see the defendant as a "criminal type," and the jurors may have difficulty distinguishing between testimony that is probative and testimony that is not probative. There is cause for these concerns because the level of media attention surrounding criminal profiling may have cemented its value in the public's mind, making its validity and reliability no longer questioned by jurors. Moreover, profiling testimony often serves to link the perpetrator's behavior to his or her character in a way that makes criminal conduct less arbitrary and more directed. Certainly, if this is the case, the potential of profiling testimony to prejudice the defendant and undermine the criminal justice process is substantial.

Research on the effectiveness of criminal profiling has suggested that profiling may be less effective than the public believes. Early research discovered little difference in the accuracy of predictions made between professional profilers, detectives, clinicians, and undergraduate psychology students *(1)*. More recent research by Kocsis et al. *(2)* concluded that profilers were only marginally more accurate than were the nonprofilers in the identification of various offender characteristics. Similar findings have emerged on investigations concerning the validity of profiling *(3)*, whereas other studies have found some evidence of profilers' effectiveness *(4)*. The validity and reliability of criminal profiling is outside the scope of this chapter. Instead, the purpose of this chapter is to address expert testimony by a criminal profiler and how this testimony may impact jurors.

PROFILING TESTIMONY AND JURORS

One issue that courts have considered surrounding admissibility of criminal profiler testimony has been the potential for such evidence to be speculative and overly prejudicial in the minds of jurors. This perspective may resonate with many who see profiling testimony as a potential undermining factor in jury decision making. Prior decisions *(5,6)* have indicated that the courts may be unwilling to allow criminal profiler testimony because it is prejudicial. In *State v. Haynes (6)*, for example, the court found there were reasonable grounds for an appeal based on the reasoning that "the trial court erred to the prejudice of the appellant when it permitted the testimony of a criminal profilist . . . [because] the prejudicial effect of the testimony far outweighed its probative value" *(p. 4)*. In this same decision, Justice Mahoney, speaking for the majority, stated the following:

The profilist's testimony was clearly inadmissible. The opinion testimony of the profilist was obviously offered by the state to zealously take what appeared to be a self-defense or manslaughter oriented defense and, through the creative genius of the profilist, convince the jury it was murder with the aid of a factual portrait that was improperly in evidence. The evidence was extremely prejudicial. How can we reasonably say that the profilist's testimony did not influence the vote of at least one person on that jury? (p. 22)

In part, the prejudicial effect of profiling testimony is that it may serve not only to provide motives for actions that appear to have none but also to paint actions in such a way that they appear to derive naturally from the character of the defendant. That is, unexplainable actions that might have been regarded as anomalous to an individual's conduct may be altered so as to be interpreted to be a direct consequence of the individual's character. Therefore, learning that someone "fits the profile" of a serial killer, or arsonist, or sexual predator, presents behaviors in such a way that it may be inextricably linked to their character and seen as largely dispositional. In this sense, profiling testimony may be particularly influential as it may suggest to the jury that the behavior is likely to be repeated in the future.

Moreover, criminal profilers have received extensive media exposure and attention, and much of it has portrayed profiling as valid and reliable. This attention may result in the public being more generally accepting of testimony by profilers than may be warranted. As the public becomes more accustomed to profiling as a field, they may be less likely to question its scientific merit. Thus, there may be some legitimacy to the fear that testimony by an expert criminal profiler may be largely unquestioned by jurors. Given that testimony of this sort may likely paint the defendant as a "type" who would commit certain offenses, the potential impact on jury decisions may be considerable. Yet, the fear that jurors may hold experts in such esteem that they would fail to examine the evidence critically may be based on an assumption that the public generally trusts experts. This assumption may not be accurate. As Vidmar *(7)* has noted in his extensive review of decades of expert testimony research, jurors do not necessarily take experts at their word. Thus, the question of how jurors are likely to regard expert testimony by a criminal profiler merits investigation.

THIS STUDY

One of the concerns surrounding profiling testimony is that it may attempt to portray actions on the part of the defendant as consistent with their disposition/character, and thus the "information constitutes impermissible character testimony" *(8)*. Character testimony of this nature may therefore establish in jurors the belief that the defendant demonstrates a propensity to commit crimes. Thus,

criminal profiler testimony may prejudice jurors *(6)*. This study sought to investigate the manner in which jurors are likely to rely on profiling evidence in their judgments. Specifically, we sought to investigate (a) whether juror judgments such as verdicts are influenced by profiling testimony, (b) whether profiling testimony that links two crimes increases the belief in jurors that those crimes were committed by the same individual, (c) whether jurors can distinguish between profiling testimonies differing in quality of evidence presented, and (d) whether profiling testimony establishes a belief in the propensity for the defendant to commit crimes. Although this method is not without its limitations, we chose to study the effects of profiling testimony using a jury simulation methodology.

METHOD

Participants

The sample consisted of 335 participants (155 college students from the University of North Carolina, Wilmington, 60 college students from California State University, Fresno and Fresno City College, and 120 jury eligible adults from communities in Fresno and San Luis Obispo, CA) who volunteered to participate in a study on juror decision making.

Ninety-two percent of the participants identified themselves as jury eligible. Of the participants 31.3% were males and 68.7% females. The participants were identified as Caucasian (67.2%), Hispanic (14%), Asian (6.3%), African American (1.8%), Native American (1.2%), and other (9.6%). The mean age of the participants was approximately 26 years for males and 27 years for females.

Design and Procedure

The participants from the community were approached at local gathering places (e.g., bus and train stations) and tested individually. The participants from California State University, Fresno and Fresno City College were approached in their classrooms (size 30–50 students) and asked to complete the materials individually. The participants from the University of North Carolina, Wilmington were solicited at a central sign-up location and were tested in groups of two to five but were asked to complete all materials individually.

Those who agreed to participate were given a consent form, a three-page case summary, and a five-page questionnaire. The participants were randomly assigned one of the six trial summaries that varied the presence or absence of profiling testimony, the strength of the case against the defendant, and the accuracy of the profiler. That is, the six conditions were (a) profiler inaccurate/strong evidence, (b) profiler accurate/strong

evidence, (c) profiler accurate/weak evidence, (d) profiler inaccurate/weak evidence, (e) no profiler/weak evidence, and (f) no profiler/strong evidence. The principal investigator and three undergraduate student assistants observed the participants at all times during the administration of the instruments to ensure they did not discuss the case with others. The entire procedure lasted approximately 20–30 minutes.

MATERIALS

Case Summary

The participants were given a three-page, single-spaced, case summary of approximately 1000 words of a fictional murder trial. The case summary entitled *State v. Wilson* reviewed the chief facts presented during the trial of Richard Wilson, for two counts of first-degree murder. The summary included a brief description of the facts presented during the trial. Included in the case summary were facts presented by the medical examiner, the detective in charge of the investigation, an eyewitness, the owner of a local sporting goods store, and a criminal profiler (depending on condition) who participated in the investigation. The two victims involved in the case were female high-school students (Patricia Erickson and Adele Stevens) who were found naked, bound, and gagged within 6 weeks' time gap in a similar remote wooded area, both apparent victims of suffocation.

In the strong evidence condition, the participants learned that the same brand and strength of fishing line that was used to tie up the victims was found in the defendant's home, that an eyewitness had identified the defendant in a police lineup, and that the defendant was a security guard at the same shopping mall where one of the victims worked. In the weak evidence condition, the participants were informed that the defendant was a security guard at the mall where one of the victims worked, but there was no other evidence linking him to the crime.

The case summaries also varied according to whether a profiler testified and to the degree of accuracy in the profiler's predictions. The profiler, Dr Kinney, was described as a forensic psychologist who provided a "linkage analysis, a term used to describe how two crimes are linked." Based on his observations of the crime scenes and police reports prior to the police apprehending the defendant, Kinney "suggested there were 10–12 clear similarities between the murders," indicating, in his professional opinion, that they were committed by the same individual. In his testimony, he also noted that "the defendant, Mr. Wilson, fit the profile of a sexual predator capable of committing these acts."

The profiling conditions also varied according to the level of accuracy exhibited by the profiler. That is, the profiler testified about many predictions (i.e., profile descriptions) made about the suspect prior to the police apprehending the defendant. In the high accuracy condition, the participants learned that the criminal profiler was highly accurate in correctly identifying all five of the five profile descriptions. That is, the criminal profiler was able to accurately predict the offender as living within a one-mile radius of the dumpsites, owned an extensive collection of pornography, lived alone in a middle-class suburb, was a White male between the ages of 28 and 35, and drove a van or some large vehicle that would have easily hidden the bodies. In the low accuracy condition, the participants were informed that the accuracy of the profiler's predictions was low and he was correct in only two of the five profile descriptions reported. He accurately predicted the defendant was a White male between the ages of 28 and 35 and that he lived alone.

Post-Trial Questionnaire

The participants were asked to complete the post-trial questionnaire. They were first asked to make, for both counts of murder (i.e., for both Erickson and Stevens), guilt judgments both dichotomously (i.e., guilty beyond a reasonable doubt versus not guilty) and on a 6-point scale with options ranging from 1 (*certain he is not guilty*) to 6 (*certain he is guilty*).

Furthermore, the participants were asked to rate their general opinion as to whether certain evidentiary facts played a role in each of their verdicts with a score of 0–5 for each victim. Some facts were relevant to what the profiler had testified about, whereas some facts were unrelated to the profiler's testimony. This evidence consisted of the following: (a) the similarities between the two crimes, (b) the suspect had an extensive collection of pornography at home, (c) the suspect was a security guard at the mall at which Erickson, the first victim, worked, (d) the fishing line found in the defendant's home matched those at the crime scenes, (e) the defendant lived within a one-mile radius of the dumpsites, (f) the defendant fits the profile of a sexual predator, (g) an eyewitness identified the defendant as being at the crime scene two nights before Erickson's body was found, (h) the defendant drove a Chevy blazer, (i) the defendant was a White male between the ages of 28 and 35, and (j) the defendant lived alone.

The participants were also asked to indicate on a 6-point scale with options ranging from 1 (*not likely*) to 6 (*extremely likely*) the likelihood of Wilson posing a continuing danger to society if released from prison, after being found guilty and convicted.

To assess general attitudes about the value of profiling testimony relative to other expert testimonies, we asked the participants to indicate, for all conditions, the degree to which they generally believed the following testimonies to be important to a decision in any murder trial: profiler testimony, medical testimony, polygraph expert testimony, the testimony of the psychologist who examined the defendant, and eyewitness testimony. The participants were asked to rate this on a 6-point scale with options ranging from 1 (*not important*) to 6 (*very important*).

To assess the degree to which the sample was adequately engaged in the task and the participants took their role as jurors seriously, we measured the degree to which they regarded the case summary as realistic. The participants were therefore asked to indicate whether they believed the events were taken from an actual trial and to rate their belief on a 6-point scale with options ranging from 1 (*sure case is not come from actual trial*) to 6 (*sure case is from actual trial*). Also included in the post-trial questionnaire was a demographic section, which requested participants to provide information such as age, gender, ethnicity, US citizenship, whether they were registered to vote, and whether they had a driver's license.

RESULTS

Because the sample consisted of college students both in California and in North Carolina, along with the general public from a sample taken in California, a one-way analysis of variance (ANOVA) was conducted on guilt perceptions for the three samples. The results revealed no significant difference between the three groups in regard to guilt perceptions, $F(2, 332) = 0.509$, $P > .05$. Therefore, because no differences emerged between the samples on the critical issue of beliefs in guilt, the three groups were combined for all the remaining analyses.

Profiling Evidence and Beliefs in Guilt

To test the hypothesis that profiling testimony would increase perceptions of guilt, we conducted an independent samples *t*-test with profiler/no profiler as the independent variable and guilt perceptions (as measured on a 6-point scale) as the dependent measure. The results revealed no significant difference between the groups, as those receiving profiler testimony (M = 3.49, SD = 1.14) did not rate the defendant as significantly more guilty than did those not presented with a profiler (M = 3.39, SD = 1.25), $t(333) = -0.77$, $p > .05$.

The participants were asked to render verdicts on a dichotomous scale of guilty or not guilty separately for both victims, Erickson and Stevens. A chi-square (χ^2) test of independence was conducted on profiling evidence (profiler/no profiler) and verdicts in the Stevens case. The results revealed no significant relation between profiling evidence and verdicts, $\chi^2(1, N = 335) = 0.65, p > .05$. For this case, 30% voted guilty when there was no profiler present compared with 32% when a profiler testified. For the Erickson case, again no relation between profiling testimony and verdicts emerged, $\chi^2(1, N = 335) = 0.65, p > .00$. In this case, 37% voted guilty when no profiler was present and 37% voted guilty when a profiler testified.

For a series of analyses concerning beliefs in guilt, guilt ratings for the defendant of each victim were combined to create an average guilt score ranging from 1 to 6 with higher scores reflecting greater belief in the defendant's guilt. A 2 (strong evidence/weak evidence) $\times 2$ (profiler/no profiler) between-subjects ANOVA was conducted on average guilt perception ratings. The analysis revealed a significant interaction between profiler and evidence strength, $F(1, 331) = 27.28, p < .001$. However, neither the main effect for profiling testimony, $F(1, 331) = 0.65, p > .05$, nor the main effect for evidence strength, $F(1, 331) = 2.14, p > .05$, emerged as significant. The means and standard deviations for the interaction are summarized in Table 1. As summarized in the table, a disordinal interaction emerged. That is, when the evidence against the defendant was weak, those participants presented with profiling evidence rated the perception of guilt as weaker than did those not presented with profiling evidence. By contrast, when the evidence against the defendant was strong, those participants presented with profiling testimony rated the perception of guilt as stronger than did those not presented with profiling testimony.

Table 1
Means and Standard Deviations for Profiling Testimony and Belief in Guilt

Condition	M (SD)
Profile/strong evidence	3.84 (1.22)
Profile/weak evidence	2.96 (1.12)
No profile/strong evidence	3.25 (1.06)
No profile/weak evidence	3.75 (1.18)

Influence and Importance of Profiling Testimony

The participants were asked to indicate how influential the profiling evidence was to their verdict. Profiling influence scores for both Erickson and Stevens was first averaged. Participants in all profiling conditions indicated the profiling evidence was moderately influential (M = 3.70, SD = 1.30). However, if we constrict our sample to the 83 individuals who rendered a guilty verdict on at least one of the counts of first-degree murder, then participants rated even greater influence for profiling evidence (M = 4.04, SD = 1.01). However, of the 10 pieces of evidence participants were asked to rate, the testimony of the profiler ranked fourth behind "that fishing line that matched those at the crime scenes was found in the home" (M = 4.44, SD = 0.91), "the similarities between the two crimes" (M = 4.39, SD = 0.85), and "the fact that the defendant lives within only a mile of where the bodies were found" (M = 4.23, SD = 0.95).

All participants were asked to rate, on a 5-point scale, how important various testimonies would be to their verdict in *any* murder trial (e.g., profiling testimony, medical testimony, polygraph evidence, eyewitness testimony, and psychological testimony). Although participants indicated that profiling testimony would be important (M = 4.24, SD = 1.33), it should also be noted that only polygraph testimony was rated less important than the other four testimonies presented. That is, participants indicated they would place greater importance on an eyewitness, medical testimony, or even testimony by a psychologist than they would the testimony of a criminal profiler.

Another method by which to determine how influential the profiling testimony concerns the extent to which the testimony of a profiler helped link the murders of Erickson and Stevens in the minds of jurors. The testimony of the profiler consisted of what is called a *linkage analysis*, whereby the jury was presented reasons why the crimes were probably perpetrated by the same individual. The participants were asked to rate the degree to which the evidence indicated the defendant was guilty of both crimes on a 6-point scale. If the linkage analysis was persuasive, the belief in guilt should be highly correlated between the two victims. Moreover, one would expect this correlation to be much higher when a profiler testifies that the crimes are linked than when a profiler does not testify. To test this, we conducted a Pearson product moment correlation on guilt ratings for both Erickson and Stevens, first with no profiler testimony presented and then again for those participants who were presented testimony by a profiling expert. When a profiler did not testify, there was a strong positive correlation between evidence strength ratings for the two crimes ($r = .78$, $p < .001$). When a profiler testified, this strong positive correlation increased only slightly ($r = .80$, $p < .001$), and the increase was not statistically significant ($z = .46$, $p > .05$). If we limit our analysis to only those who received evidence from an accurate

profiler, again the strong correlation emerged among guilt judgments for the two victims ($r = .81$, $p < .001$), but again this relation fails to differ significantly from the correlation emerging when no profiler testified ($z = .60$, $p > .05$).

We also sought to determine whether jurors may be likely to form the impression that a defendant is a criminal type and therefore given to a greater propensity to commit crimes if they are exposed to profiler testimony. If this is true, profiling testimony should lead to perceptions that these individuals would be a greater danger to society if they are released because they exhibit this criminal trait. This hypothesis was tested by asking the participants to rate the degree to which the defendant, if released from prison, would likely be a continuing danger to society. An independent samples t-test was conducted with profiler/no profiler as the independent variable; no significant differences between the two groups emerged, as those presented with a profiler (M = 3.83, SD = 1.56) did not rate the defendant significantly more dangerous than did those not presented with a profiler (M = 3.68, SD = 1.40), $t(332) = 0.90$, $p > .05$.

Do Jurors Critically Evaluate Profiling Testimony?

One concern surrounding profiling testimony is that the testimony might confuse jurors so that they would not use the information properly in their decision making. We tested this hypothesis by varying the accuracy of the profiler to determine whether jurors' guilt perceptions and influence ratings were significantly lower when the profiler was inaccurate than these same ratings when the profiler was accurate. In the high accuracy condition, the participants learned that the profiler was correct in almost all of his predictions. In the low accuracy condition, the participants learned that the profiler was incorrect in almost all of his predictions. An independent samples t-test was conducted on perceived guilt ratings for the accurate versus inaccurate profiler. The results revealed no significant difference, as belief in guilt was not significantly higher for the accurate profiler (M = 3.52, SD = 1.18) than it was for the inaccurate profiler (M = 3.48, SD = 1.11), $t(222) = 0.26$, $p > .05$. In addition, when the influence of the profiler on the verdict was the dependent measure, no differences were found when an independent samples t-test was conducted; those presented with the accurate profiler (M = 3.71, SD = 1.28) rated the profiling testimony as equally influential to their verdict as did those presented with the inaccurate profiler (M = 3.68, SD = 1.32), $t(222) = 0.14$, $p > .05$.

DISCUSSION

This study was designed to investigate whether jurors are likely to place significant importance on profiling testimony in their guilt judgments. No significant main effects for profiling testimony emerged for either dichotomous

guilt judgments or perceptions of guilt using a continuous scale. Therefore, there is little evidence from these findings to suggest that jurors may find profiling testimony particularly persuasive. To the contrary, our findings here do little to suggest that jurors are heavily influenced by the testimony of a profiler.

However, it should be noted that a significant profiling testimony by evidence strength interaction emerged for guilt beliefs. That is, when the case against the defendant was strong, profiling evidence increased guilt beliefs. Yet, when the case against the defendant was weak, profiling evidence decreased guilt beliefs. Therefore, it is difficult to reconcile these findings with the hypothesis that jurors perceive profiling evidence as strong evidence against the defendant. We argue here that the most tenable explanation for these findings is that jurors do not know what to make of profiling evidence, and like many forms of evidence, it can be judged as strong if it accompanies a strong case or judged as weak if it accompanies a weak case. This position argues that jurors may be largely equivocal in their feelings about profiling evidence and thus not highly persuaded when hearing an expert testify. This perspective is consistent with findings by Kocsis and Heller *(9)*, who measured respondents' beliefs concerning profiling and found, overall, the sample of 353 undergraduates held fairly moderate opinions concerning profiling (e.g., the overall average was approximately 4 on a 7-point scale).

The influence of profiling testimony on judgments can also be addressed by examining the extent to which the goal of the testimony (e.g., to show how two crimes are linked) achieves that goal by increasing the congruence in guilt ratings for the defendant for the two counts of murder. These findings indicated that when a profiler did not testify, there was a strong positive correlation between the strength of the evidence in the two crimes. However, when a profiler did testify, this strong positive correlation remained relatively unchanged. Therefore, if we examine the influence of profiling testimony (designed to link the crimes in this case) by how closely related the crimes are seen in terms of guilt beliefs, we see little evidence of the impact of profiling testimony on juror judgments.

More evidence for this rather indifferent response to profiling comes from examining participants' ratings of how much it influenced their judgments. Profiling evidence was rated as influential, particularly for those participants who voted guilty. But it was regarded as less influential than many other pieces of evidence such as the fishing line found at the defendant's home, the similarities between the two crimes, or the distance the defendant lived from where the bodies were discovered. Moreover, when asked to indicate the importance of profiling testimony for criminal trials in general, the participants

rated various testimonies (e.g., medical and eyewitness) as more important. Therefore, these findings are consistent with guilt judgments in that there is little evidence here to conclude that jurors are likely to base much of their decision on the opinion of a profiling expert.

A separate concern surrounding profiling testimony is that it may lead to mock juror perceptions of the defendant as a criminal type and thus prejudice the jury (e.g., *State v. Haynes*). That is, by indicating that the defendant fits the profile of someone likely to commit a particular act (e.g., sexual predator), jurors might judge the behavior as more dispositional than they normally might and therefore regard the defendant as more likely to be a danger to society in the future. The belief is that profiling testimony often serves to link behavior to the character of the perpetrator in such a way as to make criminal conduct less arbitrary and more directed. Davis and Follette *(10)* argue that by establishing that an individual has the characteristics (i.e., "fits the profile") of someone likely to engage in a particular behavior, then a likely consequence is that jurors may decide the individual either did engage in the behavior in question or will likely engage in that behavior in the future. Certainly, if this was the outcome of introducing criminal profiling testimony, the potential for evidence of this sort to prejudice the defendant and undermine the criminal justice process is substantial. The results, however, suggest that there is no significant difference between individuals presented with profiler testimony and those not presented with profiler testimony in terms of their belief that the defendant is a likely danger to society. These findings are contrary to the belief that the jury would consider profiling evidence as indicative of a defendant's propensity to commit crimes.

However, a separate issue concerning the prejudicial aspects of expert testimony surrounds whether the testimony can be understood by jurors and used appropriately. Thus, expert testimony has the potential to prejudice if it serves to confuse the jury or they demonstrate an inability to give the evidence appropriate probative weight. In that sense, the testimony can be deemed inadmissible on the grounds that "the prejudicial effect of the testimony far outweigh(s) its probative value" *(6, p. 4)*. These results suggest that jurors may not be able to critically weigh the evidence of an expert profiler. There was no significant difference between belief in defendant's guilt for the accurate and the inaccurate profiler. Furthermore, profiling testimony from an accurate profiler was equally influential to the mock jurors' verdicts as was profiling testimony from an inaccurate profiler. This rather undifferentiated response to the profiling testimony does not necessarily suggest that jurors were confused by the testimony, but it does suggest they may not adequately evaluate the probative value of the testimony. This lay perspective on profiling is not entirely

inconsistent with how individuals in law enforcement regard profiling. Kocsis and Hayes *(11)* found that police officers judged criminal profiles to be more accurate when they believed they were written by a professional profiler than when the author of the profile was not specified. Consequently, even the so-called experts have difficulty judging the value of criminal profiling. With little question, the fact that mock jurors in this study made little distinction between accurate and inaccurate profilers is consistent with the pattern of data we obtained from other measures. That is, our sample of jury eligible adults seems to have rather unformed views concerning profiling and that exhibits itself in a relatively lukewarm response to the evidence in terms of guilt judgments, a reluctance either to endorse or to condemn the evidence, and an inability or unwillingness to distinguish between profiling evidence that varies according to its likely probative value.

Certainly, this investigation used a rather bare-bones methodology in assessing the potential juror response to expert opinion by a criminal profiler. With that in mind, it is important to conduct follow-up research in this area that examines the potential impact of criminal profiling testimony using both more sophisticated trial stimuli but also varying both the nature and the detail of the profiling information. This study represents an initial foray into the possible response to testimony of this nature. Nevertheless, our findings here cast doubt on the notion that profiling testimony may be particularly strong evidence in the minds of jurors. That is, it had little effect on guilt determination, was not regarded as particularly influential when compared with other pieces of evidence, and did not lead participants to judgments about future conduct by the defendant that would suggest the testimony led jurors to regard the defendant as a criminal type.

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Chapter 12

The Phenomenon of Serial Murder and the Judicial Admission of Criminal Profiling in Italy

Angelo Zappalà and Dario Bosco

Summary

This chapter explores three broad issues related to criminal profiling in Italy. Namely, the concept and role of crime analysis and criminal profiling, the phenomenon of serial murder in Italy, and the application of crime analysis and criminal profiling within the context of the Italian judicial system.

INTRODUCTION: THE CONCEPT OF CRIMINAL PROFILING

There currently appear to be numerous problems surrounding the perception and practice of criminal profiling in Italy. One is the often automatic and incorrect association of criminal profiling with the criminological phenomenon of serial murder. Another is the conceptualization of profiling and its role in criminal investigations. This problem is especially pertinent, as many law enforcement agencies within Italy remain skeptical about its utility. In the authors' view, the source of many of these problems stem largely from the sensationalistic (and often inaccurate) depictions of criminal profiling in

the media. Indeed, since the 1980s, the media has generated many movies, books, novels, comic strips, and television shows dedicated to the broader topic of true crime and criminal profiling *(1)*. This media exposure has generated considerable interest in the technique and has resulted in practitioners in the field needing to fight metaphorical battles on two fronts. On the one hand, they must continue with research to develop, enhance, and demonstrate the validity of their work. On the other hand, they must work to demonstrate the practical applications, contribution, and role criminal profiling can play operationally in police investigations. In both of these contexts, researchers are striving to emphasize the scientific aspects of profiling and improve its recognition as a valid forensic scientific technique.

Criminal profiling and crime analysis are potentially valid tools with great benefit depending on the type of crime being assessed *(2)*. Although, in the authors' opinion, profiling techniques can be used in the investigation of single-offense crimes, their optimal application is likely to occur in the analysis of recidivistic offenders such as serial murderers *(3)*. Indeed, in these cases,
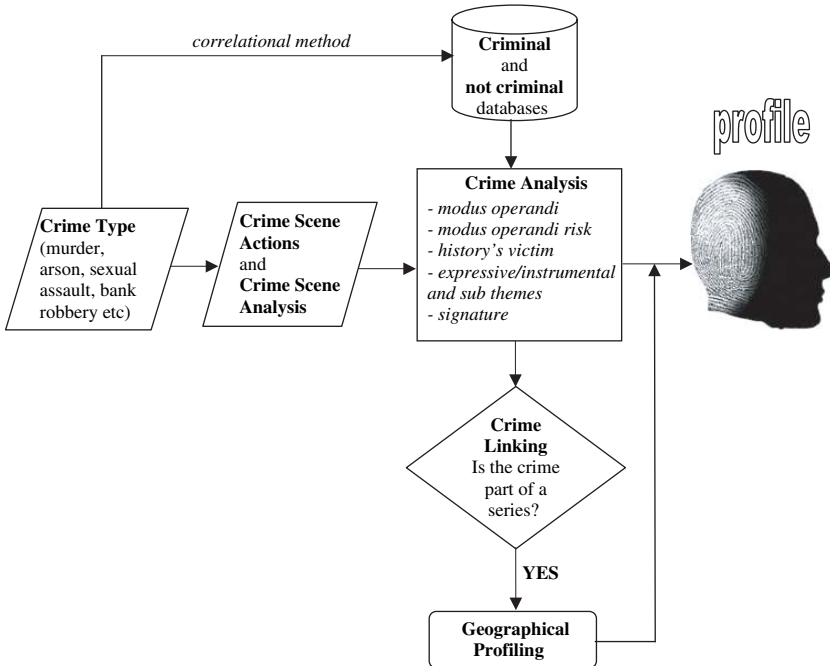
Fig. 1. Conceptual process model for psycho-criminological analysis and criminal profile construction.

profiling has become an invaluable aid in assisting investigations involving serial offenders. Criminal profiles, however, are by no means a substitute for an investigation but merely a forensic tool that may, in certain circumstances, optimize and guide investigators by saving time, money, and resources. In this context, guiding investigators can equate to the prioritization of a list of suspects (starting with the most probable suspect in descending order) or, in the absence of any suspects, assist in the generation of a template concerning the person who should in particular be pursued.

Criminal profiles should, in the authors' view, feature a set of personality traits, their social background, and, in the case of serial offenders, the probable area of the offenders' residence. The compilation of this information should be based on statistical demographic data (including criminal and non-criminal databases) as well as a psycho-criminological analysis of the facts pertaining to the case. Based on the authors' work and research in the field of criminal profiling *(4–7)*, a conceptual process by which this psycho-criminological analysis may be conducted for the construction of a criminal profile is presented in Figure 1.

SERIAL MURDER IN ITALY: DEFINING AND ASSESSING THE PHENOMENA

In contemporary criminological literature, the phenomenon of multiple murder is typically classified through one of the three basic categories. Namely, whether the offenses are of a serial, mass, or spree nature *(8,9)*. The classification of murders by these categories is typically determined by the period of time between each murder *(10)*. Although precise definitions differ between authors, it is commonly accepted that serial murders do not feature relationships between the victim and the offender, the murders are usually committed at different locations and times (referred to as the "cooling-off period"), and there are no direct connections between the murders. In most cases, the motive for serial murder is believed to be a compulsive act that, unlike most other forms of murder, is typically motivated by factors such as passion, revenge, or profit.

Despite these considerations concerning the nature of serial murder, there remains considerable debate surrounding the number of victims an offender must murder to be classed as a serial murderer *(3)*. For example, Douglas et al. *(8)* stipulate three or more victims,* whereas Dietz *(11)* argues that a minimum

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* A serial murderer is an individual who kills three or more victims in incidents that are geographically and temporally unrelated, with what is referred to as an emotional "cooling-off period" between each offense that can range from hours to years *(8)*.

of five victims must be acquired before a classification of serial murder can be made. Although exact definitions for classifying serial murder (especially with respect to victim numbers) differ among authors, there appears to be some consensus that, for the classification of serial murder, at least two victims must be murdered in temporally unrelated incidents with an interval of more than 24 hours.[†]

Adopting the commonly accepted definitional criteria outlined above, the authors examined the phenomenon of serial murder in Italy. Over a period of approximately three decades (1970–2005), a total of 28 offenders were identified. Figure 2 provides a geographical representation of where these offenders operated within Italy, and as can be seen, the Northern region of Italy tends to exhibit the highest incidence of this type of crime.
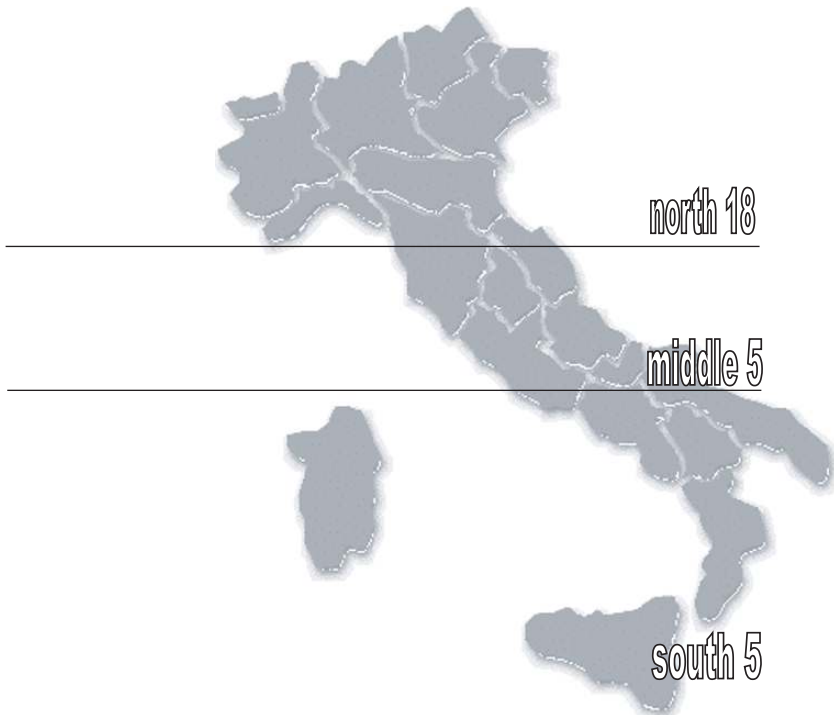
Fig. 2. Geographical distribution of serial murderers within Italy (1970–2005).

[†] It should be noted that spree killers and those who kill with one or more accomplices are not classified as serial murderers in this analysis.

All offenders were male‡ with a mean age (at the time of the first offense) of 30.6 years, whereas the mean age at the time of their last offense was 35 years. Approximately 40% of the offenders used some form of firearm, whereas 21.4% used a knife and 10% murdered through strangulation with an object or by hands (suffocation). The point of encounter and the murder scene were the same in 48% of the offenses, and the body was found at the murder scene in 76% of offenses. Offenders brought weapons in 71.4% of the sampled cases. In no case in this sample of Italian serial murderers was there any evidence found of postmortem sexual activity or of the offender having eaten (i.e., cannibalized) any part of the victim's body. Finally, victims in the form of prostitutes amounted to 36.5% of the cases, and it would appear that 47% of the victims were randomly selected.

THE CRIME ANALYST: A NEW EXPERT WITNESS IN THE ITALIAN CRIMINAL JUSTICE SYSTEM

The concept of the crime analyst in Italy does not as yet have a recognized role. These individuals are not necessarily psychologists or psychiatrists. They are often individuals from multidisciplinary backgrounds who possess a broad base of knowledge related to criminology and the forensic sciences. In many ways, the construction of a criminal profile is just one of the tasks that a crime analyst may perform. Indeed, the activities of a crime analyst can be applied to a large range of crimes and are thus not restricted to only those of an aberrant nature suggestive of some mental disorder within the offender.

Analogous to many other countries, the use of investigative profiling in Italy only occurs after the commission of a crime. Indeed, Italian scientific *post-crimen* investigative procedures are strictly regulated by the penal procedure code, which effectively governs the way in which a crime analyst/profiler may serve in a penal contest *(12–14)*. Akin also to many other European nations that have developed from the inquisitorial legal model,¶ the Italian criminal justice system operates on two different levels. The first is the preliminary investigative phase during which time evidence for both the prosecution and

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‡ Two female offenders were exempt. One offender was a medical killer (colloquially referred to as an "Angel of Death") in the context of murdering patients under her care, whereas the other murdered her husbands and partners (colloquially referred to as a "Black Widow").

¶ In contrast to the adversarial judicial model typically found in North America or the United Kingdom.

the defense is collected. The second phase is the criminal trial, wherein the parties (i.e., the public prosecutor and the defense) bring before the Court (*super partes*), the evidence collected during the investigation. Like most criminal justice systems, it is during this second phase that the respective parties argue the merits of their case before the court to obtain a decision in their favor.

There currently exists some consensus that the use of criminal profiling and the activities of a crime analyst can be beneficial and employed to some advantage in this first phase of the criminal justice system *(8,9)*. That is, in maximizing the deployment of resources and thus assisting in identifying the offender or offenders to a particular crime under investigation *(2,3)*. However, the merit, or more specifically the admissibility, of a crime analyst's techniques (such as criminal profiling) during the criminal trial phase is an issue that is not as readily agreed on. The use of new scientific techniques as evidence in criminal trials is one of the most intensely debated subjects in Italian jurisprudence. In one sense, it involves an epistemological consideration of whether "new sciences" should be allowed to enter the criminal proceedings if not currently provided for by the Italian penal procedure code *(13)*. Arguably, in the authors' view, Italian penal procedure already foresees at Article 189 the possibility for new kinds of evidence entering the trial phase, even when they are not expressly prescribed. This article also gives rise to the possibility of a new tool being capable of adding to the evidence and entering the courtroom on the basis of it having already attained the legitimacy typical of verifiable sciences. In this context, what is being contemplated is the extent to which new science or technological knowledge may be introduced at trial by means of an expert report or evaluation, in an effort to prove a fact or circumstance.

Akin to most criminal justice systems confronted by these types of issues, the main question becomes one of considering whether a "new science" should enter the courtroom at a standard consistent with prevailing law. This matter has, in recent years, been the focus of some discussion in Italian legal literature. Most of the trials where such concepts have been considered relate to matters of professional responsibility (such as, e.g., in the context of torts), whereas a few have involved the consideration of new technologies such as the "forensic sciences."

The rationale and examination of issues involving legal reasoning by the Italian judiciary often includes an examination of how similar issues have been dealt with in other foreign jurisdictions. In this sense, there appears to be some disinclination toward the admission of criminal profiles as direct evidence in support of an accused's guilt or innocence at trial in North American and UK

jurisdictions *(15)*.[‖] For example, in the United States, the public prosecutor cannot introduce a personality test as evidence against a defendant (unless it is requested by the defense[§]). However, there appears to be some impetus for the idea of *consistent expert opinion*, direct or indirect, between the case under consideration and previous cases already decided. Additionally, experts trained in the criminal behavioral sciences (e.g., profilers) argue that they should be allowed to enter the courtroom to give *modus operandi evidence* or *background information (20,21)*.

Until quite recently, the status and admissibility of criminal profiling has not been the subject of legal debate within Italy. However, two cases have recently emerged, which consider the extent to which profiling has reached a status of being considered scientifically reliable and admissible as evidence. The first decision was handed down on September 11, 2002, by the United Sections of the Italian Supreme Court in the matter of *Franzese (22)*.

The decision in the matter of *Franzese (22)* related to issues surrounding duty of care and negligence and for the first time in Italian law considered the concept of "logical probability" together with the existing concept of "statistical probability." Specifically, the court noted that "Probability factors, even if they are not near to 1, can, in a probative contest in which there are no other etiological factors can deny the evidences, lead to a positive declaration of the causal nexus existence and so to the guilt of the accused" *(22)*.

The second case to emerge was also a decision by the United Sections of the Italian Supreme Court on March 8, 2005, in the matter of *Raso (23)*. This decision dramatically altered the consideration of personality disorders that traditionally could not be regarded as the basis for a declaration of partial or total mental illness. Specifically, the *Raso* (23) case concluded that "Mental disorders, even if not classified as insanities, can be considered illnesses if they can influence the subject's capability to understand and to decide consciously (the mental health base). We are talking about psychopathy which is a personality disorder regarding the character's profile, the affective life and the will; mental disorders which do not have an organic basis but are generally acquired by environmental and human relations factors. What is important is not the

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[‖] The legal reasoning surrounding these views by the judiciary stem from several landmark cases in many jurisdictions such as *Frye v. United States (16)*, *Daubert v. Merrel Dow Pharmaceuticals, Inc. (17)*, *General Electric Co. v. Joiner (18)*, and *Kumho Tire Co v. Carmichael (19)*. A discussion of these cases and their inherent legal reasoning relative to the issue of the admissibility of profiling as evidence can be found in Freckleton and Selby *(15)*.

[§] Rule 702 e 404.

fact that the subject conditions are classifiable in the DSM[**] diseases, but the fact that the disorders can concretely jeopardize his capability to understand the significance of crimes or the punishment/repercussions in its perpetrations."

These decisions are related to the concept of scientific evidence and indicate that the Italian judiciary is refining its evaluation of the general acceptance rule that existed prior to the US case of *Daubert (17)*. Additionally, these decisions identify a logical link between disorders and an actual case under consideration as well as the importance of the disorder being part of some type of psychiatric nosology.

From these cases, there appears to be some ground to argue that crime analysts can enter the Italian trial phase but not in the same capacity as a psychiatrist or forensic psychologist giving evidence. A crime analyst's role would not necessarily be to consider whether some element of mental illness was involved in the perpetration of crime. Rather, the crime analyst's role is perhaps best conceptualized as analogous to that of a forensic scientist. That is, as an independent expert who may offer a qualified opinion during the trial, independently of the arguments presented by either the prosecution or the defense. In this sense, according to the new criminal procedure code (which in the Italian criminal justice system affords a defendant the right to make their own investigation), a professional skilled in criminal behavioral sciences could potentially enter the criminal trial, if he/she can use technical and theoretical tools to demonstrate a scientific knowledge of a given area of study. This technique is based on the crime analysis, of both the actual case under consideration and similar crimes, the *modus operandi* evidence, and the background information that can be used at the trial.

This point seems especially sustainable given that Article 192 of the Italian Criminal Procedure Code provides that not all the elements introduced at trial must serve an evidence role but can be considered as circumstantial evidence and, in particular, as "logical evidence."[††]

An expert's opinion, supported by his/her scientific knowledge and by the merging of classical sciences and new techniques, can be used during the trial. The more the new method is scientifically validated, the greater the probabilities of prediction and the greater its logical fit to an actual case (following the

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[**] Diagnostic and Statistical Manual of Mental Disorders.

[††] The logical evidence is a logical process that starting with evidence aims to check the existence of a fact. In this sense, the reasoning consists of an inductive–deductive double passage: an experience rule or a scientific law is applied to the well-known fact; the experience rule or the scientific law is found out examining facts that are similar to the well-known fact; once reached, the rule is compulsory to apply to the well-known fact *(14)*.

Daubert–Joiner–Khumo and Franzese sentences), thus increasing its chance of validity and utility.

CONCLUSIONS

In this chapter, the technique and some of the problems surrounding the practice of criminal profiling in Italy have been discussed against a backdrop of preliminary observation concerning the phenomenon of serial murder in Italy. Also considered was the concept of a crime analyst and the role such an expert may serve in the Italian criminal justice system. It is argued that a crime analyst can contribute in a two-tiered fashion to the criminal justice system by providing input into the traditional investigative phase as well as the prosecutorial/trial phase.

In the trial phase, the input of a crime analyst may be viewed as introducing non-traditional scientific evidence *(3)*. Thus, it is argued that a crime analyst's expert opinion can be presented in many ways. The first way is through the methodical application of research principles to the specific issues of a case under consideration. This avenue can be considered a direct application as it compares the specific crime behaviors present in a given case with those involved in similar crimes. The second way is through narrative testimony wherein some broader explanation of currently existing research relative to the crime can be provided. Thus, in this capacity, a crime analyst provides some generic explanation of a criminological phenomenon and how behaviors in such crimes typically manifest themselves. The third way is through the provision of a criminal profile that involves a systematic consideration of the geographical and *modus operandi* evidence concerning a crime to provide the court with some contextual information for appreciating the facts and behaviors evident in a crime. The authors argue that such expert opinion could assist a court or jury by providing greater insight and understanding of a crime phenomena that may otherwise be misunderstood. To this end, the authors in collaboration with other scholars are undertaking research into Italian serial violent crimes by exploring geographical patterns as well as any inherent links between offender characteristics and crime scene behaviors. The ultimate purpose of this work will be to assist crime analysts in answering questions in an expert witness capacity in criminal cases in the future.

ACKNOWLEDGMENTS

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Chapter 13

Criminal Profiling and Public Policy

Jeffrey B. Bumgarner

Summary

Over the past 25 years, criminal profiling as a tool for solving crimes has been popularized with the public through literature, film, and television. Additionally, profiling's successful contribution to the resolution of a few high-profile cases has also served to increase the practice's standing in the public square. But fundamentally, the fate of criminal profiling as a tool of law enforcement is a public policy issue. As such, it is the various apparatuses of government that will dictate the scope and regularity of its use. The executive, legislative, and judicial functions of government in the United States and other nations all have particular roles to play in the proliferation or diminution of profiling as a practice. Law enforcement and mental health practitioners are not the only criminal profiling stakeholders. Those connected to the emerging discipline of criminal profiling would do well to remain attuned to their broader constituencies in the public policy arena—namely, those who craft criminal justice public policy, those who would fund it, and those who would sanction its legality.

INTRODUCTION

Much has been written and done to advance the discipline of criminal profiling. In the arena of scholarship, social and behavioral scientists have explored varying models and techniques of profiling and have put the effectiveness of the variations to the test through research. Criminal justice practitioners have also advanced the discipline by frequently relying on profiling techniques in their criminal investigations—particularly for serial violent crime. Furthermore, practitioners in the field have formed professional associations and have developed applied training curricula for profiling.

Although it has not always been the case, there is growing cooperation between academia, relevant health professionals, and criminal justice professionals to leverage profiling techniques for maximum usefulness without claiming profiling as a panacea for all criminal investigations. In other words, profiling is increasingly seen as a tool, limited in utility to be sure, but nonetheless helpful in many investigative and certain other criminal justice contexts.

Criminal justice officials in many countries around the globe are free to use or reject criminal profiling techniques as they see fit; for them, the only concern is whether the techniques help identify criminal offenders. However, in democratic countries (especially those of British origin, such as Australia, Canada, the United States, and Great Britain itself), there is at least one other very important factor besides utility that goes to the prevalence of profiling in certain kinds of criminal investigations. Broadly speaking, that factor is politics. As a manifestation of the political process in democratic countries, public policy making plays a significant role in the availability and acceptability of criminal profiling techniques for investigative purposes. This chapter will explore the intersection of the public policy process and criminal profiling from an American criminal justice system perspective. However, the broad principles that emerge are transferable to other democratic countries with an English legal tradition and where the tension line between civil liberties and the public's desire for meting out justice is always pulled taut.

THE PUBLIC POLICY PROCESS

Political scientist Thomas Dye defines public policy, in its simplest sense, as whatever governments choose to do or not to do *(1)*. Governments everyday elect to pass some laws and not pass others; they elect to spend money on particular types of programs but not on others; and they selectively choose enforcement of some existing laws as a priority over other laws that are likewise on the books.

The process of determining exactly what should be considered for governmental action is known as setting the agenda. Issues said to be "on the agenda" are those issues that are thought to be pressing and require attention in the form of legislation, funding, or changes in practice through the revision of executive or bureaucratic policies. Agendas are set by way of different processes, some of which are gradual and some of which are acute. The well-known public policy scholar John Kingdon identified three processes that shape the government's agenda: policy concept development, politics, and problems *(2)*. The first process is the gradual accumulation of knowledge gained by experts in a

particular policy area. As time marches on, new generations of policy proposals may take hold until they in fact become matters government chooses to attend to. Kingdon's second process refers to how politics affect the agenda. As he notes, swings in the national mood, ambiguity in public opinion, changes in the presidency, and turnover in Congress all have tremendous potential impact on the agenda. Third, emerging problems have a way of shaping the agenda—especially acute or critical problems that materialize suddenly (or seemingly so) and appear to have dire consequences if ignored.

In the United States and other western democracies, there are many government actors who participate in the public policy process; there are also many non-government actors influencing the public policy as well. Key governmental actors, at the federal level in the United States, include members of Congress and congressional staffers, the President and his or her staff, high-level political appointees, judiciary, and the bureaucracy (i.e., the civil service). Non-governmental actors include interest groups, lobbyists, think tanks, academia, the media, and the public at large *(3)*. Although entire books have been written about the influence of each of these actors and much could be said of them all, this chapter will focus specifically on the activities of American government actors as related to the practice of criminal profiling.

Through public policy decisions, government informs the public of what is officially thought to be useful, valuable, important, and even necessary. Therefore, public policy or the lack thereof concerning criminal profiling is an expression of the official utility ascribed to it by the government. If government does or says nothing about a public policy issue, different possible explanations for inaction exist. One possibility is that the government simply does not care enough about the overriding issues (violent crime, justice for certain classes of citizens, etc.) to enact policies that speak to those issues. After all, when government codifies desired public policy outcomes into criminal law, it conveys the message to the citizenry that certain types of behaviors are forbidden and worthy of punishment. Such laws are also evidence that the government was concerned enough about the overriding issues addressed in such laws to legislate the matter in the first place *(4)*. The last objective—conveying a message to the citizenry that the government has engaged a particular issue—is sometimes as important or more important (for its symbolism) than the substance of the laws or the substantive effects those laws have on behavior. The law is a moral teacher.

However, government inaction on some policy issues may be due to other factors besides mere impassivity. The government may be unaware of a problem that could be mitigated through the adoption of public policy. Or the government may be aware of a problem but unaware of a viable public

policy solution. Still another explanation is that the government is aware of a problem that could be effectively confronted through public policy but has been forced to triage other problems to the front of the public policy agenda. In other words, the limited resources of the government compel it to choose winners and losers among issues vying for attention. Finally, a last explanation of government inaction is a lack of confidence in the effectiveness of public policy choices. The government may recognize that a problem exists; however, in the absence of solutions that are assessed to be viable, government may choose to table the tackling of that problem until technology, the environment, or the politics surrounding the issue change for the better and become conducive to the government's success.

What follows is a sampling of how different actors of government in the United States have approached criminal profiling.

THE EXECUTIVE BRANCH

At the federal level, the American Executive Branch includes the President at the top, as well as his or her political appointees in the cabinet level and other federal agencies, as well as the large and far-flung federal bureaucracy consisting of lower-level appointees and civil servants. The President is an independent actor in the American political system. He or she does not come from the ranks of Congress as a Prime Minister comes from Parliament. Under the US Constitution, the President of the United States, through the machinations of the bureaucracy, is responsible for enforcing the federal laws of the land. This principle extends to state and local government as well. Law enforcement in the United States is a function of the executive branches at all levels of government.

Much has been written about the role of bureaucrats in the public policy process. Woodrow Wilson, one of the fathers of the modern discipline public administration, identified the bureaucracy as no less than equally important as are elected officials among public policy-making actors *(5)*. Although the elected officials in the legislative and executive branches develop broad programmatic and legislative initiatives, it is the bureaucracy that puts flesh on those initiatives. The bureaucracy creates the rules and procedures that govern the implementation of Congress's will that is expressed through legislation. The bureaucracy adjudicates the rules—that is, bureaucracy exercises discretion in the scope of rule implementation. Finally, bureaucracy manages the day-to-day operations—routine and critical—of the government *(3)*.

In the criminal justice context, law enforcement bureaucrats have long possessed considerable discretion in how they do their work. This discretion

even permits circumventing the will of the elected officials in the executive and legislative branches to whom the bureaucracy answers *(6)*. Classic theories of bureaucratic activity suggest that government agencies tend to operate in ways that reflect the policy preferences of other political actors—namely, the legislature that passes laws and appropriates funds and the chief executive (and his or her political subordinates) who issue executive orders and directly supervise the bureaucracy's leadership ranks within the chain of command. However, some have observed that law enforcement bureaucratic activity tends to center around identified problems *(6)*. There is no significant political debate about the need to identify and apprehend serial killers. There may be a legitimate political debate about the role of federal law enforcement in such efforts, but that debate would receive little attention when an agency steps up to the plate and indicates that it is going to help resolve a high-profile, alarming crime problem such as violent serial crime. Utilitarian arguments tend to trump philosophical and legal questions about federalism and the scope of federal police power under the Constitution's Interstate Commerce clause. In fact, the power of law enforcement bureaucrats is so strong, and the utilitarian arguments for their involvement in high-profile cases can be so compelling on the surface, it does not typically take very long before the political apparatus of government catches up and formally bestows powers and responsibilities that were already being exercised. By that time, the bureaucratic agency and the public alike have long since become comfortable with the new agency roles.

HIGH-PROFILE OCCURRENCES

Nothing drives the public policy crime-fighting agenda like high-profile criminal events. Highly publicized events create an impression of crisis. Genuine crises do exist from time to time, and as such, they are likely to be highly publicized. But more often than not, no actual crisis exists in fact. But that does not stop the initiation of a public policy response. A classic criminal justice example of this is the kidnapping of the Lindbergh baby in 1932. On March 1, 1932, the 20-month-old son of aviation hero Charles Lindbergh was kidnapped from the Lindbergh home in Hopewell, NJ. An initial ransom note for $50,000 was left on the windowsill of the nursery room where the toddler had been sleeping. Several other ransom notes would follow during the month of March with amended demands from the kidnappers. During this time, the US Justice Department's Bureau of Investigation [later renamed the Federal Bureau of Investigation (FBI)] provided special agents to support the investigation of the New Jersey State Police. In May 1932, the toddler's body was found. The cause of death was determined by the coroner to be blunt force trauma to the

head. The American public was outraged. This was a single homicide in a nation of millions. And yet, through this isolated but highly publicized incident, the public demanded something be done by their federal government.

In September 1933, President Franklin Roosevelt directed the Bureau of Investigation to cooperate with the kidnapping/murder investigation in any way it could. Roosevelt declared that the Bureau of Investigation would have exclusive federal jurisdiction to assist in this case. This was an important development as Treasury Department special agents had also been providing extensive amounts of assistance. Through considerable criminal investigative effort, and with the assistance of modern and scientific investigative techniques spearheaded by the Bureau of Investigation, kidnappers were identified and an arrest was made. German immigrant Bruno Hauptmann was convicted of kidnapping and murder in February 1935 and sentenced to death. A little over a year later, he was executed in New Jersey's electric chair. Because of the public outcry toward this crime and the Bureau of Investigation's successful—and at times leading—contribution toward the resolution of the case, Congress passed the Federal Kidnapping Act in 1932 making kidnapping a federal crime when the act involves crossing state borders.

Because of this single criminal event, the President of the United States determined that one federal agency—the Justice Department's Bureau of Investigation—would be the lead federal law enforcement agency over all others. Furthermore, the Congress of the United States passed legislation that federalized the crime of kidnapping—an offense previously understood to be the responsibility of state and local enforcement under the general police powers granted to the states by the Constitution. In fact, Congress's authority to pass the Federal Kidnapping Act was rooted in its ability to regulate interstate commerce and was on very tenuous ground at the time *(7)*. But tenuous legal ground was not going to dissuade the US Congress from responding to the "crisis" of children being vulnerable to kidnap and murder.

Ever since the Lindbergh kidnapping and the expanded federal authority to investigate such crimes, the FBI and other federal agencies have demonstrated an eagerness to move into areas previously considered the exclusive province of state and local law enforcement. In doing so, federal agencies often establish a niche to bring to the table—a niche made possible through the enablers in Congress and the executive branch through the provision of resources.

One niche developed over time is the federal government's (and particularly elements of the FBI) expertise to assist state and local law enforcement with investigating serial violent crime through behavioral analysis and other forms of criminal profiling. In the 1970s and 1980s, the United States was plagued with growing levels of violent crime. In an effort to be responsive

to the violent crime problem in the country, the FBI established in 1984 the National Center for the Analysis of Violent Crime (NCAVC). The center was established at the FBI Academy in Quantico, VA, and was to be an information clearinghouse for the nation's thousands of law enforcement agencies. Eventually, staff members gained expertise in matters such as child abduction, serial murder, serial sexual assaults, and other unusual or peculiar violent crimes *(8)*. Gradually, the center became more than a library or research facility. Special agents assigned to the center were employed in the field—not only to collect data for research but to help solve crimes.

Today, the NCAVC is one of the FBI's most visible programs. It is divided into three component parts:

1. Behavioral Analysis Unit (BAU).
2. Child Abduction Serial Murder Investigative Resources Center (CASMIRC).
3. Violent Criminal Apprehension Program.

All three components utilize crime pattern analysis for charting general violent crime trends and tendencies, as well as solving specific cases of violent crime where the employment of such knowledge can be a factor in solving the case. However, it is the BAU (and its predecessors) that is most associated with the FBI's psychological profiling function popularized in fictional works such as Tom Harris's *Silence of the Lambs* and *Red Dragon*. According to the FBI, the mission of the BAU is

> . . . to provide behavioral based investigative and operational support by applying case experience, research, and training to complex and time-sensitive crimes, typically involving acts or threats of violence.

> . . . BAU assistance to law enforcement agencies is provided through the process of "criminal investigative analysis." Criminal investigative analysis is a process of reviewing crimes from both a behavioral and investigative perspective. It involves reviewing and assessing the facts of a criminal act, interpreting offender behavior, and interaction with the victim, as exhibited during the commission of the crime, or as displayed in the crime scene. BAU staff conduct detailed analyses of crimes for the purpose of providing one or more of the following services: crime analysis, investigative suggestions, profiles of unknown offenders, threat analysis, critical incident analysis, interview strategies, major case management, search warrant assistance, prosecutive and trial strategies, and expert testimony. *(9)*

As a matter of public policy, the FBI has made behavioral profiling an imperative tool in tracking the most violent of America's criminal offenders. Furthermore, through the establishment of internal priorities and organizational structuring, the Bureau carved out a primary role in the delivery of this imperative tool. To some extent, the FBI followed the example of government bureaucracies generally in that the BAU (and its predecessor unit) helped create its own

demand. And to be sure, the demand is now there. Whatever misgivings some in Congress may have about the growing federal law enforcement influence and jurisdiction in criminal justice matters generally, and whatever resentment some in the state and local law enforcement communities may have harbored for the same, the FBI is increasingly called on for its expertise in these matters. In fact, each year, the NCAVC responds to over 1500 requests for assistance from law enforcement agencies around the country and around the world *(10)*. As a public policy matter, it appears that the criminal profiling services of the FBI will only broaden.

THE LEGISLATIVE BRANCH

The US Congress has not had much to say about criminal profiling as a law enforcement tool. This perhaps has something to do with the fact that the American tradition is for the legislative branch to extend to the executive branch of government a fair share of latitude in operating as it sees fit. Enforcing the laws of the land is an executive function, and how law enforcement goes about doing it is generally for law enforcement to decide. Even so, Congress has on occasion waded into the issue of criminal profiling through legislation and through its oversight function.

One pervasive example of this was Congress's desire in 1998 to create a functional unit within the FBI to specifically serve as a resource center for investigating the serial murder of children. The Protection of Children Against Sexual Predators Act of 1998 required the FBI to establish the Morgan P. Hardiman Child Abduction and Serial Murder Investigative Resources Center (CASMIRC) as a unit with the NCAVC. The legislation read in part:

> (b) Purpose. – The CASMIRC shall be managed by the National Center for the Analysis of Violent Crime of the Critical Incident Response Group of the Federal Bureau of Investigation (in this section referred to as the "NCAVC"), and by multidisciplinary resource teams in Federal Bureau of Investigation field offices, in order to provide investigative support through the coordination and provision of Federal law enforcement resources, training, and application of other multidisciplinary expertise, to assist Federal, State, and local authorities in matters involving child abductions, mysterious disappearances of children, child homicide, and serial murder across the country. The CASMIRC shall be co-located with the NCAVC.

> (c) Duties of the CASMIRC. – The CASMIRC shall perform such duties as the Attorney General determines appropriate to carry out the purposes of the CASMIRC, including -

1) identifying, developing, researching, acquiring, and refining multidisciplinary information and specialities to provide for the most current expertise available to advance investigative knowledge and practices used in child abduction, mysterious disappearances of children, child homicide, and serial murder investigations;

2) providing advice and coordinating the application of current and emerging technical, forensic, and other Federal assistance to Federal, State, and local authorities in child abduction, mysterious disappearances of children, child homicide, and serial murder investigations;

3) providing investigative support, research findings, and violent crime analysis to Federal, State, and local authorities in child abduction, mysterious disappearances of children, child homicide, and serial murder investigations;

4) providing, if requested by a Federal, State, or local law enforcement agency, on site consultation and advice in child abduction, mysterious disappearances of children, child homicide and serial murder investigations; . . .

5) conducting ongoing research related to child abductions, mysterious disappearances of children, child homicides, and serial murder, including identification and investigative application of current and emerging technologies, identification of investigative searching technologies and methods for physically locating abducted children, investigative use of offender behavioral assessment and analysis concepts, gathering statistics and information necessary for case identification, trend analysis, and case linkages to advance the investigative effectiveness of outstanding abducted children cases, develop investigative systems to identify and track serious serial offenders that repeatedly victimize children for comparison to unsolved cases, and other investigative research pertinent to child abduction, mysterious disappearance of a child, child homicide, and serial murder covered in this section; . . . *(11)*

Through this legislation, Congress essentially ordered to the FBI to develop further a criminal profiling expertise in so far as the abductions, sexual assaults, and homicides of children were concerned. It further required the FBI to share its expertise with the broader law enforcement community.

Congress continued to reflect its belief in the value of criminal profiling and other specialized investigative techniques when it statutorily authorized the FBI to investigate serial killing, including those not involving children. Through Title 28, Section 540B, Congress in 2002 clarified the authority for the FBI to assist state and local law enforcement in tracking serial killers. The statute reads

(a) In General. – The Attorney General and the Director of the Federal Bureau of Investigation may investigate serial killings in violation of the laws of a State or political subdivision, if such investigation is requested by the head of a law enforcement agency with investigative or prosecutorial jurisdiction over the offense.

(b) Definitions. – In this section:

(1) Killing. – The term "killing" means conduct that would constitute an offense under section 1111 of title 18, United States Code, if Federal jurisdiction existed.

(2) Serial killings. – The term "serial killings" means a series of three or more killings, not less than one of which was committed within the United States, having common characteristics such as to suggest the reasonable possibility that the crimes were committed by the same actor or actors.

(3) State. – The term "State" means a State of the United States, the District of Columbia, and any commonwealth, territory, or possession of the United States.

In this law, Congress appears to acknowledge that the FBI possesses some institutional expertise concerning serial offenders and that the ability of the NCVAC is a resource worth sharing with state and local criminal justice officials.

Although Congress has recognized the capability of the FBI to further the discipline of criminal profiling investigative techniques, it has also provided funding for local communities directly to develop their own profiling capacities. For example, under Title 42 of the United States Code, which deals with health and welfare issues, Congress provided $20,000,000 to local law enforcement agencies from Fiscal Years 1996–2000. Through Section 14151, Congress sought to use this money to

(A) expand and improve investigative and managerial training courses for State, Indian tribal, and local law enforcement agencies; and

(B) develop and implement, on a pilot basis with no more than 10 participating cities, an intelligent information system that gathers, integrates, organizes, and analyzes information in active support of investigations by Federal, State, and local law enforcement agencies of violent serial crimes.

Congress also went on to provide training grants totaling millions of dollars under Title 42, Section 13992, for state court personnel—specifically judges. The purpose of those grants was to breed in state judges around the country a familiarity with current research and operating theories about violence against women, including serial violence. Among other things, the training was intended for the purpose of educating judges and court personnel about

...the psychology of sex offenders, their high rate of recidivism, and the implications for sentencing;...

...the psychology and self-presentation of batterers and victims and the implications for court proceedings and credibility of witnesses;...[and]...

...recognition of and response to gender-motivated crimes of violence other than rape, sexual assault and domestic violence, such as mass or serial murder motivated by the gender of the victims;...

Through this legislation and other laws, Congress recognized that its public policy pronouncements and authorizations concerning the utility and appropriateness of criminal profiling techniques can be voided by an uninformed judiciary exerting its own influence in the public policy process. If judges lack either faith or understanding relating to the validity of profiling techniques and the development of profiler expertise, then any contributions Congress intended to make to criminal justice effectiveness can be made null and void once the case is presented in court.

THE JUDICIARY

Criminal profiling is typically used to generate suspects. Once suspects are identified, physical evidence is used to tie suspects to the crime scene and to the victims. Profiling itself does not come under a lot of judicial scrutiny because the cases are generally won or lost on the physical evidence. However, occasionally, the interpretation of the physical evidence through the lens of behavioral analysis is required—particularly when establishing pattern and motive for serial offenders. In this context, courts in the United States have demonstrated mixed opinions on the value of behavioral profiling and pattern analysis as evidence-building tools of law enforcement.

For example, in the case of *Utah v. Cody Nielsen* in 2003, a criminal profiler was permitted by a judge to testify at the sentence hearing for a convicted murderer about trophies that killers sometimes take from their victims and about the desecration and dismemberment of the victim's body. However, the judge would not permit the profiler to draw specific conclusions about Nielsen himself from the evidence. The limited testimony of the profiler was upheld on appeal.

However, in the case of *New Jersey v. Steven Fortin* (1999), an appellate court found the infusion of profiling expertise in the sexual assault and murder trial of Fortin problematic and reversed the conviction. In this case, a criminal profiler who was deemed an expert in ritualistic crimes used "linkage analysis" to ascertain that the person who committed a subsequent crime in Maine (to which Fortin had already pled guilty) also committed the crimes in this particular case in New Jersey and testified to such. The court acknowledged that the expert in this case, a former FBI agent nationally recognized for his work and publications in the field, identified at least 15 similarities between the current and subsequent offense. The court also acknowledged that the practice

of analyzing crimes for commonality is a useful investigative tool. However, it found that such analysis could not be exalted to the level of "other crimes evidence" in this case. The New Jersey appellate court, in an opinion reflective of the skepticism held by courts all across the country, wrote in part:

> We conclude that the same detailed analysis regarding admission of scientific evidence is applicable and necessary in determining whether linkage-analysis expert testimony is admissible. Theories or methods of explaining human conduct and behavior have consistently been subject to significant scrutiny and analysis by our courts when admission is sought . . . The admission of linkage-analysis testimony has serious consequences, as it is essentially ultimate-issue evidence. Here, defendant has admitted to the [subsequent sexual assault]. The State proposes for [the profiling expert] to testify that the same person who committed the Maine assault also committed the [present case] murder. The jury could easily interpret that testimony as an expert conclusion that defendant committed the [present case] murder. Whether the jury accepts that testimony is a different issue. Our Supreme Court has viewed such evidence with skepticism:

> We have repeatedly and consistently recognized that a jury's determination of criminal guilt or innocence is its exclusive responsibility . . . A jury's verdict of ultimate criminal liability can never be equated simply with its determination of underlying facts; the determination of guilt or innocence transcends the facts on which it is based, no matter how compelling or inexorable those facts may be . . . The determination of facts that serve to establish guilt or innocence is a function reserved exclusively to the jury . . . Hence, an expert's testimony that expresses a direct opinion that defendant is guilty of the crime charged is wholly improper.

> Our examination of the authorities and literature authored by [the expert profiler] convinces us that a linkage analysis as a foundation for the expert behavior identification testimony proffered in this case is wholly inappropriate.

In essence, the New Jersey appellate court found that the testimony of a nationally renowned criminal profiler was rooted in under-substantiated, pseudo-scientific craft.

Of course, the Fortin case was a criminal adjudication. The standard of proof for criminal cases in the United States is "proof beyond a reasonable doubt." A considerably lower standard of proof is required in civil cases, namely a "preponderance of the evidence." This standard of proof essentially requires that a judge or juror be more sure than not of a particular judgment (i.e., 51% certainty). With such a low threshold, profiling evidence has had little trouble being accepted. For example, in 2000, the family and estate of Sam Sheppard sued the State of Ohio for Sheppard's wrongful conviction and imprisonment. In 1954, Sheppard had been convicted of murdering his wife. He served 10 years in prison before his conviction was overturned. He was

tried again in 1966 and acquitted. He died in 1970. Sheppard actually served as the inspiration for the television series and motion picture *The Fugitive*.

In suing the State of Ohio, the Sheppard family wanted to secure a judicial ruling proclaiming Sheppard's innocence by determining that another person had committed the crime. The family's theory was that handyman Richard Eberling, who occasionally worked odd jobs for the Sheppards, had committed the act. The family put forth a forensic psychiatrist who testified that the crime scene photographs and other evidence were indicative of a sexually sadistic assault and that Eberling fit the profile *(12)*.

The State of Ohio offered the testimony of a former FBI agent/profiler as its expert witness. The ex-agent stated that the trauma injuries to the victim's head were not consistent with sadistic sexual assault but rather with a domestic homicide. He further stated that incongruities between the level of violence perpetrated against the victim and the disruption to the room where the attack took place suggested that the crime scene had been staged—presumably by Sheppard *(13)*. The civil jury in that case found the ex-agent's testimony sufficiently compelling that it could not even say that the preponderance of evidence supported Sheppard's innocence. Therefore, the State of Ohio was not liable for wrongful imprisonment. Just as important as the verdict was the fact that the court permitted the expert profiling testimony of both the plaintiff and the state to be introduced. This deference to criminal profiling expertise in a civil case was significant for that fact alone, regardless of the outcome.

CONCLUSIONS

For all the attention given to the broad issue of crime by the US Government in the 1980s and 1990s and before, relatively little government action has been directed toward the development and facilitation of criminal profiling as a discipline. Congress has largely left the issue to the executive branch where some segments of the federal bureaucracy—particularly in the FBI—have self-generated expertise and regular opportunities for application.

But there has certainly been no political groundswell for significant expansion of federal criminal profiling capacity. Monies today are directed toward other hot-button issues such as the war against terrorism and bolstering America's intelligence capabilities. To the extent that behavior profiling and pattern analysis have received the attention of Congress or the White House recently, it has been within the context of combating terrorism and developing terrorist profiles.

Although it is true that law enforcement recognizes criminal profiling as an important tool of criminal investigation *(14)*, the relatively scant attention

paid to profiling as a public policy matter suggests that some key government actors lack confidence in criminal profiling or that prospective criminal profiling initiatives have simply had to give way to other priorities determined to be more urgent. The former is certainly a possibility as a partial explanation in light of the highly visible botched investigative efforts involving the use of profiling during the Olympic Park bombing and anthrax letter investigations in 1996 and 2001, respectively. However, it is more likely that the attention of public policy makers is simply elsewhere, and spite or suspicion directed at the discipline has little to do with it.

In the near future, behavior profilers and others hoping to advance the discipline through public policy and funding will likely need to join themselves at the hips with other politically visible (but more parochial) causes including anti-terrorism initiatives, proactive school shooter assessments, and anti-predator efforts targeting pedophiles. In fact, there has already been movement in this direction *(15,16)*. Doing so will enable the broader field of behavioral profiling to continue to develop its literature base and demonstrate its utility in narrow ways until that day when government actors, and the public, have the luxury to once again preoccupy themselves with the problem (perceived or real) of serial violent crime.

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Chapter 14

The Observations of the French Judiciary

A Critique of the French Ministry of Justice Policy Report into Criminal Analysis

Laurent Montet

Summary

Over the past two decades, interest in the technique commonly known as criminal profiling has steadily grown in France. Owing to many claimed controversies involving profiling, the French Ministry of Justice published in 2003 a report discussing its recommended use. This chapter critiques aspects of this report and argues that its findings may foster an undesirable monopoly of criminal profiling in the French criminal justice system that is unlikely to genuinely resolve the raised problems and may in fact stifle the valid scientific development of profiling.

INTRODUCTION [††]

On July 30, 2003, the French Ministry of Justice published its first official report concerning the practice of criminal analysis and criminal profiling in France[*] entitled *Analyse criminelle et analyse comportementale*[†] *(1).*

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[*] At the time of publication, the report by the French Ministry of Justice was publicly available through the Web site address: http://www.justice.gouv.fr/publicat/rapportdacg0703.pdf.

[†] Accompanying the full version of the report was an abridged four-paged summary *(4)*.

[††] For a brief discussion concerning the operation of the French criminal justice system please refer to the Appendix at the end of this chapter. The editor has contributed this overview to assist readers in understanding the context of the chapter.

The authors of this report comprised a working group of officers from the judiciary, police service, and the Ministry of Justice.[‡] One of the central objectives of this report was to recommend procedures to facilitate greater consistency in the way crime analysis and criminal profiling techniques are employed in the French criminal justice system. This objective evidently stems from the diverse and sometimes contradictory research and practices surrounding the use of profiling in the French criminal justice system. The report begins by describing crime analysis and goes on to explore the origins of the practice. It then discusses how profiling techniques may be used in the French criminal justice system based on a comparative examination of procedures adopted in other nations. The report concludes by proposing six recommendations aimed at formalizing and thus better regulating the practice of criminal analysis. Most notable and contentious among these is a description concerning what constitutes criminal analysis and an examination of the professional status of behavioral analysts and how their work may be integrated into French criminal procedure.

In the opinion of the author, the report of the Ministry of Justice is flawed in that it has minimized the valid scope and application of criminal profiling that it conveniently equates with the term "criminal analysis." The precise rationale underlying these conclusions are not clear but may relate to many factors. One being the perception of controversies stemming from the use of criminal profiles in France *(2)* that may have undermined the confidence that police personnel and/or judiciary officials share in the technique. Another may be related to the media sensationalism that typically surrounds the technique that may be perceived as disruptive to the activities of legitimate criminal investigators *(3)*. A third possibility may be even more fundamental. Namely, that from a nation that spawned *Descartes* and *Voltaire*, criminal profiling is perceived as more analogous to an ethereal art and thus not sufficiently scientific.

The objective of this chapter is to examine some of the contentions espoused in the French Ministry of Justice report concerning criminal profiling *(1)*. These contentions include (i) that a clear conceptual definition of criminal profiling was unavailable, (ii) that profiling is an invention of the FBI concerned with serial killer investigations, (iii) that profiling has caused conflicts in the French judicial system, and (iv) that the solution to this problem is to restrict the practice of profiling to police personnel only. The rationale and, more importantly, the legitimacy surrounding these contentions will be examined in turn.

[‡] It should be noted that the recommendations of the report appear orientated towards judiciary officers such as the *magistrat* and *juge d' instruction*.

No Precise Definition for Criminal Profiling?

Perhaps the most perplexing assertion contained in the report is its postulation that no precise definition exists to explain what criminal profiling is *(1, p. 10)*. Instead the report simply states that "criminal analysis, sometimes called 'criminal profiling' is based upon the analysis of behaviors" [approximate translation] *(4, p. 2)*. Indeed, the very title of the report when translated (approximately) reads as "An evaluation of the performance of criminal analysis" *(1, p. 1)*. Throughout its pages however, the report avoids (where possible) using the term "criminal profiling" and, instead, opts for the use of the term "criminal and/or behavioral analysis."

The problem with this first assertion is that a large amount of published, readily accessible literature exists including material from Interpol, the FBI, and various international scholars, which all describe what constitutes criminal profiling *(5–13)*. Perhaps some argument might be advanced to the effect that some of this literature is not available in French, but this would not explain the apparent oversight of two books published in French by the author who offers exposition on what constitutes criminal profiling *(14,15)*. Indeed, it is arguably almost common knowledge in contemporary forensic psychology and criminology disciplines that criminal profiling is a technique that attempts to predict the characteristics of an offender or offenders of a crime based on an evaluation of the behaviors exhibited in the crime(s) *(16,17)*. It is true that there are indeed variations in the exact definitions adopted by differing authors/commentators (analogous to variations observed in definitions used to describe virtually any concept). It is also true that there exists some variation in the extent of the activities perceived as falling within the scope of criminal profiling. However, irrespective of these variations, there exists a clear consensus surrounding the basic/core conceptualization of what criminal profiling is and involves *(10)*.

Accordingly, it is surprising that, in its report, the French Ministry of Justice fails to acknowledge any of the previously existing definitions and explanations concerning criminal profiling and, more fundamentally, fails to adopt the term "criminal profiling." One possibility for this may be related to a cultural aversion toward sensationalistic media depictions associated with criminal profiling that seem to typically originate from North America *(3)*. Another possibility could be an aversion to the perception of profilers as elite police who are superior to regular law enforcement personnel (or judiciary officials), and thus, the reluctance to embrace the term may be an attempt to counter some of the professional rivalries arising from such perceptions *(18)*.

Whatever the reason, what appears evident is that through the adoption of the term "criminal analysis," some attempt is made to moderate the fanciful image of criminal profiling and instead foster a more scientifically conservative one. Although this is certainly a commendable sentiment, it seems unlikely that this objective will be effectively accomplished through some variation in terminology. Instead, it arguably only creates new problems in that the term "criminal analysis" is arguably too broad in its conceptualization and does not meaningfully reflect any of the specific analytic procedures inherent to its practice. Indeed, the French Ministry of Justice report instead of defining the term criminal analysis merely refer to it as "a technique of police investigation support combining traditional investigation protocols, objective data from the judiciary procedures and a detailed knowledge of psycho-criminology" [approximate translation] *(4, p. 4)*. This description does not adequately convey *what* criminal analysis is or consists of. Instead, it merely indicates that it is a "police investigative support" *(4, p. 4)* but does not elaborate on how or in what capacity this support is rendered. Nor does it venture into describing what is inherent to the practice of criminal analysis such as, for example, the prediction of characteristics concerning an offender responsible for the crime under investigation.

A second important nuance involving the term "criminal analysis" and its use in the report is that it describes it as being a "police investigative support" *(4, p. 4)*. This reflects a narrow understanding of the practice as something only within the province of police activity. Not surprisingly perhaps, this description serves to exclude the skills that other professionals may possess most notably forensic psychiatrists, psychologists, and criminologists. All such professionals can also arguably lay claim to being skilled in the analysis of crime behaviors *(10)*. Indeed, a further ambiguity possibly related to the attempted constriction of the skill basis for criminal analysis is that many of these terms go unexplained. For example, what exactly constitutes "psycho-criminology" or what is meant by "objective data from the judiciary procedures" is simply not explained.

Momentarily setting aside the aforementioned issues, there is one fundamental problem surrounding the assertion contained in the report that no definition for criminal profiling appears available. If the authors of the report maintain this position and in the absence of them offering a clear conceptual definition, it is not clear what the precise topic of the report is. This then begs the question: What is the logic in producing a ministerial report that purports to evaluate the professional status and practice of a technique that is neither clearly defined nor explained?

THE INVENTION OF CRIMINAL PROFILING BY THE FBI?

The report also appears to suggest that criminal analysis has been practiced in France since 1994 and is an established or "mastered" technique *(4, p. 2)*. By contrast, however, the concept of "criminal profiling" in France appears to be portrayed as a comparatively recent innovation still in a state of development and experimentation *(4, p. 2)*. The report appears to further suggest that criminal profiling originated in the United States with the work of psychiatrist Dr James Brussels in profiling a serial bomber *(14)* but was then developed and used by the FBI predominantly in the investigation of crimes such as serial murder *(1, p. 9)*.

While these contentions may initially appear sound when critically examined, their tenets seem inconsistent. First, many well-known and regarded judiciary experts within France have been engaged in activities conceptually analogous to profiling for several decades such as the personnel attached to crisis/hostage negotiation units (GIGN—Intervention Team of National Gendarmery) who engage in the evaluation (i.e., profiling) of offender characteristics and attributes in the context of hostage negotiations. Another example is the work of the author whose activities have been undertaken since around 1995. As a consequence, portrayals of criminal profiling within France as a recent concept still within a state of development seem inconsistent as these examples enjoy a closely equal or longer history than "criminal analysis" that is described as a mastered technique.

It is also curious that the French Ministry of Justice evidently appears to consider criminal profiling as an invention of the FBI. Although some authors do appear to promulgate this perception *(19,20)*, there are numerous historical precedents that serve to indicate that the concept of profiling is neither new nor revolutionary *(10,13,15,18)*. While examples of profiling can be found in historically infamous crimes such as the Whitechappel murders (aka Jack the Ripper) in 1888 *(21)* even earlier historical illustrations of the profiling concept can be found in ancient works such as Plato *(22)* and the Bible *(23)*.

It is difficult to decipher what the French Ministry of Justice may be attempting to achieve with their contentions. The author considers that any combination of three factors may possibly account for this. The first possibility may, again, relate to the aversion of the sensationalistic image of profiling and its potential utility. That is, by portraying profiling as a recent experimental innovation of the FBI predominantly utilized in serial murder investigations, the

technique is characterized as something that is not internationally recognized or applicable.[¶]

A second possible factor is that through such assertions the transposition of research and techniques external to France may be discounted. This may facilitate the view that French authorities need to independently develop their own techniques thus allowing opportunity for monopolization by French authorities such as, for example, the police who can control with whom they work. That is, by characterizing profiling as something uniquely American,[‖] it is difficult to support its valid transposition to France given the inherent differences between the countries, the cultures, and prevailing criminological demographic patterns.

A third factor may be that if the Ministry of Justice wishes to exclusively control the practice of profiling by confining its use to police personnel, then the identification and emulation of another police organization that has been using profiling seems an ideal model to this end. Accordingly, any portrayal of criminal profiling as not exclusively associated with the FBI may not reconcile well with a proposal for its exclusive use by policing agencies within France.

Perhaps the greatest irony surrounding these contentions contained in the report concerns its apparent contradictions. For example, in posturing that profiling is a police technique used in serial murder investigations, the first-cited example ironically overlooks that this involved an external consultant (i.e., non-police member) in the form of Dr Brussell profiling an individual engaged in a bombing campaign.

DISRUPTION TO THE FRENCH JUDICIAL SYSTEM

A third proposition advanced in the report is to the effect that the practice of criminal profiling in France generates inconsistency in the operation of the French criminal justice system *(4, p. 3)*. Examples of inappropriate and sometimes even unlawful use of criminal profiles are not unheard of or even unique to France *(25–27)*. However, critical consideration needs to be given to the valid application of criminal profiling as well as the contentions contained in the report by the French Ministry of Justice.

[¶] For example, there appears to be some assertion that France does not suffer from certain crime phenomena such as serial murder, and thus, there is argument that profiling is of little relevance *(24)*. Interestingly, when such crimes do occur in France, they appear to be euphemistically described/labeled as the actions of a recidivist or as a killer with multiple victims or an insane individual *(24)*. Thus, if there are no serial murderers in France, then there is no necessity to recognize criminal profiling either.

[‖] As well as ignoring work with arguably similar European pedigree such as the work and research undertaken by Interpol *(5)* or in the United Kingdom *(8,12)*.

Possibly, the most curious aspect surrounding this proposition is that neither of the case examples cited in the report are arguably illustrative of the technique of criminal profiling *(1)*.§ One case cited appears to relate to an inappropriate use of hypnosis to potentially solicit a confession, whereas the other concerns the qualifications and expertise of a judicial officer in directing the investigation and outcome of a matter. These cases may be demonstrative of some failing in the French criminal justice system (in the circumstances of the particular cases); however, their bearing on criminal profiling in terms of assessing behavior patterns evident in an unsolved crime and predicting the characteristics of the probable offender(s) is unclear.

Another worrisome aspect is that the report does not appear to provide a balanced consideration of the issues. In the context of a report that claims to evaluate and assess issues, it is surprising that it does not appear to provide coverage of case examples where criminal profiling has been used and was, arguably, beneficial in assisting French authorities with their investigations *(14, p. 34)*.

Once again, it is worthwhile considering what rationale may exist to encourage a view that previous applications of criminal profiling in France are a source of disruption to the operative functions of the French criminal justice system. In the opinion of the author, the most likely reason appears to be that such assertions form the base line for subsequent arguments (which will be discussed shortly in the next section) concerning the need for the regulation of criminal profiling in the French criminal justice system.

SOLUTION: CRIMINAL PROFILING BY POLICE PERSONNEL ONLY?

After outlining claimed problems that stem from the use of criminal profiling, it would appear that something of a discrepancy occurs between the solutions the French Ministry of Justice articulate in the full version of their report *(1)* with those in its abridged summary *(4)*. In the summarized report that would, arguably, attract a far higher readership because of its length, a key proposition is that "the profilers **must** [Emphasis added] be policemen subordinated to magistrates" [approximate translation] *(4, p. 4)*. The curious aspect surrounding this proposal is not whether profilers should be subordinated to magistrates or even the merits of suggesting that profilers be only police personnel. Rather, the issue of concern is the manner in which this proposition is presented in the abridged report. Namely, that it could potentially mislead

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§ Transcripts of these cases can be found in the full report *(1, pp. 27–38)*.

a reader (such as a *magistrat* or *juge d'instructon*) into believing that the *only* acceptable use of criminal profiling is by police personnel *(4)*.

The discrepancy concerning this issue is sourced in the observations articulated in the full report wherein it is stated that "the criminal procedure code allows magistrates in charge of the investigation to resort to the judiciary expertise . . . in criminal profiling . . ." [approximate translation] *(1, p. 14)*. The full report additionally states "the fact that a magistrate in charge of the investigation gives an expert this mission is legally possible (art. 81 al.7 and 157) from the [French] Criminal Procedure Code" [approximate translation from French] *(1, p. 14)*. What is objectionable is the impression** conveyed in the abridged version of the French Ministry of Justice report that the use of criminal profiling must only be by police personnel when the penal code under which the French Criminal Justice system operates provides clear provision to allow otherwise.

It seems that there is a perception among the working group who authored the report within the French Ministry of Justice that the use of criminal profiling has led to disruptions in the French criminal justice system. The source of these claimed disruptions are presumably inaccuracies and conflicts in the information yielded by profiles and relied on in guiding investigators to ascertain the truth of a matter under investigation. The solution that the working group suggests will solve these problems involves limiting the use of profiling to only police personnel and thus excluding its use by individuals who, for example, originate from the judiciary corps and are thus independent of the police. By disentangling these propositions, it appears that although the working group are of the view that criminal profiling has led to uncertainty within the French criminal justice system, they do not disapprove of the technique *per se* but merely the individuals whom engage in the provision of criminal profiles. Logically, if the technique was viewed as truly detrimental, then the working group would not suggest its continued use by anyone, let alone police personnel. As a consequence, the underlying premise operating to inform these policy recommendations appears to be that the practice of criminal profiling is valid, but to avoid problems, it should only be undertaken by police personnel.

Regrettably, it would appear that the working group has failed to make a sufficiently incisive evaluation of this issue. It is not clear how the recommendation that only police personnel provide criminal profiles will genuinely solve the problems described by the work group. Instead, it is more likely to merely

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** Indeed, the codified mandates of the French Penal code do not allow for such an express restriction.

foster a monopoly among these individuals who undertake to provide such criminal profiles, namely, police personnel. For example, it is not explained how precisely profiles constructed strictly by police personnel will somehow ensure the validity (i.e., accuracy) of their predictions. Although there is a view that police personnel are the best equipped to undertake profiling [primarily due to their experience with the investigation of crimes *(28)*], empirical scrutiny of this contention has yet to emerge[††] in support of the validity of such a view *(7,29)*.

In the opinion of the author, this proposal by the French Ministry of Justice is unlikely to rectify the perceived problem. That is, whereas differing predictions may be perceived in profiles composed by an external consultant as against the police, the proposed solution will merely reduce circumstances wherein independent differences in opinion may arise. Indeed, in one context, it needs to be asked why contradictions among the predictions of criminal profiles are some uniquely irreconcilable problem for the judicial procedures of the French criminal justice system. Disagreements in the interpretation of forensic evidence between experts abound within numerous disciplinary domains *(30)*. However, disagreements in the evaluation of, for example, DNA matter *(31)* are not seen as justification for recommending policies which will potentially exclude scientists who are not directly within the employ of any policing agency but who may nonetheless possess immense expertise. It is therefore not clear why such problems (in terms of assessing the merits of rivaling evidence or testimony) can not be arbitrated and resolved through the normal functioning of the *magistrat or juge d'instructon.* As the supervisor and guide of an investigation, it is on these officers of the justice system to ultimately determine on behalf of the State the use of information, evidence, and in turn the truth surrounding any crime.

If the Ministry of Justice wishes to promote policies that will genuinely lead to the valid scientific improvement of profiling and rectify problems it believes to have arisen, then policies will need to focus on the core issues. That is, the nature and application of the criminal profiling technique itself. Arguably, the best path for the future will not involve the arbitrary exclusion of potential expertise but rather better qualifications and training among all members of the criminal justice system *(25)*. Arguably too, the judiciary corp has much to offer however further research, development, and training is undoubtedly warranted not just within this division but all members of the system including

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[††] On the contrary, the available scientific evidence indicates that proficient profiling is likely to be sourced in an individual's fundamental capacity for logical and objective analysis and sound comprehension of human behavior *(7)*.

the police, the *procureur*, and the *juge d'instruction* in interpreting and applying the information contained in profiles in a valid manner.

CONCLUSIONS

This chapter has attempted to examine and challenge some of the central observations contained in the report by the French Ministry of Justice. It is unfair to state that the report is wholly unsound as it does make some valid recommendations that may indeed foster better investigations of aberrant violent crimes in France. One example being the introduction of computerized crime recording and tracking systems such as that of ViCLAS originally developed in Canada. However, if the technique of criminal profiling is to truly advance and improve, then its practice must be undertaken in an open and transparent manner that is inclusive rather than exclusive of potential contributors and parties and their respective sources of scientific knowledge and expertise.

It needs to be clarified that the author is not against the concept of regulation *per se* as it is an important part of all professional disciplines. However, regulation must be undertaken and premised on the transparent development of skills, education, and expertise, not on some criterion such as an individual's vocational affiliation *(32)*. For example, the profession of medical practitioners (i.e., doctors) is not based on its members originating from any class or segment of society but is fundamentally underscored by the education and training denoted by the profession. A similar model for regulating training and education needs to be mandated for profiling for the technique to advance. Until such measures are undertaken, policies recommending the regulation of profiling through affiliations to police organizations are unlikely to genuinely progress the technique and instead inadvertently propagate fanciful perceptions of profiling and its value.

APPENDIX

For a better appreciation of some issues discussed in the present chapter, a momentary digression is perhaps necessary to provide some explanation for those readers who may be unfamiliar with the core tenets of the criminal justice system operating in France. It must be noted that the scope of this chapter does not allow for any detailed exposition of this topic, and thus, the following explanation is merely offered as a very rudimentary description designed to highlight some of the fundamental characteristics. The French criminal justice system akin to that of many other European countries (e.g., Italy) has evolved and operates through what is referred to as an *inquisitorial* system. This system is somewhat different to what is typically referred to as the *adversarial* system

encountered in most Anglo-Saxon jurisdictions such as the United Kingdom or the United States.

Possibly, the best method to illustrate and thus appreciate some of these differences is by directly contrasting the two systems. The adversarial system (e.g., North American) possesses an underlying assumption of equality between opposing parties in a matter. These parties are the defense and the prosecution. Both of these parties engage in a process of collecting evidence to support their case that is ultimately presented and argued before a judge who operates from a position of neutrality. These arguments (i.e., the trial) concerning the case are predominantly presented verbally by both of the opposing parties in a public forum before a neutral judge.

In contrast to these fundamental tenets of the adversarial system, the inquisitorial system evolved out of a state role in the investigation and administration of justice. The ideological foundations of the inquisitorial system are not premised on any conception of equality between the parties. Instead, the traditional inquisitorial system operates through an inquiry being conducted by a representative of the state who is not privy and thus a party to the case but does in one sense investigate and determine whether the matter should go to trial and ultimately conducts the prosecution. Traditional characteristics of the inquisitorial process include placing greater emphasis on documentation and an inquiry not typically being conducted in a public venue or debated. Furthermore, the concept of the "defense" is not involved in any capacity in the pre-trial phase. Owing to these fundamental differences, the adversarial model is said to be characterized by possessing a longer trial phase, whereas the inquisitorial system is said to possess a longer investigative phase. Thus, as core philosophical constructs the inquisitorial system is described as being orientated toward a determination of the truth through its longer investigative phase. In contrast to this, the adversarial system is conceptualized as being more orientated toward the issue of proof as determined by the evidence the opposing parties can present in support of their arguments.

The adversarial system can be seen as orientated toward the competing roles of the opposing parties (prosecution and defense), whereas the inquisitorial system is operated by the State. In the pre-trial phase of the inquisitorial system, the aim of the investigation centers on the crime and not any particular suspect. Notably, the judge (or *magistrat* who represents the interests of the public rather than that of the prosecution or the defense) in the inquisitorial system holds a central role during the investigation in overseeing and pursuing the truth through the gathering of evidence that may incriminate or exculpate any suspect. In this context, it can be seen that the identification of an accused party to the crime is a by-product of this search for the truth.

Perhaps one of the best ways of illustrating and thereby understanding some of the differences between the two systems is in observing the differing functions analogous characters seem to hold between the two criminal justice systems. In both systems, the function of investigation, prosecution, and trial exist. For example, the public prosecutor or *magistrat* in the inquisitorial system belongs to the same judicial corps as the trial judge (*juge d'instruction*). This contrasts sharply with the adversarial system where the judge is a member of a totally distinct and elite body of legal officers who are superior to defense and prosecution counsel who are members of the same legal fraternity. However, as alluded to before, possibly the most distinct characteristic of the inquisitorial system is that the investigation of matters (i.e., crimes) are supervised by the prosecution or the *juge d'instruction*. This is quite different to what occurs in the adversarial system where the investigation of crimes are exclusively handled by police investigators, and the prosecutors of the state do not retain any supervisory role over the investigation conducted by the police. In this context, the *juge d'instruction* who may also supervise the conduct of investigations does not have any real equivalent in the adversarial system.

Another distinguishing characteristic of the inquisitorial system is its focus on the documentation and thus composition of evidence in the written form. One manifestation of this focus is to document (i.e., record) all official activities that must be noted in a *dossier* and thus preserved for potential review at some later date. A further nuance is that evidence in the form of witness testimony is also documented and is often acceptable in such a written form. Thus, in many instances, witnesses are not required to provide live verbal testimony and thus be potentially cross-examined by opposing counsel as is a common feature of the adversarial system. All components of evidence that are collected during the investigative phase are compiled into a *dossier* which becomes the centerpiece of the trial and thus acts as the key reference point from which the judge then questions the accused.

Finally, it should be clarified that the French inquisitorial system, akin to most criminal justice systems has undergone some degree of legal reform over the decades and in this context adopts some aspects that are analogous to the adversarial system. For example, although procedures are characterized as reliant on written as opposed to verbal testimony, some trials are now indeed conducted in public venues where evidence is debated (or *contradictoire*). To foster transparency in procedures, the accused defense counsel is entitled to view the case *dossier* before, and be present during, the judicial questioning of their client. Finally, as a mechanism conceptually analogous to a separation of powers, the functions of the investigation (the *juge d'instruction*) and the prosecution (the *procureur*) have also been separated.

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Chapter 15

The Image of Profiling
Media Treatment and General Impressions
James S. Herndon

Summary

Criminal profiling, or simply profiling, is considered in terms of the manner in which it has been presented in the various public media outlets. Comments are offered about the messages being conveyed to the consumer of media material. The conclusion posited is that the perception one would derive of the nature and value of profiling seems to be dependent on the source of their impressions.

INTRODUCTION

Criminal profiling probably would not be receiving the attention it is today by the scientific community were it not for the attention it has been given by the media, in its various forms (movies, TV, novels, press, etc.). Public impressions are greatly influenced by the media, not always in positive ways. The hype and spin associated with criminal profiling is such that an informal survey of college students (criminal justice and psychology majors, in particular) would reveal a large percent stating that they intend to become profilers. The reality of profiling has been lost in the continual sensationalization of the practice by those who like to titillate others. This chapter will consider the various ways that profiling has been presented by the media. What is not covered are the scholarly journal articles and textbooks published in scientific venues.

Profiling in Movies

People love going to the movies. Films heavy in crime and violence top the list of moneymakers. The saying is, crime sells. Since the early 1990s, there has been a steady stream of movies featuring criminal profiling in one form or another. Some contend that it all started with the movie *The Silence of the Lambs (1)*. Few crime enthusiasts and/or those individuals wishing to pursue careers in the profiling of crimes have not seen the film at least once. The image of a young FBI agent-in-training collaborating with an incarcerated psychopathic psychiatrist to develop a profile of an at-large serial killer excites the imagination, while stretching the believability of the practice. Critics would argue that the film distorts the way the FBI conducts its business. Nevertheless, Clarice Starling has become a role model for many young women who see themselves someday as profilers.

When interest in profiling was awakened by *The Silence of the Lambs*, it was not long before the public realized that there was a prequel to the movie that was released 4 years earlier: *Manhunter (2)*. The taste for Hannibal Lecter (no pun intended) sent moviegoers to video rental stores searching for the earlier film that portrayed the brilliant, though bizarre, psychiatrist who taunted and toyed with Clarice. The audience was hooked. And, Hollywood noticed.

Keeping the fascination at a fever pitch, the sequel *(3)* to *The Silence of the Lambs* was released in 2001: *Hannibal*. In this film, the adventures of Dr. Lecter are further explored as a new Clarice hunts him down before he escapes into oblivion. Linking profiling with the likes of Lecter certainly suggests that the practice requires mental prowess. The hunger for Lecter resulted in a remake of *Manhunter* in 2003, this time called *Red Dragon* because it was billed as being more faithful to the book on which the screenplay was based (*2*,*4*). These four films, then, probably did more than anything to bring the practice of criminal profiling to the attention of the world (at least that portion of the world that goes to the movie theater or rents videos).

Several other films were released that fed the moviegoers' fascination with profiling. In 2000, *The Bone Collector* hit the theaters, with fictional detective Lincoln Rhyme (Denzel Washington) struggling from a paralyzed condition to identify a deranged cab driver who was killing passengers, all the while being targeted by the killer himself *(5)*. Drama and excitement notwithstanding, the power of profiling could not be missed by the audience. Then, in 2001, Johnny Depp portrayed an investigator on the trail of "Jack the Ripper" in *From Hell (6)*. In this case, however, the protagonist's flaws were chemical addictions rather than physical paralysis. A year later, Clint Eastwood played a retired FBI profiler in *Blood Work (7)*. The familiar theme

was evident: profiler with medical and/or emotional problems plays cat and mouse game with serial killer who enjoys toying with mind hunters.

Adding still to the fascination, but with seemingly less acceptance by the viewing audience, was the most recent film highlighting profiling and profilers: *Mindhunters* presented a group of FBI profilers-in-training secluded on an island for the purpose of a simulation exercise; all the while they were being systematically killed by another profiler who was targeting them *(8)*. The task: profile the profiler or be killed. Judging from its brief run in US theaters and its quick release in DVD format, the film did not appear to capture the enthusiasm of profiler aficionados.

In addition to the foregoing, there are other films worth mentioning that added to the image (correct or otherwise) of criminal profiling. The year 1998 saw the release of *Copycat*, starring Sigourney Weaver as a criminal psychologist who becomes the target of a serial killer's protégé. She must team up with a detective (Holly Hunter) to profile the predator *(9)*.

No discussion of movie portrayal of profiling would be complete without mentioning the films that featured Morgan Freeman as Dr. Alex Cross. In *Kiss the Girls*, Dr. Cross was on the trail of bicoastal serial killers as his niece had fallen victim to the east coast predator *(10)*. And, in *Along Came a Spider*, the victim is a senator's daughter *(11)*. This time, Dr. Cross comes out of retirement to help solve the kidnapping case and unwittingly falls into the trap of aiding the kidnapper document the "crime of the century."

HBO released *Citizen X* in 2000, a film about Russia's most prolific serial killer, Andrei Chikatilo, who was eventually charged with 52 homicides *(12)*. *Citizen X* spotlighted Max Von Sydow as psychiatrist Dr. Aleksandr Bukhanovsky, who wrote a psychological portrait of the killer that was essential to his confession.

The actors Ashley Judd, Samuel L. Jackson, and Andy Garcia starred in the 2003 movie *Twisted (13)*. The plot involves a serial killer who targets men who once were involved with police inspector Jessica Sheppard (Judd), making her the prime suspect. The challenge: figure out whodunit by using good detective work and profiling.

Angelina Jolie starred in the 2004 movie *Taking Lives*, in which Jolie plays FBI profiler Illeana Scott *(14)*. She is assigned a case involving a killer who for 20 years has been assuming the identities of his victims. Her task is to find him by figuring out "what makes him tick." This phrase seems to be popular among profiling fans.

Lastly, Ben Kingsley starred in the 2004 film *Suspect Zero*, a movie about an FBI-trained profiler who had the ability to telepathically get into the minds of killers. Trouble is, other profilers suspect that Kingsley (Benjamin O'Ryan in the film) may have become a serial killer dubbed suspect zero *(15)*.

These movies are, no doubt, not all the films that have featured profiling in one form or another. However, they do represent the most popular and/or well-known silver screen presentations on the subject matter. Taken together, the discussed movies paint a picture of criminal profiling as a practiced art that pits the mind of the detective/investigator/psychologist against the mind of the serial predator. One might get the impression that profiling attracts troubled people (if not troubled to begin with, they soon become so) who investigate the worst of humanity. The expression "it takes one to know one" may be apropoś.

PROFILING IN NOVELS

Several of the movies previously discussed were originally novels. Still, there are other novels that feature profiling that have not yet made it to the movies. First, those that have inspired screenplays.

Thomas Harris published *The Silence of the Lambs* in 1988 *(16)*. Although the movie by the same name captured the essence of the book, there were differences in the plot details. Other Thomas Harris novels spawned movies: *Red Dragon*, published in 1981, introduced the world to Dr. Hannibal Lecter and Special Agent Will Graham *(17)*. Together, they profiled the killer known as the Tooth Fairy. This novel formed the basis for two movies: *Manhunter* (1986) and *Red Dragon* (2003). Harris' third book, *Hannibal*, published in 1999, was the basis for the movie by the same title, released in 2001 *(18)*. In general, Thomas Harris has been responsible for the great interest in profiling generated by his novels. Though fictional, these works were partly based on research conducted on site at the FBI Academy and interviews with several profilers.

The books of James Patterson inspired two movies. Patterson published *Kiss the Girls* in 1995 *(19)*, and the movie by the same name was released 2 years later. He previously wrote *Along Came a Spider* in 1993 *(20)*; the movie came out in 2001. Profiling was central to the story in these two novels. Moreover, the character of Dr. Alex Cross seems to embody the skills of a seasoned detective and the insight of a forensic psychologist.

Jeffery Deaver published *The Bone Collector* in 1997 *(21)*, and the movie by that name was released in 2000. Michael Connelly published *Blood Work* in 1998 *(22)*, and its movie namesake was released in 2002. Based on the success of these novels and the skill of these writers, more novels-turned-movies about profiling can be expected.

Now, for novels not yet in movie form. Michael Connelly has published two follow-on novels featuring retired FBI Agent/profiler Terry McCaleb that would provide grist for movie scripts: *A Darkness More Than Night (23)* and

The Narrows (24). An earlier book by Connelly (1996), *The Poet*, introduced the FBI Behavioral Science Unit (BSU) and called on profilers to help solve the serial killing of homicide detectives *(25)*.

Indeed, retired FBI agent John Douglas has written two novels about profiling (as well as numerous non-fictional works). Released in 1999 and co-authored by Mark Olshaker, *Broken Wings* is a novel about a forced-out-of-the-Bureau agent and profiler who is called on to solve the murder of the FBI Director *(26)*. Together with other "broken wings," fictional agent Jake Donovan takes on a case of major proportions, demonstrating his superior skills. A sequel authored solely by Douglas, *Man Down (27)*, finds Donovan and his broken wings team investigating the death of a government scientist in North Carolina. The cost of profiling to the profiler becomes evidently clear, as Donovan's life takes many turns for the worse. The theme that profiling has a cost to the profiler emerges in novels.

C.J. Koehler wrote *Profile*, which was published in 1994 *(28)*. This is the story of psychiatrist Dr. Lisa Robbins, who is being stalked by her own patient—a man who may be responsible for a rash of murders. But, the plot deepens as other suspects emerge and professional ethics prohibit disclosing patient information. Psychiatrist and detective collaborate to profile the killer.

A complex historical novel by Caleb Carr (1994), *The Alienist*, features Dr. Laszlo Kreizler, eminent physician and alienist (psychiatrist), who is called on to assist in solving serial child murders in 1896 New York City *(29)*. More recently, Kay Hooper published *Hunting Fear* in 2004 *(30)*. The plot to this novel not only calls on FBI profilers to solve a serial murder but also enlists the talents of psychics. While entertaining, mixing profiling and psychic skills is a line crossed by one particular TV show in the 1990s. However, the credibility of the former is not enhanced by the lack of credibility of the latter.

There are, doubtless, many more novels that allude to profiling or make it a major focus to the plot development. One cannot be aware of all novels in print that bear on the subject. However, one can conclude that most novels will tend to depart somewhat from reality, if not in specifics, then in generalities. Profiling sells books because readers are fascinated by the concept of getting inside a criminal's mind.

PROFILING IN NON-FICTIONAL/BIOGRAPHICAL BOOKS

Novels are not the only books that have capitalized on the strong public interest in profiling. Perhaps as pervasive as movies and novels, but aimed at a different audience, are non-fictional/autobiographical books on the subject.

Indeed, there appears to be no shortage of such books. A list of many such books is presented in Table 1. Arguably, the most prolific of biographical writers on profiling is retired FBI Supervisory Special Agent John Douglas. Together with co-author Mark Olshaker, he has published five works that chronicle his life and experiences as a profiler in the FBI BSU over a 25-year period.*

The first by Douglas and Olshaker *(32)* was entitled *Mindhunter* and provides an account of how Douglas became a profiler and the claimed successes he has achieved, despite personal difficulties. Douglas and Olshaker's second book entitled *Journey Into Darkness* was published in 1997 and continues the odyssey of Douglas's personal accounts in profiling, but more pointedly focuses on the "minds and motives of the most terrifying serial killers" *(33)*. The third book produced by Douglas and Olshaker entitled *Obsession (34)* focuses on not only murderers but also rapists, stalkers, and their victims. The evident popularity of Douglas and Olshaker's first three books can be gauged by their additional release in audio formats.

The fourth book by Douglas and Olshaker *(35)* entitled *The Anatomy of Motive* has the authors attempting to explain the motives behind serial crimes and thus concurrently explore the common building blocks contributing to the violent antisocial personality. The fifth contribution by Douglas and Olshaker entitled *The Cases That Haunt Us (36)* presents an examination of seven notorious unsolved and/or controversial murder cases such as Jack the Ripper (the Whitechapel Murders), the Zodiac killer, and the murder of JonBenet Ramsey. Finally, John Douglas has recently collaborated with Stephen Singular in 2003 to publish *Anyone You Want Me to Be (37)*, which explores the realm of computer crime, such as cyber-stalking.

Other FBI BSU veterans have published their memoirs of profiling experiences. Robert Ressler, with Tom Schachtman, produced *Whoever Fights Monsters* in 1992 *(38)*, followed by *I Have Lived in the Monster* in 1997 *(39)*. Roy Hazelwood, with Stephen Michaud, published *The Evil That Men Do* in 1998 *(40)* followed by *Dark Dreams* in 2001 *(41)*. Russ Vorpagel, with Joseph Harrington, published *Profiles in Murder* in 1998 *(42)*, while Gregg O. McCrary, with Katherine Ramsland, published *The Unknown Darkness* in 2003 *(43)*. Don DeNevi and John H. Campbell wrote *Into the Minds of Madmen*, published in 2004, which provides a historical account of the FBI BSU activities in profiling *(44)*. These same two authors (this time as Campbell and

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* Lest one assume that Douglas and Olshaker were the first to present an account of the FBI BSU to the general public in book form, we need only point to Jeffers *(31)* book *Who Killed Precious?* As the subtitle indicates, Jeffers examines "how FBI special agents combine psychology and high technology to identify violent criminals" *(31)*.

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Table 1
General Summary of Non-Fiction Books
(Biography, etc.) Related to Profiling

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Year	Book title
1968	*Casebook of a Crime Psychiatrist*
1991	*Who Killed Precious?*
1992	*Whoever Fights Monsters*
1993	*The Killer Department*
1994	*Criminal Shadows*
1995	*Mindhunter*
1997	*The Jigsaw Man*
1997	*Journey Into Darkness*
1997	*I Have Lived in the Monster*
1997	*The Art of Profiling*
1998	*Obsession*
1998	*The Evil That Men Do*
1998	*Profiles in Murder*
1999	*The Anatomy of Motive*
2000	*Picking Up the Pieces*
2000	*The Cases That Haunt Us*
2000	*Catch Me a Killer*
2001	*The Real Cracker*
2001	*Dark Dreams*
2002	*Portrait of a Killer*
2002	*Dark Paths, Cold Trails*
2003	*Anyone You Want Me to Be*
2003	*The Unknown Darkness*
2003	*Mapping Murder*
2003	*Profile of a Criminal Mind*
2004	*Into the Minds of Madmen*
2004	*Profilers*
2004	*Criminal Minds*
2004	*My Life Among the Serial Killers*
2005	*Between Good and Evil*
2005	*Tracker*

DeNivi) subsequently produced *Profilers* in 2004, which presents a compilation of previously published journal articles predominantly from authors associated with the FBI BSU *(45)*. Roger Depue, with Susan Schindehette, published *Between Good and Evil* in 2005 *(46)*. Thus, from 1992 to 2005, there has been

a steady stream of non-fictional biographical accounts chronicling the careers of retired profilers. The interest created by fictional films and novels may have generated a wider readership than might otherwise have been expected.

However, these retired FBI profilers were not alone in their desire/need to tell their stories. In other parts of the world, a different breed of profiler was busy gaining experiences that would lead to published accounts of profiling. In Canada, the work of Inspector Ron McKay, Royal Canadian Mounted Police, was presented in *Dark Paths, Cold Trails* by Doug Clark *(47)*. In the United Kingdom, psychologist Paul Britton published *The Jigsaw Man* in 1997 *(48)* and *Picking Up the Pieces* in 2000 *(49)*. Britton's clinical approach to criminal profiling can be contrasted with the geographic approach favored by David Canter, who wrote *Criminal Shadows (50)* and *Mapping Murder (51)*. Whereas Britton dubs himself "Britain's foremost criminal psychologist," Canter refers to himself as "Britain's pioneering expert in psychological profiling." Even so, author Robin Cook in *The Real Cracker: Investigating the Criminal Mind (52)* presents the case for two other Englishmen to receive top billing as UK profilers. Cook tells the true life stories of Dr. Richard Badcock, a forensic psychiatrist, and Dr. Julian Boon, an academic psychologist. He maintains that it is their contributions to criminal profiling that inspired the fictional character "Dr. Eddy Fitzgerald" in the popular British TV series *Cracker*.

Recently, fiction writer Patricia Cornwell tried her hand at non-fiction when she wrote and published *Portrait of a Killer: Jack the Ripper Case Closed (53)*. Cornwell relies on her considerable forensic and technical skills to examine case materials to present evidence that the perpetrator was the famous artist Walter Sickert. Although professional profilers may not agree with her conclusion, her approach and thoroughness are noteworthy.

The experiences gained by investigators in Russia in the Chikatilo case presented in *Citizen X* by HBO are more fully explained in *The Killer Department* by Robert Cullen *(54)*. Further south, a continent away in Africa, Micki Pistorius, a psychologist with the South African Police Service, recounts what she terms "a profiler's true story" in *Catch Me a Killer (55)*.

Returning to America, Godwin and Rosen *(56)* have published *Tracker*. Maurice Godwin was a student of David Canter at the University of Liverpool and on his graduation has returned to the United States and has engaged in consultative profiling work for law enforcement agencies in North Carolina and other states. He is highly critical of the profiling methods advocated by the FBI and claims a far greater success rate using geographic profiling.

A review of non-fictional books on profiling would not be complete without mentioning *Casebook of a Crime Psychiatrist* written by James Brussel in 1968 *(57)*. His work and this book are often cited as the inspiration for the

beginnings of the profiling program at Quantico (FBI Academy) in the early 1970s. More recently, other psychiatrists claim special expertise getting inside the minds of the world's most notorious murderers. One example is Helen Morrison, who wrote *My Life Among the Serial Killers (58)* along with Harold Goldberg.

Dan Korem *(59)* has written a book about profiling that departs from the biographical/testimonial approach taken by many profilers. In *The Art of Profiling: Reading People Right the First Time*, Korem provides the reader a tool for assessing a person's profile, which he claims identifies how a person prefers to communicate, perform their job, and make decisions. In the foreword, written by James Reese (one of the original FBI BSU "mindhunters"), the Korem profiling system is lauded as a method that can be taught and passed on to others and thus, unlike profiling used by others, seems to be based on seasoned experience and gut instincts.

There are two other non-fictional books worthy of mention. Though not autobiographical and/or testimonial in nature, they both present a general view of profiling in terms understandable for the general reading audience. In 2003, Brian Innes published *Profile of a Criminal Mind (60)*. Using many photographs and colorful graphics, this book presents a layman's overview of profiling. Similarly, in 2004, David Owen published *Criminal Minds (61)*, which offers an equally colorful pictorial overview of profiling.

As with the discussion of movies and novels, this presentation of non-fictional and/or biographical books on the subject of criminal profiling is not necessarily exhaustive in its coverage. From the list in Table 1, it can be seen that there has been a steady release of books on the subject, and in some cases, several per year. This is suggestive of a hungry market for information about criminal profiling, and no doubt new books are currently in production slated to appear in the future.

PROFILING ON TV—FICTIONAL

Many fans of profiling have become so by watching television depictions. The late 1990s were perhaps the prime years for TV series about criminal profiling. Then, there was an apparent hiatus, during which the prime time profiling series were relegated to other non-sponsoring channels as re-runs as well as appearing in video (VHS/DVD) release.

Perhaps the best-known TV series on profiling (in North America) was *The Profiler*, which aired on NBC from 1996 to 1999 *(62)*. The show featured the actor Ally Walker playing the character of Dr. Samantha Walker, who was said to be an FBI forensic psychologist/profiler. The series mixed crime

drama with personal issues in the life of the profiler to create a weekly dose of thrills and excitement for the viewer. The biggest weakness from a scholarly perspective was the manner in which profiling skills were portrayed as somehow linked with psychic abilities. Rather than following some rational approach to profiling, Dr. Waters used her talents of seeing through the eyes of a perpetrator as to what occurred at a crime scene. Good theatrics, but unreal. *The Profiler* lasted four full seasons; however, when the final season saw a switch from "Dr. Waters" to a lawyer/profiler, the end was in sight.

Possibly unknown to most American TV viewers who were fans of the profiler genre was a series from England that aired on A&E from 1993 to 1995 *(63).*[†] *Cracker* starred Robbie Coltrane as "Dr. Eddie Fitzgerald," an alcoholic, chain-smoking, compulsive-gambling, womanizing, irascible, criminal psychologist who consulted with the Manchester police on difficult cases that might lend themselves to profiling. Though apparently good at cracking cases (hence, the name), "Dr. Fitzgerald" was clearly portrayed as a flawed and troubled individual. So, what was the message? Profilers are talented, but eccentric (or in need of treatment).

Because *Cracker* received critical acclaim (no doubt due in part to Coltrane's acting talents), an American version was filmed starring Robert Pastorelli as "Dr. Gerry 'Fitz' Fitzgerald," police psychologist in Los Angeles, CA *(64).* Aired in 1997, Season 1 consisted of 16 1-hour episodes. The American "Fitz" was portrayed with the same flaws as the British "Eddie." The program description states that "Fitz is a deeply troubled individual who can be insulting, nosy, a drunken excuse for a husband, a lousy father, and a gambling washout." However, his one redeeming quality—"an uncanny ability to see the evil in people, bring them to confess, and walk away unscathed." The series lasted one season. The series tried to replicate a British success at a time when the American audience interest may have been waning. In 2005, out on DVD for posterity, it is sad to note that the star, Robert Pastorelli, died last year due to an apparent drug overdose.

Fox TV produced a series called *Millennium* that aired from 1996 to 1999 *(65).* The plot premise was as follows: A former FBI profiler (Frank Black) moves his family from Washington, DC, to Seattle, WA, where he joins the Millennium Group, a mysterious organization of former law enforcement officers, committed to battling a crime wave that grows as the turn of the millennium approaches. The allusion to the real Academy Group[‡] does not go

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[†] As of this writing, a recently discovered series about a fictional psychologist/profiler, *Wire in the Blood*, is now entering its fourth season on BBC.

[‡] The "Academy Group" being a private forensic consultancy business.

unnoticed. *Millennium* is a dark series with an eerie quality reminiscent of *The X-Files* (same creator—Chris Carter). "Frank Black" is described as having "an uncanny and often unsettling ability to see into the twisted minds of serial killers." His so-called gift causes him much inner turmoil. Yet, he knows he can use his ability to help others, so he persists.

It appeared that the profiler TV shows had run their course when *The Profiler*, British *Cracker*, American *Cracker*, and *Millennium* all disappeared from the airwaves by 2000. Was this just the end of viewer interest or the end of producer interest or perhaps both? Whatever caused the discontinuance of these series seems to be a past concern as a new series *(66)* aired on CBS in the fall of 2005—*Criminal Minds*—starring Mandy Patinkin as "Jason Gideon." So far, only the first season's episodes have aired, and the essence of the show seems clear. FBI profiler "Gideon" and his team approach crimes in a manner that appears right out of the pages of a John Douglas book. However, there is a hint of Robert Ressler in "Gideon." Each episode has at least one quote from a philosopher or sage about the human tragedy, making one think about the abyss metaphor often cited when looking into the minds of evil men. Platitudes are plentiful (e.g., all arsonists have problems with authority) to a degree not found in real knowledge of human behavior. The uncertainties of human psychology come across as black and white. The series is billed as one that focuses on profilers who "get inside the minds" of serial criminals. Trailers for the show remind viewers that "to understand a criminal, you have to think like one."

It appears that all the major US networks have now produced a television series based around profilers with varying degrees of success. From British to American, psychic to dark, the series do not appear to last more than one to four seasons.

TV—DOCUMENTARY

The fleeting success of fictional TV series about criminal profiling could be indicative of an audience desiring more serious treatment of the subject. With that as a premise, several documentary programs have aired on TV and/or in classrooms across the country that, perhaps, do a better job of presenting an objective analysis of profiling.

Mind of a Serial Killer aired on NOVA in 1992. Narrated by Patrick Stewart, this program went behind the scenes of the FBI Investigative Support Unit "where psychological detectives race against time to penetrate the minds and emotions of the most elusive murderers" *(67)*. This documentary was produced by Mark Olshaker and featured some of the prominent personnel associated with the work of the FBI BSU (e.g., John Douglas and Robert

Ressler) and showcased such cases as the Atlanta child murderer Wayne Williams and Arthur J. Shawcross, among others. It does not seem surprising that favorable comments were offered about profiling.

American Justice on A&E produced a somewhat similar documentary called simply *Profilers (68)*. Featuring some of the same cases as the NOVA program, this documentary spotlighted FBI profiler John Douglas, lauding his skills and insight into the mind of a criminal. An updated version of this program appeared on DVD as part of a series entitled *Serial Killers: Profiling the Criminal Mind (69)*. The program was a positive and favorable presentation of FBI criminal profiling, with highlights on John Douglas and Roy Hazelwood.

Whereas NOVA and A&E had praise for the FBI profilers, Films for the Humanities & Sciences produced a documentary video titled *Inside the Mind of Criminal Profilers* in 2001 *(70)* that focused on a different collection of profilers: David Caldwell (South Carolina Law Enforcement Division), Gus Gary (ATF), Dayle Hinman (Florida Department of Law Enforcement), and Mike Prodan (Riverside County, CA). Cases included various types of murder (sexual, child, and prostitute) and serial arson. These profilers were interviewed and highlighted in terms of their manner of applying profiling techniques. The narrator cited the "amazing accuracy of these profiles" as being the key to solving crimes. Profiling was again shown in a very favorable light.

From praise and unquestioning acceptance of profiling and profilers, a shift occurred with the production of the next documentary by Films for the Humanities & Sciences. *To Catch a Killer: The Use and Abuse of Criminal Profiling (71)* takes a more critical look at profiling in practice. It begins with a consideration of the development and use of criminal profiling (featuring Robert Ressler, FBI and Kris Mohandie, LAPD), then discusses the use of profiling as applied to serial rape and murder cases in England. Profiling was utilized to link the crimes based on similarity of signature aspects of the so-called Railway Rapist. Although profiling "doesn't provide evidence," it was used to solve this crime. However, in another case, the use of profiling was considered misguided. In the Rachel Nickell murder case, psychologist Paul Britton constructed a "somewhat vague" profile. On the basis of this profile, a scheme emerged to lure suspect Colin Stagg into admitting guilt by arranging a liaison with an undercover female officer. Using profiling to entrap a suspect was deemed inappropriate by the British court, and psychologist Britton faced sanction. The suspect was released and the Rachel Nickell case remains unsolved. Critics state that "profiling should never hijack an investigation." It merely serves as an investigative aid.

Court TV, as part of The System series, released a documentary *(72)* titled *The New Profilers* in 2003 that focused on some different individuals, perhaps a

second generation of profilers. Featured individuals included Dr. Eric Hickey, a California academic who teaches criminal psychology and consults with police on cases and Kate Lines, a profiler with the Ontario Provincial Police and trained by the FBI. Also featured is Leslie D'Ambrosia, a profiler with the Florida Department of Law Enforcement and Brad Moore, a Canadian geographic profiler who interestingly claims to be one of four in the world qualified to do this. The uses of profiling included identifying murder suspects where crime scene staging was evident, threat assessment in a romantic stalking case, and offender identification based on geographic behavior patterns. Amazingly, there was even a segment featuring Robert Ressler demonstrating "reverse profiling." Profiling used to prove that a convicted man was innocent is certainly a new application of a technique intended to narrow the suspect pool. However, York County (SC) Sheriff Bruce Bryant disagreed with Ressler's application of profiling. The scientific validity of profiling was questioned.

Dayle Hinman received special recognition in a 2004 Court TV release of *Body of Evidence: From the Case Files of Dayle Hinman (73)*. Now retired from the Florida Department of Law Enforcement (FDLE), she recounts in this DVD series that aired on Court TV in the preceding years her cases and how she applied the techniques of profiling. It is not altogether clear in these cases where criminal investigation ends and criminal profiling begins.

MSNBC aired a documentary on profiling *(74)* on July 23, 2005 in its program *Dark Heart, Iron Hand* that featured John Yarbrough [a profiler with the Los Angeles (CA) Sheriff's Office], Kris Mohandie (former LAPD psychologist), Leslie D'Ambrosia (FDLE), and Helen Morrison (forensic psychiatrist). Though focused on serial killers and what may lead someone to become one, the interviewed experts offered opinions and viewpoints, including the mixed outcome of research to date on profiling effectiveness. One point of view expressed that "seldom does profiling catch a criminal," whereas an opposite opinion claimed that the "tool of profiling is very effective." Host John Seigenthaler summed it up by saying "profiling is merely one tool" in crime investigation.

Considering the eight documentaries that have been discussed, the image of profiling appears to be more of a skill/technique that has to be taught and practiced by dedicated individuals to be effective. Unlike the fictional TV series, documentaries do not push the psychic side of profiling, nor do they suggest that profilers are somehow flawed individuals obsessed with the dark side of human nature. A distinct shift in theory was noticed in the documentaries that contrasts with the original dictum of profiling. For years, it has been repeated as a truism among profilers that "behavior reflects personality." Whatever that really means from a scientific psychology perspective is arguable. Now,

however, new profilers are saying "personality directs behavior." One statement seems retrospective, the other prospective. It seems from these documentaries that profilers are looking both ways.

PROFILING IN MAGAZINES/PERIODICALS

The scope and magnitude of coverage of criminal profiling in popular magazines and periodicals is almost impossible to calculate. Hundreds (if not thousands) of articles have appeared in magazines of all kinds and in periodicals (e.g., newsletters) ever since the word "profiling" was first uttered in the early 1970s. An Internet search using Google yields 169,000 hits for the key words "criminal personality profiling." Add the word "articles" and the count goes to 9,950,000. Modify the search with the word "magazine" and the hits reduce to 2,690,000. Clearly, it is a daunting task to survey all that has been written about profiling. Rather than presume that capability, this section will consider what will be termed two "bookend" articles that have appeared in general readership publications.

The first bookend article that piqued interest in profiling appeared in *Psychology Today* magazine in the early 1980s and exposed the general public to the existence of the FBI profilers and their practices. Bruce Porter *(75)* wrote an intriguing article "Mind Hunters" that carried the subtitle "Tracking down serial killers with the FBI's psychological profiling team." If not the first, it certainly was one of the initial articles published outside of law enforcement or academic circles on the subject of profiling. This article discussed, through the use of case examples, "the latest weapon in the FBI arsenal: psycho-logical profiling." Cases cited included the Mad Bomber of New York City (George Metesky) and the Son of Sam killer (David Berkowitz) to name a few. Compared with criminal sleuths of the past, these FBI profilers were identified as the first generation: Richard Ault, Roger Depue, Robert Ressler, John Douglas, Roy Hazelwood, Jim Reese, Swanson Carter, Robert Schaefer, and Ken Lanning. Through pictures and text, this article introduced FBI profiling to the public and arguably inspired a new generation of profilers in the process.

Moving forward 21 years from this *Psychology Today* article (published in 2004) and the second notable 'bookend' article attempts to provide a succinct and contemporary summary of the state of profiling. Thus, in 2004, *Monitor on Psychology* published the article by Lea Winerman *(76)* entitled "Criminal profiling: the reality behind the myth" and examined the practice from the vantage point of nearly 30 years of trial and error. Citing the various major approaches that have now evolved (e.g., criminal investigative analysis, investigative psychology, crime action profiling), Winerman highlights that

practitioners do not always agree on methodology. Nevertheless, their common goal is to "help investigators examine evidence from crime scenes and victim and witness reports to develop offender descriptions" *(76)*. Imbedded within this article is a sidebar that discusses whether profiling really works. Mentioned therein is the work of Anthony Pinizzotto and Richard Kocsis, who have made noteworthy contributions to the understanding of profiling validity. Sharing the limits of profiling effectiveness is something that we do not find too often in other forms of media presentation, certainly not in movies, TV series, and novels.

PROFILING IN NEWSMAGAZINES

Like other magazines, newsmagazines have covered the topic of profiling in a scope that is hard to measure with certainty. There have been, however, a few noteworthy examples where profiling received extensive coverage in a newsmagazine (e.g., *Time*, *Newsweek*). The following examples should suffice.

In 1986, Michaud wrote an article *(77)* for the *New York Times Magazine* titled "The FBI's psyche squad." Similar to the article by Porter *(75)*, this essay was an overview of the FBI BSU and its profilers. The July 23, 1990 issue of *Newsweek* featured a cover story about "The mind of the rapist" that offered insight into the kinds and motivations of rapist *(78)*. Though no FBI profilers were specifically mentioned, the Groth typology often relied on by profilers was elaborated on. *Newsweek* concluded in this article that "no single profile fits all rapists."

The April 1, 1991 issue of *Newsweek* focused on the mainstreaming of violence. In the article titled "Violence in our culture," there is reference to Hannibal Lecter and *The Silence of the Lambs* that is used to develop an argument about the effects of violence in the media *(79)*. It should be remembered that it was the fictional Dr. Lecter who, arguably, stimulated much public fascination with serial killers and profilers. On the same day (April 1, 1991), *People* magazine featured an article called "Cops, killers & cannibals" that spotlighted the cast and crew of Jonathan Demme's movie and how they spent time at the FBI BSU in preparation for their roles *(80)*.

Newsweek, February 3, 1992, had a cover story about "The Secret Life of Jeffrey Dahmer." The article "Secrets of a Serial Killer" *(81)* stated that Jeffrey Dahmer is a "case study of a criminal soul in torment, languid one moment, frantic the next—always deadly." Eric Hickey was quoted regarding the typical profile of a serial killer. John Douglas points out that serial killers are obsessed with domination and control. Henry Lee Lucas, in an accompanying article about imprisoning notorious killers, prophetically says "prison isn't kind to killers of young people. Dahmer will be 'lucky' to stay alive."

"The Mind of the Unabomber" was the story on the cover of *Newsweek*, April 15, 1996. Two articles provided extensive analysis of Theodore Kaczynski and his crimes: "Probing the mind of a killer" *(82)* and "The end of the road" *(83)*. The first article examined Kaczynski's life with a view toward reconciling it with the FBI profile (that did not lead to his capture). The second article describes the capture of the Unabomber and how his brother was responsible for turning him in to authorities.

U.S. News & World Report had an article in its April 22, 1996 issue titled "How the FBI paints portraits of the nation's most wanted" *(84)*. It focused on the work of criminal profilers and how they profile criminals, citing the Unabomber case as a good example. [In a subsequent *U.S. News & World Report* issue (November 17, 1997), the same writer was critical of the FBI's approach to profiling the Unabomber *(85)*.] The April 22 article considered the research into criminal motives, methods, and thinking conducted by Ressler and Douglas that forms an important part of the profiling program. The article also discussed the relationship between the Investigative Support Unit and other FBI executives, and how profilers are viewed by some as little more than "crystal-ball gazers."

The year 2002 saw a flurry of news articles about the D.C. snipers. *Newsweek*, October 21, reported on the manhunt for the then-termed "Tarot Card Killer" and stated that "profilers believe that the sniper was carefully watching—and thoroughly enjoying—the round-the-clock press attention to his exploits" *(86)*. Likewise, *Time*, October 21, featured a geographic profiler (Kim Rossmo) in a story called "Inside the sniper manhunt" *(87)*. Rossmo's thesis that crimes are not random in a mathematical sense was put to the test. He was convinced that there was a geographic pattern to the crimes that would aid in catching the sniper. Lastly, *Newsweek*, November 4, presented a comprehensive summary of the crimes of 41-year-old John Allen (Williams) Muhammad and his protégé, 17-year-old John Lee Malvo. In "Descent into Evil," Thomas *(88)* presented a complete profile of the killers.

There have been other articles about highly visible crimes and criminals before and after those mentioned in this section, in *Newsweek*, *Time*, *U.S. News & World Report*, and others. Those selected for consideration have some direct relevance to criminal profiling and reflect the manner of coverage by news magazines.

PROFILING—ON BALANCE

Criminal profiling has been considered through its presentation in the media—movies, novels, non-fiction books, TV series and documentaries, etc. It was found that no fewer than 15 movies have focused on profiling or profilers

over the past 15 years. Similarly, 15 novels were identified that had profiling or profilers as an integral part of their plot development. Amazingly, 31 non-fiction books were identified on the subject, reflecting the extent of self-promotion among profilers. Five TV series were cited as examples of prime-time profiling, and eight documentary-type videos were examined. Two "bookend" articles were highlighted and 12 examples of newsmagazine coverage were presented.

Based on this array of material, what can be said about the image of criminal profiling? Clearly, it is a topic that draws considerable public media attention. In the fictional media (movies, TV series, and novels), profiling is dramatized, glamorized, and even distorted for the effect of entertainment value. Profilers are portrayed as flawed individuals, in some ways not unlike the criminals they seek to identify: obsessed, driven, and troubled. In the non-fictional/biographical books, profiling is touted as truly remarkable in its effectiveness; profilers sell themselves and their claimed skills. And, in documentaries, general readership articles, and newsmagazines, there is more likely to be found a balanced presentation of profiling and profilers—the good and the bad. The impression one gets (or has) of profiling might be a function of the source of the knowledge about the art/technique as it is presented. As with any new tool or technique, those with a vested interest will point out the plusses, whereas those with competing interests will point out the flaws and limitations. A reasonable evaluation might lie somewhere in between these two positions.

The intent of this chapter has been to review and consider the various forms of media presentations of criminal profiling. It is often said that perception is reality. How does the general public perceive criminal profiling? If one believes the movies, novels, and TV shows on the subject, then the perception of profiling cannot square with the reality shared by some profilers. If one believes the self-promoting books, then profiling is nothing short of incredible.

We cannot take the media treatment of profiling too lightly. The public does realize that movies and novels are fictional portrayals and that there is a certain amount of flair and excitement added to the truth. Nevertheless, young minds are impressionable and the image of profiling in the media can influence expectations of actual real-world applications. Even seasoned investigators newly introduced to criminal profiling may have the wrong impression *(89)*, thanks to fiction, and overcoming such erroneous beliefs may make training in the correct techniques of profiling that much more difficult. Kocsis et al. *(89–93)* highlights concerns that "media portrayals of profiling that serve to promulgate a favorable reputation of the technique *(89)*" may be misleading and not reflective of the state of the art, especially when scientific validity

data are considered *(91,92)*. The disparity between media portrayal of criminal profiling and reality needs to be pointed out so that those in law enforcement can make informed judgments about the effectiveness of the technique, and separate claims of promoters from scientific evidence.

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PART IV

CRITIQUES AND CONCEPTUAL DIMENSIONS TO CRIMINAL PROFILING

Chapter 16

Contemporary Problems in Criminal Profiling*

Richard N. Kocsis and George B. Palermo

Summary

Despite the apparent popularity of criminal profiling among the law enforcement community, scrutiny of its merits does not appear to have occurred to any substantial extent. This chapter identifies and assesses 10 significant problems surrounding the theoretical literature and the professional practice of criminal profiling. It highlights many shortcomings in both the research and the practice of profiling and serves to demonstrate that a disparity exists between the perceptions and the realities of what criminal profiling can reliably achieve. Suggestions for how the research and practice of profiling may be advanced are discussed.

INTRODUCTION

There are few investigative techniques that can rival the notoriety of and public interest in criminal profiling. The concept of the enigmatic profiler who possesses a genius-like insight into the mind and actions of a serial killer has become a common and well-recognized hallmark of contemporary media and crime fiction *(1–3)*. The degree of parity that exists, however, between the reputation generated by such depictions and the realities of profiling in aiding

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police investigations is an issue that seldom attracts equivalent critical scrutiny. Given the numerous true-crime biographies on the topic *(4–12)*, one can be forgiven for thinking that profilers have done little to counter the often fanciful image of their activities. Indeed, it is arguable that the practice and development of profiling has benefited greatly from such romanticized portrayals *(13)*.

The purpose of this chapter is to offer some critical assessments of the profiling technique, its practice, and the developed research underpinning its use. It should be noted, however, that the issues raised herein are not presented in any order reflective of their priority.

WHAT IS PROFILING?

Profiling is a process of observation and reflection during which an attempt is made to reassemble the collected pieces of a criminal puzzle as the investigating profiler tries to answer the basic questions: Why, where, when, how, and who? It may be well served by typologies of past crimes that are useful in the investigation of present crimes. Specifically, it is a technique aimed at identifying and interpreting crime behavior or actions for the purpose of predicting the personality of the offender, his/her *modus operandi*, and, possibly, the motivation for the crime. These factors are derived from an attentive examination of the crime scene, which often yields information valuable to the criminal investigator. The purpose of profiling, however, is not only that of a possible identification of important offender characteristics but also to prevent the repetition of a crime. The practice of criminal profiling thus far has been relegated to major felonies, such as murder, rape, and arson, especially those that are serial in type.

DOES PROFILING WORK?

In view of the renown of criminal profiling, it seems somewhat trite to question the efficacy of the technique given its status alongside other well-established forensic investigative adjuncts *(14–17)*. Surprisingly though, the empirical evidence to support profiling, unlike other forensic techniques, is remarkably scarce *(18,19)*. In the attempt to answer the basic investigative questions mentioned above, various approaches to profiling have been used, including criminal investigative analysis (CIA), investigative psychology (IP), and crime action profiling (CAP). These methods, however, although contributing to reducing the number of suspects in a crime, often fall short of being successful in definitive offender identification. This may be due to a lack of sufficient data for interpretation or to the inadequate interpretive capacity

of the profiler, but perhaps more so to the uniqueness of each offender and situational variables of his *modus operandi*.

In assessing the efficacy of profiling, it is important that two distinct but integral concepts be considered. First, the "validity" of a profile is related to its accuracy in correctly predicting the characteristics of an unknown offender. Second, efficacy is also related to the utility of the information yielded by a profile. Assuming that the profile is reasonably accurate, one must consider whether this information actually assists investigators in practical terms.

Validity

Possibly the earliest documented evidence to support profiling emerges from an internal report produced by the Federal Bureau of Investigation (FBI) *(20)*. This report, as an internal document, has not been made available for public scrutiny to date. Even so, this report appears to be the source of a claim that profiles, as composed by the FBI Behavioral Science Unit, possess an approximately 80% degree of accuracy. This appears to have been first promulgated in the public domain by Pinizzotto *(21)*. However, to date it has not been independently verified as is dictated by the scientific method, and until that is done it remains a tantalizing assertion *(22)*.

Putting aside such unilateral claims, the largest publicly available source of information attesting to the accuracy of profiles appears to be in the nature of anecdotal accounts *(23)*. Although anecdotal accounts may be useful in illustrating a particular issue, such information cannot be confidently relied on to confirm the validity of the technique *(24,25)*. To complicate matters further, a large proportion of these accounts originate in true-crime biographies often co-authored by profilers themselves *(7,10)*, which in turn raises issues surrounding the objectivity of the testimonials. Social scientists have often observed that the human psyche typically focuses on success rather than failure *(26)*, so the scope of such chronicles in providing an objective representation must be also considered. Indeed, an illustration of this point can be gleaned from any number of biographies that report cases where the input of profiles was considered valuable in assisting investigations. High-profile cases, however, where profiles were not viewed as having assisted, or were perceived as being detrimental to the course of an investigation *(27–30)*, seldom receive equal coverage.

Empirical studies that directly test the abilities of profilers and that are open to public scrutiny are remarkably scarce *(31)*. Possibly the first was undertaken by Pinizzotto and Finkel *(32)*, who compared small groups (four to six participants) of trained profilers with non-profilers such as detectives and university students on various profiling experiments using a closed murder and rape case. Perhaps the most pertinent of these experiments required participants

to construct a profile of the offender through responses on a multiple-choice questionnaire. This procedure is important as it provides a quantifiable means by which profile predictions can be objectively scored for their accuracy. The results of this experiment were not, however, entirely supportive, with the sampled profilers demonstrating a superior degree of accuracy in predicting the characteristics of the rapist, but not the murderer. Indeed, in contrast to popular culture depictions, the sampled profilers achieved the lowest descriptive score in profiling the characteristics of the murderer.

Following the general design of Pinizzotto and Finkel's *(32)* research with respect to the use of an objectively quantifiable questionnaire to measure the accuracy of a profile, Kocsis *(33)* published the results of a series of studies *(34–37)* that involved testing participants' abilities to profile the probable offender in a murder and arson case. The results of this research yielded some tentative support for the abilities of the sampled profilers in that they surpassed all other groups in their abilities to accurately predict the characteristics of the unknown offender(s). Although these findings are encouraging, two notable limitations emerge. First, the sample pool of profilers for this research (i.e., 11 profilers) was modest. Consequently, further replication with larger samples is required. Second, a high degree of statistical variance was found among the profilers, indicating that their capabilities were not uniform. This finding suggests that simply because an individual operates with the title of "profiler" does not necessarily imply that the individual will possess a superior capacity to predict the characteristics of an unknown offender.

Numerous critiques have been made against the present-day psycho-investigative techniques used in criminal profiling. They have focused on the blurred borderlines between instinct/intuition and the scientific procedures adopted by the profiler, which may influence the entire scientific validity of the process (lack of systematic work; lack of real empirical research; simply reassessment of old theories or criticism of the same). Furthermore, the presence of cultural baggage passed from one profiler to another with little or minimal exposure to actual crime scenes, the stress on psychodynamics, and the poor application of in-depth psychology to the crime scene evidence offer little information about those socio-cultural characteristics, lifestyles, and patterns of criminal behavior of an offender that are basic to a thorough investigation.

Utility

The material in support of the utility of profiling unfortunately appears to be little better than the material in support of its validity. It should be recognized, however, that the concept of utility is, in all probability, more

difficult to quantify, as the usefulness of a profile to an investigation may not manifest itself in a directly tangible manner. Once again, the largest source of material in support of the utility of profiles is in the form of anecdotal accounts. For essentially the same reasons previously articulated in the context of validity, too much reliance cannot be placed on such material.

What presents as an interesting source of material for the utility of profiles, however, are various consumer satisfaction surveys administered to police personnel who have used a profile in the course of an investigation *(21,38,39)*. Clearly, these surveys are not representative of the contribution of a profile but, rather, seek to survey the perceived value of a profile to the personnel who have used one. One common theme seems to emerge from these surveys in that while police personnel genuinely seem to favor and derive some sense of satisfaction from the use of profiles in investigations, when the specific issue of how a profile was of assistance is raised, the responses seem less conclusive. One example of this trend comes from Pinizzotto *(21)*, who found that while 77% of the surveyed police regarded a profile as useful in focusing their investigation in some context, only 17% considered that the profile actually assisted in the identification of the offender. This pattern is not entirely surprising, given that some debate exists as to whether profiles have ever truly assisted investigators in actually apprehending an offender.

Although there are many anecdotal examples where, in retrospect, the characteristics described in a profile are found to resemble those of the appre-hended offender *(40)*, there is little evidence to indicate how this information directly assisted the investigation. Indeed, many profilers admit that, to the best of their knowledge, a profile has yet to actually solve a single case or pinpoint the individual concerned *(9,10)*.

One final issue related to evaluating the utility of profiles involves the breadth of their application. Profiling is generally touted as being useful for the investigation of crimes of an aberrant predatory nature where no identi-fiable suspect(s) seem apparent *(41–43)*, the archetypal circumstance being in the investigation of a serial killer. However, even within this context, there are circumstances where the use of a profile is limited or simply irrelevant, for example, where an offender hoards the corpses of his victims, providing little or no evidence of the murders until the discovery of the bodies and the apprehension of the perpetrator, as in the case of the American serial killer Jeffrey Dahmer *(44)*.

It needs to be questioned, then, whether the amount of resources invested in the development of specialist profiler training programs/units and research is justified, given the low volume of crimes where profiling may prove to be applicable *(45,46)*.

DISCUSSION

Although some tentative findings have emerged to suggest some limited support for profiling, considerably more work is required to replicate and thus test and bolster the robustness of such findings. In this respect, perhaps the most reliable conclusion that can be drawn concerning the accuracy of profiles is that a significant disparity exists between the reputation of profiling in terms of its accuracy and the reliable evidence that exists to substantiate that reputation. With respect to the utility of profiles, what seems apparent is that, among the law enforcement community at least, there is a general belief that profiles can contribute to an investigation. Quantifying the basis of this contribution however is problematic. Importantly, too, it is crucial to appreciate that satisfaction with a technique must not be confused with equating to proof of its utility or accuracy *(47–49)*. Given the paucity of evidence to support either the validity or utility of profiles, there is still ample reason to question whether profiling really works.

Brilliant Insights, Common Sense, or Just Cold-Reading?

In considering the utility of profiles, one needs to consider the insight they actually provide. One of the oldest criticisms of profiles is that the information they contain is no better than what can be derived through common knowledge or what the local bartender might guess *(50)*. An illustration of this point comes from the study by Snook et al. *(51)*, which examined the abilities of students to predict the location of an offender's residence in comparison with the predictions made by a geographic profiling computer program *(52–54)*. Despite the sophistication of the computerized system, the areas predicted by the program differed little from the predictions of the students following some rudimentary instruction on crime offense patterns.

Another aspect concerning the insight of profiles relates to the parallels between the content and nature of profiles, and the predictions that can be made by, for example, psychics. The area of parapsychology has for some time studied individuals who have attempted to feign extra sensory perception by engaging in a technique that is commonly referred to as "cold-reading" *(55)*. By providing semi-ambiguous statements that relate to items of information that possess a statistically high level of frequency, an individual can make statements that appear remarkably insightful *(56)*. It remains to be seen, therefore, to what extent the information typically contained in profiles represents true insight regarding the probable offender's characteristics, or some manifestation, conscious or otherwise, of the cold-reading technique.

Mountains of Conclusions From Molehills of Research

One problem that appears to haunt the practice of profiling is a proclivity by some of its practitioners to over-generalize the application of existing research. This problem typically manifests itself in over-generalizations concerning the type of crime profiled, or the applicability of demographic variables to foreign populations. A case that illustrates over-generalization relating to crime modality involves the 2002 "Beltway serial sniper" shootings that occurred in the eastern United States. Many profiles were generated following this series of random shootings *(57)*. When the individuals accused of these crimes were later apprehended, little congruence emerged between the profiles and the accused persons *(58,59)*. Incidents where profiles have been found to bear little similarity to the identified perpetrator(s) are not unique *(30,60)*; however, the issue of significance here is the suitability of a profile for this type of crime given that research undertaken in the area of profiling has predominantly focused on crimes of interpersonal violence such as sexual murder or serial rape *(61–65)*. Indeed, the authors are unaware of any scientifically vetted, published research on the profiling of snipers. Consequently, it appears that profiles in this case were most likely based on suppositions derived from research developed in respect of different types of crime.

An example of over-generalization for foreign demographics can be seen in the 1989 case in Sydney, Australia, of the "Granny killer." Confronted by a series of violent murders, Australian police consulted a foreign law enforcement agency renowned for its work in the area of profiling. The key features of the supplied profile characterized the offender as a young male possibly of African descent. When apprehended, the offender was found to be an elderly man of Anglo-Saxon heritage *(66)*. The incongruity between the profile and the offender is not the pertinent issue but rather the imprudence of the profilers to consider the differing demographics between their country and that of Australia, especially given that the Australian population contains less than 1% of people who can be classified as being of African descent. Although the consulted profilers were undoubtedly familiar with the relevant crime statistics for their country, which included a sizeable population of individuals of African descent, the use of these demographics in the Australian context made it highly unlikely that the predictions of the probable offender would be valid.

Research With Limited Application

Another development in the field of profiling has been the proliferation of research of limited practical application. In this respect, it would appear that the problems that brought about the development of profiling have been overlooked.

That is, profiling evolved to aid in the investigation of aberrant crimes that were difficult to solve through conventional police methods *(15,16,67,68)*. Consequently, the development of profiling theories and techniques for circumstances where the offender is readily apparent, or likely to be identified through conventional police methods, seems something of a redundant exercise. The study by Salfati *(69)*, for example, presents an analysis of crime scene behaviors matched with offender characteristics in domestic homicides. Although this research certainly contributes to the scholarly literature on the topic of homicide, its value in terms of profiling can be questioned given that domestic homicides seldom require profiling as the perpetrator (i.e., the spouse/partner) in most instances is readily apparent *(70,71)*.

Allied to this problem of research with limited application is the circumstance of research that assumes a level of understanding from the reader when reporting its findings, thereby reducing its potential utility. For example, the study by Canter and Heritage *(72)* presents a model for how rape behavior patterns may be interpreted for the purpose of profiling but fails to articulate how any offender characteristic can be associated with these patterns for the purpose of actually composing a profile. As a consequence, although the study serves to demonstrate the work undertaken by its authors and their capacity to profile such crimes, it limits others from independently and practically applying the findings of this study.

How Reliable is the Data?

The fundamental premise of profiling is that through the study of past crimes, predictions can be made concerning similar offenses in the future. Profiling in effect is a form of retro-classification whereby typologies are developed from past crimes to provide some understanding of present crimes *(73)*. In order for this paradigm to be valid, it is paramount that the information (i.e., past crimes) from which these typologies are developed is reliable. Herein lies a problem, as the literature in the field of criminology is replete with discussion concerning the unreliability of information surrounding both the reporting and the recording of crime *(74–76)*. There are numerous manifestations of this problem, but two distinct aspects seem particularly pertinent to profiling. First, there are limitations concerning sample representation. Second, there are problems relating to the accuracy of the data itself.

The problem concerning sample representation is illustrated by one of the most renowned pieces of research in the field of profiling, the organized/disorganized behavior dichotomy as proposed by Ressler et al. *(77)*. Data for this study were obtained by researchers interviewing a very small number of incarcerated sexual murderers and reviewing their archival records.

Whether the organized/disorganized dichotomy represents a behavioral typology genuinely representative of sexual murderers in general or merely a typology of sexual murderers who were incarcerated and willing to participate in an interview program is open to debate. This issue appears even more pronounced when one considers examples of infamous sexual murderers who would have been suitable for such research but in all likelihood would have declined to cooperate *(78)*.[†]

The second major problem surrounding the type of data used in profiling research is the reliability of the information contained in the various archival records often used as source material. A sizeable amount of literature exists in the fields of psychology and criminology that considers the unreliability of information sourced in the recollection of facts from eyewitness testimony *(80)* and the methods for formally reporting and recording offenses in police catalogues and statistics *(76)*. It must therefore be queried how valid profiling is likely to be, given the limitations of the available data sources on which some research is based and principles espoused.

Uniform Definitions: An Absence of Parity

Part of the motivation for developing the *Diagnostic and Statistical Manual for Mental Disorders (81)* and the *ICD-10 (82)* was to provide uniformity in the terminology and classification of mental disease. The general acceptance of these lexicons over the decades has rendered the problems of miscommunication among the psychiatric/psychological communities almost obsolete *(83)*. Profiling does not, however, enjoy the benefits of a *DSM* or *ICD*.[‡] Instead, substantial disparity exists with regard to the use of language that in turn arguably stifles the progression of profiling as a discipline.[¶]

Possibly the most obvious example of this lack of uniformity is in the nomenclature adopted to describe profiling itself. "Offender profiling," "criminal profiling," "criminal psychological profiling," "sociopsychological criminal profiling," "criminal personality profiling," CIA, and IP are all terms variously used to describe the practice of profiling. However, the source of this problem is deeper than semantic differences in terminology, as such disparities are often reflected in differing methodological procedures and the end

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[†] We suggest that the above dichotomy be amended with the addition of a mixed type or even a non-categorical continuum *(79)*, because of the frequency of disorganized features in the organized type of offender.

[‡] In the context of creating a uniform lexicon of terminology to avoid miscommunication.

[¶] It should be noted that Douglas et al. *(84)* did publish a text modeled on the DSM. However, this manual does not appear to have gained any significant degree of universal acceptance.

product of the research. One of the best illustrations of this concerns the debate surrounding what constitutes serial murder. Some authors argue that "serial" in this context can be defined by a numerical body count, for example, the murder of a minimum of three victims (84,85). Others have suggested a minimum of four (86) and some have suggested the possibility of five (87). Also, it should be noted that, at times, apprehended after one or two murders, an offender may indicate that he/she had had the intention to continue the killings (88). Based on this intention, these offenders could be considered serial killers. Presented with the varying criteria used to sample these populations, it comes as little surprise then that disparities arise between the research findings of studies that all claim to examine serial murder (63,77,86,87).

Inductive Versus Deductive Profiling: Does Such a Distinction Exist?

One recent development has been the suggestion that two distinct forms of profiling exist. The premise for this distinction is based on differing reasoning processes (i.e., inductive or deductive) that are argued to be in use by an individual when composing a profile. Inductive criminal profiling uses inductive reasoning, which in this context is defined as "reasoning involving broad generalizations or statistical reasoning, where it is possible for the premises to be true while the subsequent conclusion is false" (89, p. 686). Deductive criminal profiling, on the contrary, involves deductive reasoning, which is defined as "an argument where, if the premises are true, then the conclusions must also be true. In a deductive argument, the conclusions flow directly from the premises given" (89, p. 682). These distinctions form the basis of a method of profiling, referred to as behavior evidence analysis (BEA), which exclusively favors the use of deductive reasoning in combination with an understanding of the forensic sciences for the composition of a competent profile (90).

The problem with such distinctions is that it transposes philosophical paradigms onto the functional processes of the mind. Although the distinction between inductive or deductive reasoning is a well-established concept in the literature pertaining to critical thinking (91), there is debate in the cognitive psychology/psychiatry literature as to whether the mind functions in such a categorical fashion, that is, whether cognitive functions akin to inductive or deductive reasoning can be undertaken to the exclusion of one another (92,93). Unlike the autonomic functions of a computer, it is unlikely that the human mind is truly capable of engaging in such a discrete process of reasoning. Indeed, the brain itself, as a complex and highly active neuronal synaptic system, may subconsciously process diverse and/or intrusive thoughts that may increase the difficulty of full engagement in one or the other method. If the

cognitive processes of the mind are incapable of engaging in this fashion, the suggestion of a method of profiling premised on the issue of one form of reasoning to the exclusion of the other is rendered highly problematic.

Who Owns Profiling?

In the mid-1990s, profiling was examined by a subcommittee of the Association of Chief Police Officers (ACPO) in the United Kingdom. It concluded that although the technique had not yet been scientifically validated, it should be accepted in faith as being viable, as its validation would eventually be achieved. The committee went on to comment that the practice and work in the area of profiling should be "owned" by the police service *(94)*. Although perhaps not explicitly stated, similar sentiments regarding the acceptance of profiling and its ownership have been echoed in other countries *(95–97)*. The basis for this view appears to be related to a desire to avoid divulging operational information concerning profiling techniques to potential criminals *(7,98)*.

The concern in divulging operational information presumably arises from the publication of research in scientifically peer-reviewed mediums that by virtue of this process can be scrutinized by others. Although there is some merit to the contention that through the publication of literature potential offenders may be alerted to the techniques of police, such concerns need to be weighed against the low level of readership that scientific journals and texts enjoy generally. Additionally, the degree of sophistication such literature typically involves, coupled with the often poorer standard of education found among offenders who are the source of such research *(85–87,99)*, makes the usefulness of this material to such offenders questionable. The scientific development of profiling is likely to be most reliant on social science research methods that are oriented toward the production of scholarly research. This, however, is arguably not the focus of policing agencies that are primarily dedicated to maintaining public order and the apprehension of offenders *(100)*. Although profiling is unquestionably a forensic investigative technique used in the course of criminal investigations primarily conducted by police personnel, its development and practice is not necessarily best achieved by the exclusive efforts of police personnel. Contentions of ownership are counterproductive and likely to impede the genuine scientific advancement of profiling.

Professionalism

Correct professional behavior implies respect among colleagues and scientific communication without any ivory-tower attitude that impedes objectivity and the search for truth *(27,31,101)*. In the field of profiling, there should

be more communication among the proponents of the various theoretical and methodological schools of thought *(102)*, opening avenues of healthy communication and creating an arena for an objective, sound exchange of ideas. Although critical debate *(19,27)* is a valuable component of scientific development and, as in other disciplines, constructive criticism is essential for the advance in the understanding of profiling, in the literature, disputes over new concepts or new terms appear with disheartening frequency *(7,10,101–106)*. Indeed, it seems that there is a peculiar form of myopia among profilers who are unable or unwilling to cite, acknowledge, or build on the research of colleagues, or may be unaware of it at all. This phenomenon is an impediment to the scientific development of profiling because, without the integration of all research, the field is in serious danger of remaining a fragmented practice, with repetitious errors, duplication, failure to test theories, and a lack of exposure to differing scientific approaches *(107)*.

An Absence of Regulation

From a research, clinical, and practical point of view, one can assume that profiling is in a budding state and has yet to define an objective credentialing process. This is probably the reason why many unreliable statements are made in the various media by self-appointed profilers. The presence of sound credentials, as in any other field, should be paramount in the field of profiling. Unfortunately, credentials offered as qualifications to engage in profiling range from a familiarity with the published literature, employment with a law enforcement agency, qualifications in a mental-health discipline, authorship of a true-crime novel, the publication of scholarly research, or any combination of the above. The problems that arise from this are obvious and analogous to all other disciplines that have lacked regulation in ensuring common professional standards among individuals who identify themselves as practitioners within a defined area of expertise. Without regulation, gross disparities in the level of skill among practitioners can occur and the quality of the services rendered may vary considerably. In the context of police investigations, such disparities in the quality of the professional services rendered can have potentially disastrous results for the course of justice *(23)*.

Unfortunately, the solution of introducing some form of regulation is equally problematic. At present, differing proponents, who advocate one approach of profiling over another, have introduced self-styled accreditation programs. However, these programs may exclude and tend to discredit other practitioners within the field who offer different approaches or perspectives, and they create even more divisiveness among profilers.

CONCLUSIONS

What does the future hold for the practice of profiling and the research underpinning it? Unfortunately, the prognosis for the near future at least is less than encouraging. It seems that, as in any new field, the various participants are too absorbed in their own research and find themselves in an isolationist mode of operating.

Unquestionably, the research and practice associated with profiling needs further development and this needs to be undertaken in the form of original, data-driven studies that are subject to scientific scrutiny *(108–110)*. What is not required are simplistic claims accompanied by little more than a fresh lexicon of newly coined terms and phrases *(111)*. It is often debated whether profiling represents a science or an art *(112)*. At this juncture, the practice of profiling crimes seems to be more of an art *(113)*. However, it must strive to become a science.

In promoting this view, research in the field needs to focus on the development of practical techniques that make use of profiling that will serve to assist in the investigation of crimes and not just the promulgation of literature based on whatever data may be available. Additionally, future research needs to fully articulate its conclusions so that other researchers may replicate, build, and ultimately advance the knowledge gained in the area. In this context, therefore, researchers will need to communicate with one another, because this is the basis of the scientific method.

Because profiling is still in a developing phase, its regulation and credentialing must be developed through better communication among the various schools of profiling and the investigative agencies concerned. This will take some time. Perhaps the best compromise is for the practice of profiling to be incorporated into an existing professional body that does not hold any specific interest in profiling *per se* but would nonetheless serve to regulate its practitioners and promote its scientific development. Any of the regulatory bodies that govern the accreditation and practice of psychologists or psychiatrists, for example, may be appropriate. Such bodies would not be exclusively concerned with the practice of profiling but would have the benefit of being allied to the disciplinary origins of the technique. This proposition is not aimed at removing profiling from the province of law enforcement. There are many police personnel who, for example, have formal psychological qualifications and who are already affiliated with such bodies. Arguably, it simply makes sense to have an independent body that governs its membership according to recognized, regulated qualifications most suited to the skills for profiling and not only as membership with a particular employer *per se* such as a policing or

investigative agency. No doubt the scientific basis to profiling will need to be advanced before such professional bodies would be prepared to entertain such a proposition, but once again, this arguably would be a positive development.

In the future, better trust will have to develop between profilers and investigative agencies for the success of their common purpose: the identification of the offender. Both will have to overcome their narcissistic tendencies and recognize that they are complementary in the practice of profiling *(114)*. As for the differing approaches to profiling presently used by various methodological schools, it is to be hoped that their exponents will overcome their respective biases and see that they are all contributors to the definition of a larger puzzle and that no school of profiling holds the final answer. Their continued divisiveness only benefits the offender.

In conclusion, it is hoped that this chapter will inspire debate and encourage original data-driven research that will ultimately serve as the best solution to the problems discussed herein.

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Chapter 17

Fine-Tuning Geographical Profiling

Jasper J. van der Kemp and Peter J. van Koppen

Summary

Geographical profiling is an investigative technique that analyzes the spatial pattern of a related series of crime locations in order to predict the location of the offender's residence. After explaining how today's geographical profiling works, it is argued that such profiling may be improved if characteristics of the offense, the offender, and geographical circumstances are taken into account. Following that, we discuss the theoretical and practical limitations of geographical profiling.

INTRODUCTION

Most offenders undertake just a relatively short journey to the site of their crime. It appears that many types of crimes—such as stranger rape, robbery, burglary, and even serial murder—are committed at places where the routine of their lives brings the offenders *(1–3)*, usually in the vicinity of their residences *(4, p. 430, 5–10)*.

If the crime sites are related to the locations of the homes of the offenders, the crime site locations can be used to predict where the offender lives. With one or two crime sites from the same offender, this probably will not be a very successful enterprise. But with a larger number of crime sites, predictions can be expected to become better and better. Making such predictions is called geographical profiling.

Geographical profiling is an investigative technique that analyzes the spatial pattern of a related series of crime locations in order to predict the location of the offender's residence *(11,12)*. Geographical profiling has the ring of being very successful, but no study to date demonstrates that it is successful in helping the police investigation in more than just a small percentage of cases *(13)*. Canter blames the limits of the effectiveness of geographical profiling to many sources of error and noise in the data that the police supplies and the profiler uses *(13, p. 665)*. Poor performance of geographical profiling may, however, be partly due to the fact that profilers tend to neglect what we know about offenders' target choices and crime behavior *(14)* and just focus on the crime locations without taking into account the geographical context, the type of crime and the type of offender.

In this chapter, we discuss the methodology of geographical profiling, we identify where problems can be encountered, and we make suggestions on how geographical profiling may be improved. We will try to convince the reader that geographical profiling can indeed be improved if more is understood of offenders' journeys to their crimes and their decision making and if crime scene and offender characteristics can be associated with their crime site choices.

GEOGRAPHICAL PROFILING WITH LITTLE THEORY

In cases of domestic violence, predicting the home location of the offender is a straightforward and unproblematic task. In other crimes, the location of the offense is wholly dependent on the location of the victim, as for instance the stalking of a famous actress. In such a case, geographical profiling is impossible. Many types of crimes, however, are directed at potential targets that are more or less distributed randomly in space, where the crime involves a journey by the offender and that journey depends on both the location of the crime target and the location of the offender's home. For these types of crimes the journey to and from the crime is an integral part of the offense. Examples of that type of crime may be domestic burglary, stranger rape, or commercial robberies.

Let us assume that we have identified a series of such crimes, say robberies, of which we are pretty sure that these have been committed by the same single offender; maybe because witnesses of various crimes give comparable offender descriptions *(15)* or the *modus operandi* is peculiar and the same for each crime. We do not know how long the series has to be before we can start making a profile. Rossmo *(11,12)* argues that a series of at least five crimes is necessary, but that figure seems to be based more on the needs of police investigators than on theoretical or practical criteria *(16, p. 657)*. It can be argued that even with fewer crimes, geographical profiling can be useful

(13,16,17). So, let us stay on the safe side and take as an example a series of eight crimes from the type commercial robbery.

We know that most offenders stay close to home. So, a method of profiling could be computing the geographical average or centroid of the eight crime sites. The geographical average in a two-dimensional space is computed by taking the mean of the *Y*-values and the mean of the *X*-values of the crime sites. Although this procedure is seemingly without any sophisticated theory, it appears to be rather accurate *(18)*. At the same time, the use of this method implicitly introduces some assumptions about spatial behavior of offenders. For instance, it is assumed that the offender lives somewhere in the area defined by the cloud of point of the eight crime sites. That involves another assumption that the offender randomly chooses a direction of the wind to go to a crime site and that he (all our offenders are male) travels roughly the same distance to each crime site.

The simple methodology of the centroid could be refined to some extent. Next to the geographical mean one could, for instance, use the median. That is, the middle value of the distribution of the *X*-coordinates and *Y*-coordinates. Compared to the centroid, the median is less sensitive to extreme values; less sensitive to these one or two faraway crime sites, the offender may have chosen without any particular reason or because there happened to be a very attractive target.

Another measure is even simpler: the center of the circle. That is, the midpoint of a circle with the distance between the two offenses most distant from one another. In fact, some theory is introduced here. Canter and Larkin *(19)* proposed the circle theory of environmental range. Apart from the assumption that there is a relationship between the crime sites and the residence of the offender, they introduced two additional assumptions. First, there must be evidence that the offender is operating from a fixed home base, that is, the offender is not a drifter. Second, that it is appropriate to apply a geographical model that is as simple as possible. That model would be the domo-centricity assumption, where the residence of the offender is predicted to be in the middle of the circle *(20,21)*.

We could introduce some more theory, by adding the generally accepted notion in criminology that most criminals try to offend with as little effort as possible *(22)*, the so-called least-effort principle *(23)*. Using that, one could predict that for our eight robberies, the robber lives in an area around the spot that has the lowest total distance to the eight crime sites, the so-called center of minimum distance. In other words, it is the location from which it takes the least combined time and effort to travel to all the eight crime sites. It is not possible to directly compute that spot. An iterative computation is necessary and with eight crime sites that iteration is so complex that a computer is needed.

It goes for all the methods discussed that, after that spot is computed, the profiler needs to determine how large the area around that spot has to be to have an acceptable probability that the offender lives there. We do not know of a method to compute the magnitude of that area, based on the desired probability that the offender lives there [but see *(11)*].

DISTANCE DECAY

More refined methods of profiling are based on some version of the so-called distance-decay function [see for an overview of the techniques used in geographical profiling *(24,25)*]. If travel patterns of offenders are studied, typically this distance-decay function emerges (Figure 1). This function shows that most offenders commit their crimes at locations a relatively short distance from their residences; the farther away from home, the fewer crimes are committed. However, only few crimes are committed in the area immediately around the offender's residence *(5,26,27)*. This zone with few offenses is called the buffer zone.

An explanation of the occurrence of the distance-decay function is given in the rational choice theory *(3,28)* and closely resembles the least-effort principle. The economist Becker *(28)* argued that offenders, like other people, base their decisions on a cost and reward analysis. All else being equal, the option will be chosen that is associated with the least effort and costs and that renders the most profit *(29–33)*. Because the chances and the costs of being caught in a
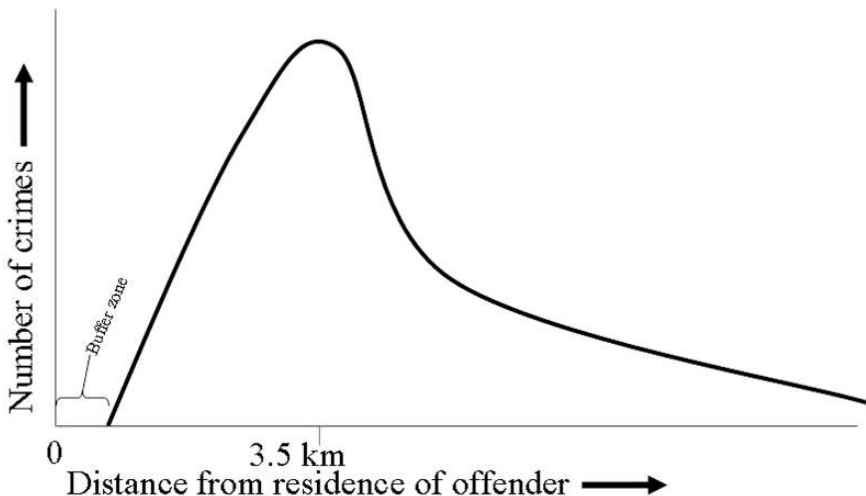
Fig. 1. Distance-decay function.

familiar area are high, offenders seem to have a buffer zone. In this way, a distance-decay function emerges, indicating that the area immediately around the offender's residence is associated with low traveling costs but higher costs of getting caught. The areas far away, however, are associated with higher traveling costs but lower costs of getting recognized and caught. An optimum will be found at or around the top of the function where there is a balance between costs of traveling and getting caught. For commercial robberies in the Netherlands, for instance, this top is 3.5 km from the residence of the offender *(5)*.

The distance-decay function is well established as an aggregate description of travel behavior of offenders, although the shape varies depending on the type of crime or type of offender. The existence of the buffer zone, however, is under discussion. There is little agreement on how the buffer zone should be defined or how it should be measured *(16)*. Indeed, in some studies, no buffer zone is found *(34,35)*. If geographical profiling is done with the assumption of a buffer zone, it is not more accurate *(36)* or even less accurate than that without the assumption of a buffer zone *(37)*.

With or without a buffer zone, the distance-decay function is usually explained using offenders' knowledge of costs and benefits. In reality, however, offenders do not know the real costs, efforts, and profits of the different options, and their decisions are far less rational than is commonly assumed. Rather, their decision making is based on the perceived costs and efforts and the expected profits. This adapted model, called the bounded rational choice model *(38,39)*, proposes that possible crime locations close to an offender's residence will probably be avoided because of the higher perceived risk of apprehension. Furthermore, possible offense locations very far from home will often be avoided because the perceived costs of traveling are too high, when alternatives closer to home can be found. If, however, faraway targets are very promising, a longer journey is undertaken *(5)*.

GEOGRAPHICAL PROFILING WITH MORE THEORY

The distance-decay function is used in computer programs that have been developed to aid geographical profiling, such as David Canter's DRAGNET *(37)*, Kim Rossmo's RIGEL *(11)*, and CrimeStat by Ned Levine *(24,40)*. At least they come close. In reality, Canter's DRAGNET uses a negative exponential function that resembles the linear distance-decay function but differs from it in the sense that the probability of an offender living at a particular location decreases exponentially, instead of linearly. Also, Canter's program does not include a buffer zone. The functions used in Rossmo's program resembles a truncated negative

exponential function that is a mix of a positive linear function and, after a peak at some distance, a second negative exponential function. Both the programs draw a probability function around each crime site and sum, for each point (or cell) in space, the values of the functions derived from each crime site. In that manner, each point gets a probability value for being the offender's residence.

However, the distance-decay function is not without limitations. For example, Van Koppen and De Keijser *(41)* demonstrated that the distance-decay function may be an aggregation artifact. They started from a simple model, where each offender has a range of operation around his residence. That range of operation can be depicted as a circle in a two-dimensional space. Not each offender has the same range of operation. Assume that all offenders attach at random places in their respective ranges of operations. If offenders who are in the habit of committing a particular type of crime indeed have different ranges of operation, automatically, a distance-decay function emerges at the aggregate level. This is so, because at relatively close distance, all or most of the offenders contribute to the distribution depicted in the curve, whereas the farther from home, the lesser offenders contribute to the curve [this is more fully explained in *(41)*]. So, an aggregate distance-decay function does not reflect that individual offenders also have as a distance-decay function.

An individual range of operation would mean that, within that range, each potential target has an equal probability to be targeted by that offender. If Van Koppen and De Keijser *(41)* are right [see for a critique *(4)*], the distance-decay function is not necessarily useless. In fact, then the distance-decay function is a function of the distribution of ranges of operation of the offenders. It could still be used for geographical profiling if nothing is known about the range of operation of a particular type of offender under investigation.

The concept of range of operation, however, could be useful to do geographical profiling in another manner in computer programs as in Dragnet and Rigel. Take, again, as a starting point, the eight robberies of our offender under investigation. One could draw circles around the crime sites with a randomly chosen but equal diameter. Then increase or decrease the diameter of all circles such that all just overlap at a single point or, if that is not viable, with an area as small as possible. That would deliver a prediction of the offender's residence. As a next step, the diameter of all circles could be increased to enlarge the search area for the offender's residence. Of course there is a trade off. A large area gives a higher probability that indeed the offender resides in the area, but the potential suspects also increase in number. But, again, there is no rule to decide how large this area should be.

We would like to propose that this method may produce better results, but without empirical validation, it is merely a hopeful contention. Please

note that Canter *(13)* pointed out that all current methods produce similar results *(11,24,37,40)*. So probably any new method will not perform completely different or much better.

All methods discussed until now assume that potential crime targets are distributed randomly in space. Of course this is unrealistic. For instance, targets for commercial robberies in European cities are far more readily available in the city center and along main streets. Targets for stranger rapes at night are more available around entertainment areas. Also, all methods discussed until now assume that all directions from the offender's residence have an equal opportunity to be chosen. And, again, this is unrealistic. Criminal travel behavior is influenced by geographical characteristics, such as seas, lakes, rivers, and main roads *(42,43)*. Travel behavior is also influenced by social boundaries between neighborhoods *(44)*. More general, search patterns of offenders are usually not normally or uniformly distributed *(45)*. Instead, criminal trips appear to be determined by routine activity, availability of targets, and geographical and social conditions. Present day methods of geographical profiling do not incorporate these peculiarities and even seem to ignore them.

THE OFFENDER'S ROUTINE ACTIVITY

People know best the environment around the place where they live, the places they visit often, and the routes between them, like their commute to their work place and its surrounding area. They organize the knowledge of their environment around these anchor points *(46)*, also named activity nodes *(47,48)*. Brantingham and Brantingham *(47–50)* assume that offenders search their targets in their activity space that is defined by their activity nodes and the paths connecting them. Indeed, crime trips into unknown territories to locate crime sites are relatively rare *(51)*. This contention is based on the so-called routine activity model *(1,2,52,53)*. In this model, "opportunity" is an important concept to explain criminal behavior. Offenses occur as a result of the convergence in space and time of three important elements: a motivated offender, a suitable and vulnerable target, and the absence of a capable guardian against crime *(52)*. In the words of Brantingham and Brantingham *(48, p. 284)*:

> The patterns in crime are potentially explicable when the decision process that is crucial to its commission is viewed in conjunction with the actual activity backcloth of offenders and victims, together with general variation in criminal motivation that are themselves not independent of the opportunity backcloth. In some types of offences triggering events dominate crime patterning. For other types of crimes, past behavioral history, the actual availability of

suitable targets, the creation of a decision template and the current activities of potential offenders drive the pattern.

In current models of geographical profiling such decision processes hardly have a place. As a consequence, many relevant factors that play a role in the offenders' spatial behavior are not used to aid profiling. The distance traveled, for instance, varies with characteristics of the offender, such as gender *(27)*, race *(35,54–56)*, intelligence *(6)*, and age *(6,26,29,54)*. Nichols *(54)*, for instance, found that the average distance traveled by older robbers was 4.98 miles while by younger robbers it was 2.02 miles. Whites travel farther (6.67 miles) than Blacks (2.29 miles). Also, the type of crime matters. Offenders travel farther for property crimes than for crimes against people *(5,8,29,57,58)*. Robbers of commercial targets, for instance, travel farther than other kinds of criminals *(32,42)*.

Even within types of crimes, relevant differences are found in crime trips. Robbers travel further for a target with a potentially big loot *(5,9)*. Sexually sadistic rapists may show excessive driving before they commit their rape *(59)*. And circumstances matter. Robbers travel farther when their mode of transportation is faster, and they travel farther in rural areas *(5)*.

Even the country matters. Lundrigan and Canter *(60)* demonstrated that American serial murders travel farther—both for their encounters with the victims as for dumping the bodies—than serial murderers in the United Kingdom [see also *(11,20)*]. Also the day of the week makes a difference; weekend rapists travel farther than weekday rapists *(56)*.

Although most of the studies mentioned were done on aggregate data, their results are relevant to geographical profiling. If, for instance, the police know that a commercial robbery was committed by an older White offender in a rural area using a car and the robbery generated a big loot, a longer trip can be assumed than if the crime was a rape committed by a Black youngster on foot in an urban area. Incorporating these elements in models of geographical profiling might enhance their utility considerably.

GEOGRAPHICAL PROFILING WITHOUT COMPUTING

Geographical profiling is typically done with a computer program, because some methods involve heavy computing *(11,24,37,40)*. It is a fair question whether all this computing is necessary *(61,62)*. Snook and colleagues *(25)* compared the accuracy in predicting the offenders' residences, between complex and less complex methods of profiling. They defined the complexity of profiling methods as the number of mathematical steps (such as adding or dividing) it takes to complete the profile. They found that the more simple

methods where as accurate in predicting the location of offenders' residences as the more complex ones, regardless of the number of crimes in a series.

If simple methods would do for profiling, that leads to a second question: Is all that computing really necessary? Again Snook, with other colleagues *(18)*, tried to answer this question. They compared the accuracy of human and computer-based geographical profiling. Participants were given ten displays, each depicting three crime locations of a real serial killer. The participants were given a written description of two basic geographical profiling principles: (i) the majority of offenders commit offenses close to their residences (distance decay) and (ii) the majority of offenders' residences can be located within a circle with its diameter defined by the distance between the offenders' two farthermost crimes [matching Canter and Larkin's circle hypothesis *(19)*]. Participants who were given these instructions were better in predicting the murderers' residences than participants who were not instructed. More importantly, instructed participants performed as well as the geographical profiling system DRAGNET.

TWO TYPES OF CRIMINALS

The study by Snook and colleagues *(18)* did not produce uniform results for the ten series of serial murders. Participants performed well for five series. Those were the series where the murderer lived within the area of the crime sites. In the other five series, both Snook's participants and DRAGNET performed much poorer. These were the series where the offender commuted to the area of the murders. Canter and Larkin *(19)* made a distinction between marauders and commuters. These two types of offenders differ in the sense that marauders live within their criminal range, whereas commuters travel to their criminal range from elsewhere. The criminal range is the general area where the crimes are committed; or more precisely defined, following Canter and Larkin, the area defined by the smallest circle that encompasses all crime sites of a particular offender. Then, marauders are the offenders who have their residence in that circle; commuters are the offenders who travel from their residence outside their criminal range. Contrary to marauders, there is no evident relationship between the place of residence and the criminal range for commuters. As a consequence, geographical profiling is not possible for these commuting offenders. Studies showed that between 11 and 14% of serial murderers are commuters *(60)*. But it is a fair assumption that for other types of crime, the percentage of commuters may be much higher. Kocsis and Irwin *(34)*, for instance, found that 18% of arsonist were commuters, but also 29% of serial rapists, and even 52% of burglars were of the commuting kind. Van der Kemp, in an as of yet unpublished study, also found a 50-50% division of marauders

and commuters for serial property crime offenders in the Hague area in the Netherlands as did Kocsis et al. *(63)*.

Geographical profiling, with any of the current methods, is only possible for marauders and not for commuters (Rossmo denotes these categories local hunters and poachers, respectively) *(11,12)*. An important issue, then, is how one can tell in which of the two categories a serial offender falls, based on the series of unsolved crimes. The answer is simple: we cannot with any decent probability. Rossmo *(11)* writes that before one begins to make a profile, it should be established whether the offender is a local hunter. He does not give an indication how one should make this distinction.**

Meaney *(64)* tried to identify offenders' and offense characteristics that could aid in distinguishing between marauders and commuters. Most of these characteristics, such as age, gender, nationality, and alcohol intoxication, could not be used for this purpose. Meaney did find that offenders in metropolitan areas are more likely to be a marauder, whereas rural offenders tend to be commuters. Another result of her study was that burglars were more often commuters than non-burglars, whereas serial rapists were more likely to be a marauder compared to non-rapists *(64)*. The practical value of Meaney's findings is limited, because the relationships she found are not very strong, and her study did not involve many characteristics that are usually known in a police investigation before the offender is captured. In short, there is really no way it can be decided by looking at a series of offenses whether the offender is a marauder or a commuter (see also *(13,16)*].

PRACTICAL PROBLEMS

Apart from the marauder-versus-commuter problem, other practical problems emerge if geographical profiling is done in police practice. Rossmo *(11,12)* identified at least four assumptions that precede the application of geographical profiling. First, the crimes must be a series. Second, the offender must not have moved in the middle of the series. Third, the offender is not a commuter (a poacher in Rossmo's terms) but a marauder (local hunter). Fourth, the target/victims should be distributed in some uniform manner in space. Rossmo is right, but there are more practical problems in geographical profiling. We divide these into offender problems and problems of circumstances.

** There is a document produced by Rossmo indicating poacher/commuter factors however this is neither published or empirically validated.

DEVIANT OFFENDERS

The basis of geographical profiling is that offenders travel from the residence to the crime sites. But many offenders do not, for various reasons. First, some offenders do not have a steady place to live. These include itinerants and the homeless, but also groups of foreigners who travel around the country committing crimes. As soon as witness statements give some indication that the offender may be from these categories, any geographical profile is of very limited value. Second, in the discussion until now, we assumed that offenders start their crime trip from the place where they live. But offenders may have multiple places they start from, for instance, both their home and the place where they work. As a case illustration a few years ago, the second author had been working on a case of a serial robber in Amsterdam. Making a geographical profile seemed straightforward, but after the robber had been arrested—not with the help of the profile—it turned out that he was moving from hotel to hotel in the city, never staying long in a single one. Another case example relates to a prolific serial rapist who was active in Amsterdam. After his arrest, it turned out that he came to Yugoslavia and had done the same in both Yugoslavia and Germany. He committed the rapes in Amsterdam while staying with his aunt. These kinds of problems may be present in a minority of cases *(1,3,65)*, but they do make geographical profiling useless in these cases or even misleading.

A third problem applies to cases with multiple offenders. There is no empirical basis that allows for making a geographical profile for cases with multiple offenders. This point holds true even more for groups of offenders who commit crimes in varying subgroups. We simply do not know whether, for instance, a dominant member of the group determines the crime locations or that the effects of their places of residence is somehow pooled. The latter would imply a larger search area for crime target if the group members do not live close to each other.

A fourth problem is that some offenders have an atypical routine or that offenders suddenly deviate from their routine. An example of the latter is the following case. A few years ago, in a study on robberies (*66*, this case is not reported there), we came across a pair of robbers who had the habit of committing bank robberies in their home town Eindhoven in the south of the Netherlands. At some point in time, they suspected that the local police was on their heels. So they decided to change their work area to the very north of the country, rented a car, and found a suitable bank there. At their first robbery in the north, they were apprehended, thanks to an alert victim.

A fifth and final offender problem is *modus operandi*. Geographical profiling is done on a series of crimes by the same offender. So a prerequisite

is that we know that the series has been committed by the same individual. That is usually assessed by the police on the basis of the *modus operandi* or offender descriptions by witnesses or based on CCTV. In many cases, however, the police are not very certain about whether all crimes in a series came from the same offender. The *modus operandi* poses another problem: not all aspects of it are always clear cut. For instance, in the previous study on commercial robberies *(5)*, it was found that witnesses cannot always give information on the means of transportation that was used by the robbers. Sometimes witnesses report that the offender came on foot, whereas after apprehension, it turns out that he came by car but had parked it out of sight. Knowing the means of transportation, however, is important for geographical profiling. For commercial robberies in the Netherlands, 78% of the offenders who come on their bike traveled less than 6 km, whereas 55% of car driving offenders traveled more than 6 km *(5)*.

DEVIATING CIRCUMSTANCES

Geographical profiling is commonly based on the distance-decay function. The distance-decay function, however, is just an aggregated and crude image of criminal activities. For individual offenders and in the particular circumstances of the area of the crime sites, routine activities may deviate considerably along the following lines.

First, the local space is often disturbed by special geographical characteristics. Present day geographical profiling, however, assumes that these do not exist. Take for instance the waterfront of Brighton. It is impossible for a criminal to commit most types of crime at sea. That means that such a waterfront influences the spatial distribution of crimes. Another example is the difference between robberies in Rotterdam and Amsterdam *(67)*, which demonstrates that the pattern of streets influences robberies. Rotterdam was bombed by the Germans in the beginning of World War II. After the war, Rotterdam was rebuilt with wide streets. Amsterdam is still the old town with many narrow streets like Rotterdam used to be. The consequence is that commercial robberies in Amsterdam are committed much more in the vicinity of public transport lines, whereas Rotterdam features more robberies utilizing cars. As a consequence, not only the average distance between the residence of the offender and the crime site is much larger in Rotterdam than that in Amsterdam, but the two cities also have markedly different geographical distributions of robberies.

Second, geographical profiling assumes that potential crime targets are distributed randomly in space. But, of course, that is seldom the case. Again, commercial robbery targets are usually more frequent in the center of European cities. As a consequence, they attract more robberies. The areas of operation of

robbers therefore are often skewed towards the city center. But also more refined geographical elements may play a role. Hakim and colleagues *(68)*, for instance, demonstrated that, in residential burglary, the vicinity of an exit of a motorway may play a role, as well as whether woods and playgrounds are adjacent to the target house. The general problem is that there are no empirical studies of how potential targets are distributed in space, and there is no evidence demonstrating whether and how target backcloth influences travel behavior of offenders *(16)*.

Third, for some types of crime, one should not look at the place of the crime site. For stranger rape, for example, a relation can be expected between the residence of the offender and the place where he first "picked up" the victim. The actual place of the rape, however, is more determined by the travel direction of the victim and suitable places to rape her along her route. Thus, the place where the offender first encountered the victim is the one of interest. But that place is seldom precisely known. Also, police officers sometimes misidentify the exact place where a crime occurred. That is, errors in the information provided by police will introduce error in the process of geographical profiling *(13)*.

Fourth, profilers always look at the crimes that were committed. Bernasco *(69)* argued that it may be a useful strategy to include crimes not committed in the geographical analysis. He demonstrated that information on targets *not* selected can contribute to the quality of a profile. In the most simple version, if an offender must have passed an attractive target from the right kind that he did not attack before he came to the crime site where he committed his crime, he must have come from another direction. This manner of reasoning— or the much more sophisticated version by Bernasco—could contribute to geographical profiling, but only under a number of conditions. First, the profiler must be able to define and assess the potential targets in the relevant area. If these targets are moving—like potential rape victims or cars to be stolen—this is an impossible task. For some others, it may be possible but very costly, such as dwellings to be burgled. But for commercial robberies, this may be a desirable addition to geographical profiling, especially because robbers tend to specialize *(5)*. Second, one should be very well informed on what targets should and should not be included and, even better, be able to measure the attractiveness of target to offenders. Of course, target attractiveness may differ from offender to offender.

CONCLUSIONS

Geographical profiling can be a helpful tool for police detectives who investigate series of crimes that apparently have been committed by the same offender. Although we know little of the day-to-day use of geographical

profiling in police practice, it is assumed that geographical profiling is only helpful in a small percentage of cases *(13)*. Canter blames foremost the quality of the police data for this. But another cause may be that geographical profiling is still underdeveloped.

In our discussion, we have tried to demonstrate to the reader that geographical profiling can become more helpful to the police if more relevant variables are incorporated. One should not just use one of the computer programs—they produce similar results anyway—but one should at least incorporate in the analysis what is known about relevant characteristics of the offender, the type of crime, and the geography of criminal range and surroundings. Following the work by Snook and colleagues *(18)*, it may be a sound strategy to use a good map of the relevant area next to, or maybe even instead of, the computer program *(62)* (Chapter 10).

In this manner, geographical profiling may become more helpful to the police. But we do not expect that geographical profiling will become helpful in many cases. First, as previously outlined, there are serious practical problems. Second, several relevant factors can only be assumed at the time that a profile is made. The most important one is that a more or less large category of commuting criminals cannot be profiled. If a profile is made on these cases, it will be rather misleading than helpful. Geographical offender profiling should be fine-tuned in order not to lose its promising tone.

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Chapter 18

*Skills and Accuracy in Criminal Profiling**

Richard N. Kocsis

Summary

This chapter discusses the empirically derived conclusions of studies that sought to examine the accuracy and skills of various groups performing a profiling task. The conclusions provide some support for the contention that professional profilers can produce a more accurate prediction of an unknown offender in comparison with other studied groups. The results also give an indication of the type of skills required for proficient profiling.

INTRODUCTION

Criminal psychological profiling, or more simply "profiling," is the technique of analyzing behavior patterns of a crime or series of crimes in order to primarily construct a descriptive template of the probable offender. Although the concept of profiling has expanded into new spheres such as predicting an offender's area of residence, the bulk of profiling literature remains concerned with the identification of an offender's biographical characteristics such as their age, sex, marital status, and employment status *(1)*. The oft-cited role of profiling is as an investigative aid *(2,3)* with a constructed profile typically serving to guide an investigation either by matching the profile with a pool

of suspects or by offering a compilation of descriptors from which potential suspects may be identified for investigation.

Unlike other mainstream forensic techniques such as fingerprinting or facial identity-kits, the origins of profiling stem from the investigation of atypical crimes that usually feature a psychologically aberrant offender whose motives appear outside typical criminological patterns and police investigative procedures *(4,5)*. Indeed, the genesis of profiling as a technique seems to be inextricably linked with the concept of the serial killer. The investigation of possibly one of history's first serial killers, the Whitechappel murderer (aka "Jack the Ripper"), involved the consultation of psychiatrist Dr. Thomas Bond to provide the police investigation with some description of the potential offender based on the behaviors exhibited in the crimes *(6)*. Other historical subjects of criminal profiles include the Mad Bomber of New York and the Boston Strangler *(7,8)*. Although now advanced by progress in various disciplines, the fundamental concept of interpreting behaviors to determine the characteristics of the probable offender(s) remains essentially the same to this day.

Despite the long history of psychological analysis in assisting some form of criminal investigation (now contemporaneously termed profiling) and its popular renown over other forensic techniques, surprisingly little empirical scrutiny has been undertaken to examine the validity of profiling *vis-à-vis* correspondence between a profile and the actual perpetrator *(9,10)*. Indeed, the bulk of material cited in support of the accuracy and thereby the validity of profiling consists of largely anecdotal accounts found in true crime memoirs *(11–13)* or in non-academically, peer-reviewed journals *(3,14)*. A number of studies have shown that police are often happy with or request profiling services in their investigations *(15,16)*, and at times, these consumer satisfaction studies appear to be offered as evidence to support the accuracy of profiling *(17–19)*.

The purpose of this chapter is to contribute to the empirical knowledge of the effectiveness of criminal profiling. The conclusions offered in this chapter draw on the combined research of Kocsis et al. *(20,21)* and Kocsis *(22)* with some additional original data included in the analysis. The combined data considered currently represent the largest, empirically based sample of professional profilers and other groups performing a criminal psychological profiling exercise. The findings outlined in this chapter are intended to contribute to some comparative and empirically based understanding of the level of accuracy and types of information profilers appear more proficient in and seeks to identify the constituent skills and information that contribute to effective profiling.

WHY HAS PROFILING DEVELOPED DESPITE LITTLE EMPIRICAL EVIDENCE FOR ITS VALIDITY AND WHY IS THERE A NEED FOR SUCH RESEARCH?

It is worthwhile to momentarily consider what has transpired to explain the growth in profiling despite the apparent lack of empirical evidence to support its validity. There are possibly three broad factors that have generally contributed to this situation. The first is the fictional media glamorization surrounding the technique (23). These depictions are seldom precise and often present a favorable, albeit fanciful, representation of the technique. The second factor is that unlike most other psychological techniques, profiling has predominately been developed and utilized by policing agencies. Unfortunately, police agencies often feature insular organizational cultures that are frequently reticent about the independent scrutiny of their practices (24–28). Consequently, within such organizational environments, the requirement for police profilers to substantiate their methods to the standard normally encountered in the broader scientific community has generally not occurred (29). Indeed, given the common position of profiling as an investigative tool (2,3) and not as a regular form of legal evidence *per se*, the technique often escapes the sort of judicial scrutiny other forms of forensic evidence are frequently subjected to as part of the criminal justice process.

The third factor is a circumstantial and somewhat circular rationale that is sometimes expounded when profilers are occasionally required to provide some justification for their practices. At the core of this circumstantial argument is the contention that the accuracy and therefore the validity of profiles are indirectly demonstrated via their continued use and demand by policing agencies (1, 30). It is suggested that were profiles not perceived to be accurate, police investigators certainly would not continue to request further profiles for future investigations.

Three recent studies, however, suggested that the accuracy may be in the eye of the beholder. Kocsis and Hayes (31) investigated the perceptions of police officers with regard to the accuracy of a profile and found that perceptions concerning the accuracy of a profile were related to the perceived (but not real) credibility of the author. Police officers, in their study, read a profile labeled as being written by a professional profiler, psychic, or "someone the investigator consulted" in response to a case file of a closed homicide case. Unknown to the participating police officers, the author of the profile, as labeled in the instructions, was determined randomly. The participants were shown a particular profile and asked to indicate their expectations as to how accurate they regarded the profile to be. Not surprisingly, profiles that were labeled as

being written by professional profilers were perceived by police to be more accurate. After these judgments were provided, the participants were given a description of the actual perpetrator of the crime and were asked to make a side-by-side comparison of the profile and the actual perpetrator and then judge the accuracy of the profile in comparison with the actual perpetrator using a 1 (not at all accurate) to 7 (very accurate) scale. The results were surprising. In a side-by-side comparison between the profiler and the actual perpetrator, police officers rated the profile ostensibly written by a professional profiler as more accurate than the one ostensibly written by a psychic, although they contained the same information and the author label was merely randomly assigned to the profile. This study suggested that the perception of the accuracy of a profile is quite likely to be associated with the reader's biases regarding the credibility of its author. In two subsequent studies *(32,33)*, another factor that was also found to influence and potentially bias a reader's perception of a profile's accuracy was the degree of belief in profiling the reader possessed. Thus, exposure to material that endorsed the use of profiling elevates the perceptions of a criminal profile's accuracy. These findings have serious ramifications when considered within the context of the predominantly favorable media treatment profiling routinely receives in our society.

PAST EMPIRICAL EXAMINATIONS OF PROFILING

Possibly, the first academically published research to empirically investigate the accuracy of profiling was undertaken by Pinizzotto and Finkel *(34)*. This research involved the details of a closed rape and murder case being given to small groups (consisting of six subjects in each). The respective groups were trained profilers, police detectives, clinical psychologists, and students. Each group was assigned the same profiling exercises and asked to identify the likely offender. The details of the perpetrators of both offenses were known, thus providing the "correct" profile as a criterion for quantitative analysis. This research was composed of six small studies that included exercises that involved the linguistic measurement of the produced profiles, a prioritization exercise of potential suspects, and an exercise to measure the recollection of case information. However, of most relevance in the study conducted by Pinizzotto and Finkel was an exercise that involved administering two 15-item multiple-choice questionnaires to each participant in each of the groups. These questionnaires were designed to objectively elicit from each of the participants predictions concerning the characteristics of the probable offender for both the rape and murder cases. This study, as a consequence, served as the first true quantitatively based demonstration of profiling accuracy. Unfortunately, however,

the results of Pinizzotto and Finkel's *(34)* study were far from unequivocal in demonstrating the accuracy of profilers. No significant differences were found among any of the groups involving the number of correct predictions in the murder case. The sampled profilers were unable to predict the characteristics of the murderer any better than any of the compared groups, and indeed, their mean score was found to be the lowest among the four groups.

Slightly better results, however, emerged with respect to the sexual assault case. First, the profilers were found to significantly outperform a categorization of non-profilers that combined the scores of the detectives, psychologists, and students. Additionally, a law enforcement categorization of profilers and detectives surpassed the non-law enforcement categorization of psychologists and students. Finally, a categorization of all professional groups, that is, the combination of profilers, detectives, and psychologists surpassed the non-professional students. When examining the specific items of information in which profilers excelled, it was found that they consistently identified items concerning age, education, and the vehicle condition of the offender, as well as the nature of the relationship between the victim and the offender.

Despite profiling being routinely available to law enforcement bodies for approximately three decades, the only empirical, academically published demonstration of profiling accuracy (with the exception of the work to be shortly discussed) occurred in a component of Pinizzotto and Finkel's *(34)* research. The findings of their investigation, however, are not altogether encouraging, with no quantitative evidence to support the accuracy of professional profilers in respect of the murder case and only limited evidence in support of the rape case exercise. Given the increased utilization of profiling techniques by law enforcement agencies throughout the world *(35)*, a more thorough examination of the efficacy of profiling is clearly warranted.

NEW EMPIRICAL RESEARCH

The most recent approach to empirically testing the accuracy and therefore the validity of profiling was akin to that adopted by Pinizzotto and Finkel in their 1990 study by presenting information to participants about a crime where the offender's characteristics were already known. The individual findings from each of these studies are reported in Kocsis et al. *(20,21)* and Kocsis *(22)*. The design of each study was similar to that of Pinizzotto and Finkel *(34)* in that it involved a solved arson or murder case. Next, all the case materials for each of the crimes that had been available to investigators prior to the respective perpetrator's apprehension were assembled and summarized. Accompanying each of these case packages was a 33-item multiple-choice questionnaire that

was designed to elicit an objective description of the probable offender.[†] As both of the cases had been solved, the responses to the questionnaires could be objectively scored for accuracy against the known details of the convicted offender. These studies sought to examine the correlates of accuracy *vis-à-vis* the characteristics of the person writing the profile.

WHAT SKILLS OR SPECIAL APTITUDES MIGHT BE USEFUL IN CONSTRUCTING AN ACCURATE PROFILE?

With the exception of Hazelwood et al. *(36)*, the literature is largely silent on this matter. Generally four principal attributes emerge as being essential to effective profiling. The first skill identified by Hazelwood et al. *(36)* is an appreciation of the criminal mind and entails an ability to understand the type of person who committed any given crime. The second prescribed skill is that of investigative experience, and in the opinion of Hazelwood et al. *(36, p. 119)*, "No amount of education can replace the experience of having investigated crimes". The third skill is a capacity for objective and logical analysis, that is, the profiler must possess an ability to think logically without being diverted by personal feelings about the crime. The fourth nominated skill is the psychic-like faculty of intuition.[‡] The studies by Kocsis et al. sought to empirically examine the relevance of each of these skills to effective profiling.

To emulate the skills of objective reasoning, investigative experience, behavioral knowledge, and intuition for the purpose of the study, participants were recruited who predominantly demonstrated each of these skills. Consequently, a sample of 20 self-declared psychics was selected to demonstrate the capacity for intuition. To garner a group of individuals who possessed skills in logical and objective reasoning, a combined sample of 85 university science sophomores was obtained over all three studies. For some representation of an understanding of the human psyche and appreciation of behavior, a combined sample of 36 psychologists was assembled from the first two studies.

Clearly, the most obvious group of individuals who are inherently representative of investigative experience are police personnel. However, because of Hazelwood et al.'s *(36)* description of investigative experience as the quintessential skill for effective profiling, particular focus was placed on the

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[†] Full details of these case booklets and questionnaires can be found in Kocsis et al. *(20)* and Kocsis *(22)*.

[‡] A thorough discussion of the rationale underpinning each of these skills and the identification of participants for these skills can be found in Kocsis et al. *(20)*.

empirical documentation of this skill. For this reason, numerous samples were obtained to account for a range of both quantitative and qualitative possibilities concerning the inherent attributes likely to stem from such experience. The fundamental notion of investigative experience involves quantitative notions of exposure. Presumably, Hazelwood et al. *(36)* considered that the more criminal investigative experience an individual has had, the more likely they are to be proficient profilers. Consequently, to account for such quantitative differences, three samples of police personnel were recruited to optimally examine any role of quantitative differences in investigative experience. To represent the novice capabilities derived from only minimal experience, a combined sample of 50 police recruits was obtained who had just commenced their training as police officers. As a contrast to the recruits, two samples of experienced police personnel were obtained. One combined sample consisted of 88 general police personnel who possessed a substantial amount of experience but not necessarily with respect to the investigation of crimes in any specialized area relevant to the case information. The second combined sample consisted of 26 specialist detectives who also possessed a significant amount of experience, but this experience was sourced specifically in the investigation of crimes akin to the presented cases (i.e., murder and arson).

Another important aspect of investigative experience involves a qualitative dimension. Thus, it is not merely experience in the investigation of crime alone that is relevant, but specific experience in the investigation of crimes presented for profiling. To take account of this factor, the previously mentioned samples of general police versus specialist detectives were relied upon. However, to further explore this issue, an additional group of 12 non-police specialists was also introduced. This group comprised arson investigators from fire brigades. This group of 12 personnel possessed a substantial amount of specialized experience in the investigation of arson offenses akin to the specialist detectives and thus possessed a qualitative investigative experience different from that enjoyed by a police officer.

As the pivotal issue of this research is the empirical assessment of accuracy in profiling, a combined sample of 11 expert criminal psychological profilers was assembled during the course of all three studies. Thus, the profiler group was expected to provide a demonstration of their capabilities that would serve as a criterion against which to compare the performance of the other groups.

Finally, to act as a control condition for all of the previously mentioned groups, a combined sample of 120 unskilled participants was obtained during the course of all three studies. These individuals did not possess skills akin to any of the previously described groups. Furthermore, these control participants

were not given any case information for the crimes and were instructed to complete the multiple-choice questionnaire simply by speculating about what they believed were the characteristics of the "typical" murderer or serial arsonist. This control condition, therefore, afforded an empirical demonstration of what could be achieved on the questionnaire simply by guesswork and reliance on stereotypical notions of a murderer or serial arsonist.

As the purpose of this analysis is to present a holistic impression of the data from all three of the previous studies, as well as to incorporate additional data not previously utilized, a procedure was undertaken to make the scores comparable across all studies prior to combining the data. Kocsis et al. *(20,21)* used a homicide case, whereas Kocsis *(22)* used an arson case. Given that these are different crimes, and the questions on the profiling task were different, it is not necessarily the case that getting, say, 15 questions correct on the homicide profiling task equates to the same accuracy as getting 15 correct on the arson profiling task. To make the scores comparable before pooling the studies, the accuracy scores were first standardized within crime type by converting the scores to z scores (i.e., deviations from the study mean in standard deviation units). After this transformation, an accuracy score of one, for example, corresponds to performance one standard deviation above the mean, where the mean is in reference to the performance of all participants completing the profiling task for that particular crime ($n = 335$ for homicide and $n = 95$ for arson). Converting the scores to this common metric makes them comparable across studies. Table 1 summarizes the combined analysis of the data sets from all studies as well as the additional data.

THE PERFORMANCE OF PROFESSIONAL PROFILERS

The fundamental aim of this study was to undertake an empirical examination of the capabilities of professional profilers with specific regard to whether they could produce a quantitatively more accurate profile of an unknown offender by way of holistic comparison with the other sampled groups from the combined previous studies. From the admittedly limited sample of 11 professional profilers, some affirmative indication emerged to the effect that the sampled profilers were capable of outperforming the other tested groups. In particular, the profilers surpassed all the compared groups in the total number of correct predictions as summarized in Table 1. Although in no way claiming to be statistically representative, the current sample of 11 individual professional profilers does represent the largest empirical sample currently available to inform the scientific and law enforcement communities on the issue of

Table 1
Mean Profile Accuracy Standardized within Crime Type (Standard Deviations in Parentheses)

Group	Accuracy measure				
	Total correct	Physical characteristics	Cognitive responses	Offense behaviors	Social habits/history
Psychologists (*n* = 36)	0.16(1.13)	0.50(0.74)	−0.30(1.09)	0.33(0.95)	−0.10(1.10)
Profilers (*n* = 11)	0.82(1.32)	0.56(0.69)	0.34(1.14)	0.34(1.07)	0.49(1.08)
Science students (*n* = 85)	0.31(0.87)	0.40(0.84)	−0.18(0.98)	0.10(0.98)	0.37(0.94)
Specialist detectives (*n* = 25)	−0.43(1.09)	0.17(0.85)	−0.37(1.05)	−0.22(0.95)	−0.47(0.91)
Psychics (*n* = 20)	−0.14(0.87)	−0.38(1.07)	0.19(0.96)	0.05(0.77)	−0.18(1.15)
Non-police specialist (*n* = 12)	0.12(0.90)	0.48(0.90)	−0.40(1.01)	−0.23(1.11)	0.35(0.67)
General police (*n* = 85)	0.07(0.90)	0.19(0.81)	0.07(0.88)	−0.08(1.01)	0.00(0.93)
Police recruits (*n* = 50)	0.17(1.03)	0.22(0.97)	0.15(1.04)	−0.26(1.00)	0.24(1.05)
Stereotype controls (*n* = 120)	−0.36(0.92)	−0.73(0.95)	0.15(0.98)	0.02(1.01)	−0.28(0.92)

proficiency. Indeed, the prior research of Pinizzotto and Finkel *(34)* was based on a sample of six profilers and compared only three rival groups within similarly small samples.

This positive result, however, does show some incongruity, as individual profilers were not uniformly superior in their performance. Indeed, the profiler group demonstrated the second highest degree of statistical variation among any of the sampled groups. This finding suggests that there is a clear potential for variation in abilities among profilers. Simply because an individual is professionally engaged in profiling does not necessarily mean they are accurate in their predictions or that their accuracy is uniform from one case to another. Indeed, this observation concurs with Wilson and Soothill's *(10)* anecdotal examination of various professional profilers and their pronounced successes and failures in accurately predicting the offender's characteristics in any given criminal investigation.

One issue that may possibly explain this variation among profilers is possible differences in their approach to profiling violent crimes. The practice of criminal profiling seems to be broadly encompassed by a number of differing approaches *(37)*. The sampled profilers contained representatives from a number of approaches and thus could be representative of differences between approaches. Unfortunately, the sample size is inadequate to undertake any quantitatively meaningful analysis to gauge the profiler's performance relative to the approach adopted. Nonetheless, this represents an issue worthy of further investigation.

Finally, an incidental but nonetheless notable observation to arise from this research was the low participation rate of professional profilers. Despite all assurances of complete confidentiality and anonymity, many professional profilers were reluctant to participate in these studies. Indeed, over 60% of the profilers approached declined to participate in the research. This may have been due to a perceived shortage in the provided case materials, or the time involved in completing the questionnaire, or more poignantly, a reluctance by self-titled profilers to have their skills subjected to empirical evaluation. On this final point, Britton *(11, pp. 443,444)* has noted that profilers tend to exhibit an exceptionally strong sense of professional rivalry and thus can be extremely hesitant to admit any limitation or shortcomings in their expertise. Kocsis and Coleman *(38)* observed that the practice of profiling in most countries is not regulated by any legal authority that promotes a code of best conduct to assist in safeguarding against unethical practices by practitioners. In the past, the American Psychological Association has also criticized the lack of reliability and scientific rigor inherent in the practices of some profilers *(29)*. Such behaviors are clearly an impediment to the conduct of scientific study into profiling.

THE QUINTESSENTIAL SKILL OF INVESTIGATIVE EXPERIENCE

Quite possibly, the most prominent claim concerning the requisite skills for profiling involves investigative experience. This skill is presumably only acquired by police personnel and is viewed as a quintessential pre-requisite *(36)*. The importance of this skill is visible in the recruitment, training, and consultancy policies of policing agencies that often prefer to select police personnel with such experience over other potential individuals who lack investigative experience but may possess other useful skills *(30,39)*. Given the stated importance of investigative experience, it would therefore be a logical assumption to expect individuals with such experience to demonstrate superior performance over the other sampled groups lacking in such experience, with the possible exception of the profilers.

Unfortunately, the combined data fail to support the asserted importance of investigative experience as the key skill necessary for proficient profiling. Indeed, police personnel and the non-police specialist investigators demonstrate poor performance across all of the measures in comparison with most of the other groups. More remarkable is that when our examination focused on the three police groups, the virtual reverse of Hazelwood et al.'s *(36)* observation was observed. Senior police officers with the most investigative experience performed the worst, generalist police with a moderate amount of experience demonstrated a modest position in performance, while police recruits with no investigative experience performed the best *(21)*. The exact origin or rationale on which Hazelwood et al.'s *(36)* observation is premised has never been clearly articulated. Nonetheless, the empirically derived depiction of the present data indicates that thorough investigation of the validity of this hypothesis is clearly warranted.

What could possibly explain the poor performance observed in the police groups and furthermore the negative relationship between profiling accuracy and investigative experience? At the outset, it must be recognized that criminal profiling is a discrete task that police personnel are not routinely trained or engaged in *(5,18)*. That is, police personnel are generally not trained to be profilers and thus may not necessarily possess any pertinent skills or experience specific to the task of profiling. However, given the police personnel's exposure to crime and the criminal justice system, it would perhaps be natural to expect that these activities would have some influence on their reasoning when attempting to construct a criminal profile.

One possible explanation may lie with the prevailing educational standards of each of the police groups. That is, each of the sampled police groups may not only represent the degree of experience but also the recruitment and education

criteria of their time. The observed trend may therefore be a reflection of historical changes in criteria for recruitment that may select individuals better suited to the presented profiling task. Another possible explanation may lie in considering the effects of experience on the cognitive processes of police personnel. Social psychology has long studied the authoritarian personality and its manifestations in police culture and behaviors. Although speculative, perhaps experience in the investigation of crime may actually generate various erroneous heuristic assumptions about crime and criminal behavior that are manifested in the observed results *(40)*.

Perhaps a more pertinent question to emerge from the overall results of the police groups is not why senior detectives performed so poorly, but rather, why the police recruits performed so well in comparison? Although the above-mentioned issues of generation difference and/or heuristics may assist in answering this conundrum, another explanation resides not in the differences of the recruits, but rather, in their similarities to other groups. This point will be explored further in the examination of the science sophomores.

SCIENCE SOPHOMORES AND THE CAPACITY FOR LOGICAL AND OBJECTIVE REASONING

Quite possibly, the most surprising finding to emerge from the combined data in Table 1 comes from the performance of the sampled psychologists and especially the science sophomores. Following the profilers, the science sophomores and psychologists appear to be the next most proficient groups. This result was also observed in the initial study by Kocsis et al. *(20)* and has generally remained consistent throughout each of the subsequent studies *(21,22)*. Given the long-standing association between the profiler concept and the behavioral sciences, the superior performance of the psychologist was not entirely unanticipated *(41–43)*. The truly remarkable result, however, lies in the high performance of the science sophomores who possessed no particular knowledge or skills in behavioral science, psychology, psychiatry, or criminal investigation. Indeed, across most of the scales, the science sophomores actually surpassed the sampled psychologists, making them, arguably, the most profi-cient group after the profilers. Furthermore, the science sophomores demon-strated the least amount of group variance, indicating that their performance is consistent with some form of element or factor common to their group. There are a number of significant implications to arise from this trend that critically serve to inform our understanding of criminal profiling.

At the outset, the findings give further impetus to considering the actual importance of investigative experience to profiling. What, however, does appear

to be the crucial skill necessary for proficient profiling? The initial findings of Kocsis et al. *(20)* indicated that psychologists had a slight numerical lead on the sampled science sophomores. The data taken over all three previous studies and now combined within this study reverse this trend. To best understand this phenomenon, the author believes that the answers lie in the similarities between these two groups rather than their differences. That is, although psychologist participants possessed a degree of training and understanding of human behavior, they are also orientated with a capacity for logical and objective thinking akin to the science sophomores. Were the insights garnered from psychological training of significant importance, it would be expected that the psychologists demonstrated some degree of superiority over the science sophomores. Indeed, aspects of this hypothesis, to some degree, are demonstrated by the performance of the police recruits. Unlike their predecessors, the specialist detectives, general police, or even the non-police specialists, the current sample of police recruits was selected and trained under a university diploma qualification. Previous generations of police personnel were primarily educated under a paramilitary system, whereas the sampled recruits were primarily educated via a university program designed to foster critical thinking, analysis, and expression. Thus, the common element among the profilers, psychologists, science sophomores, and police recruits may be sourced in the respective participants having engaged in some form of higher education that encourages skills such as critical thinking. Identifying the exact source of this skill, however, will prove a worthy research endeavor for the future.

PSYCHIC DETECTIVES: ARE THEY BETTER THAN BARTENDERS?

Finally, some review must also be made of the performance of the psychics, the intuitive skill they represent, and the proficiencies of the various groups in their predictions beyond what could be merely achieved through guesswork. The final factor is particularly pertinent to the control groups who answered the questionnaires without the benefit of case information, for their performance is an indication of what could be predicted simply by speculation and/or the cognitive social stereotype of the typical murderer or arsonist. Again, an interesting pattern emerges that is congruent with the higher education/critical thought hypothesis. All participants who possess some higher educational background demonstrated a degree of superiority over the stereotype controls. The groups without such an educational background, however, tended to demonstrate poor performance that appears to be relative to that of the stereotype controls. The most pronounced of these groups were the psychics and the specialist detectives.

There are a number of issues that arise from this first factor that further serve to inform our understanding of profiling. One of the earliest criticisms of profiling was its description as "hit and miss and no better than what the average bartender could predict" *(44, p. 213)*. Although colloquial in expression, Campbell had identified a key issue in not only questioning the accuracy of profilers but also questioning whether this degree of accuracy represents anything beyond common knowledge or what the local bartender might be expected to surmise. The present findings go some way toward demonstrating that profilers can produce quantitatively more accurate predictions than what might reasonably be achieved through guesswork or common knowledge that a lay person or bartender may be expected to possess.

Although not directly related to the topic of profiling, the concept of psychics assisting in police investigations in a similar fashion to a profiler is not unusual *(45,46)*. Indeed, some texts describe the use of psychics in a similar context to profiling *(5)*. The combined data suggest little support for the use of psychics in accurately generating the characteristics of an unknown offender. Additionally, given the apparently poor performance of the psychic group in comparison with the control group, the importance of intuitive thinking in the construction of criminal profiles appears limited. Indeed, this aspect of intuition may be observable in the specialist detectives who predominantly came from more senior generations of police officers and who may have relied on the colloquial "*gut instinct*" to inform their views regarding the likely offender.

LIMITATIONS AND DIRECTIONS FOR THE FUTURE

Further empirical investigation into the validity and underlying skills of criminal profiling is undoubtedly still warranted. It is quite alarming to consider that despite the growing popularity of profiling with law enforcement agencies, virtually nothing in the way of empirically based research has been published in academically reviewed mediums beyond the individual studies conducted by Kocsis et al. *(20,21)*, Kocsis *(22)*, and Pinizzotto and Finkel *(34)*. However, replication and development of similar studies may not be the most viable option for further exploring the subject of profiling because of the apparent difficulties in obtaining the co-operation of participants. Indeed, the combined data covered by this chapter were collected from three consecutive studies that spanned a period of approximately 6 years and yet was only able to achieve a culminative total of 11 profilers. Regrettably, it seems that alternative avenues may be needed to explore the efficacy of profiling to overcome such logistical impediments. Perhaps one of the most feasible ways of facilitating such empirical research may be via the utilization of participants who have demonstrated similar proficiency to the sampled profilers. From the present findings,

the most likely groups could be science sophomores or psychologists. Both of these groups have consistently demonstrated strong performance in comparison with the sampled profilers and are likely to be a readily available source of data. Indeed, it is quite possible that the utilization of such proxy samples may help to remedy the tardy scientific development that seems to plague this topic *(35)*.

In making research into profiling more logistically viable, a range of new topics concerning the practice of profiling should be explored. The actual cognitive processes involved in the evaluation and construction of profiles is a topic that has received modest attention. Clearly, having some thorough under-standing of how to optimize the evaluation of case information will improve any individual's capacity to compose an accurate profile. Similarly, an empirically based model of the decision processes involved in composing a description of an unknown offender is another topic worthy of exploration. Some modest endeavors have already been undertaken in these directions *(47–49)*; however, these areas are fertile ground for further empirical exploration.

CONCLUSIONS

Although nowhere near enough, a small amount of empirically based data have emerged to support the validity of a criminal profiler's capacity to accurately describe the characteristics of an unknown offender. Accompanying this new evidence, however, are a number of unexpected findings that challenge some of the existing preconceptions concerning the constituent skills required for effective profiling. Possibly, the most notable is the apparent importance of logical and objective reasoning and the seeming unimportance of investigative experience. The implications of these findings should hopefully serve to guide future recruitment and training methods of personnel selected to work as profilers in support of criminal investigations. With more empirically based evidence, the reputation of profiling may move beyond a stylized art and toward a more replicable science akin to other forms of forensic tools that are presently subjected to judicial scrutiny. It is hoped that these conclusions will offer fertile ground for future researchers to overcome the logistical impediments of research into this area and explore the range of issues worthy of investigation.

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Chapter 19

Investigative Experience and Profile Accuracy

A Replication Study

David Gogan

Summary

This chapter describes the research that sought to test the assumption by Hazelwood et al. *(1)* that investigative experience is an important attribute that those who construct criminal profiles should possess. This research replicated components of the study by Kocsis et al. *(2)* and compared a group of Irish police officers with two control groups of university students in a simulated profiling experiment designed to measure profile accuracy. The results of this experiment showed no significant difference between any of the groups in the number of characteristics correctly predicted. These findings provide some tentative support for the research of Kocsis et al. *(2)* and suggest that investigative experience may not be a necessary factor for the accurate construction of a criminal profile.

INTRODUCTION

Although offender profiling is used by law enforcement agencies in many countries and jurisdictions, there are no rules or guidelines on many issues, such as who should construct a profile and how they are qualified to do so, what materials are necessary to construct a profile, and how profiles should be used by investigators. Similarly, there is no agreed scientific framework underpinning the construction of criminal profiles.

One prominent approach to the construction of criminal profiles is that adopted by the North American Federal Bureau of Investigation (FBI), which maintains that experience in investigating crimes is necessary for an individual to be an effective profiler *(1,3,4)*. This perspective on the profiling of violent crimes advances the idea that criminal profiling is more of an art than a science. Indeed, Hazelwood et al. *(1)* further stated that the "most significant factor" differentiating experienced investigators from other potential profilers such as psychologists, for example, is that investigators "accept nothing at face value and go beyond what appears to be obvious . . . [and] check and verify every piece of information" *(1, p. 210)*. It could be argued that this is not a differentiating factor at all, as psychologists by training would invariably cover all these steps.

Nonetheless, while such notions concerning the importance of investigative experience appear to have been adopted by many profiler training and accreditation programs *(3,4)*, there is relatively little empirical research literature that has sought to directly examine the constituent skills involved in the construction of an accurate criminal profile *(5)*. Possibly, the first important examination of this issue was a sub-component of the research by Pinizzotto and Finkel *(6)*. This sub-component involved a controlled experiment testing profiling capabilities by comparing the accuracy of trained profilers with groups of experienced detectives, psychologists, and college students. All groups were given two closed (i.e., solved) crimes—a homicide case and a sexual offense case—and were required to complete a multiple-choice questionnaire regarding predicted characteristics of the offender. As these cases had been previously solved, the correct responses to the offender characteristics on the questionnaire could be scored, and thus, an objective measure of profile accuracy could be generated. The results of this experiment showed that the expert profilers were more accurate at predicting offender characteristics in the sex offense case, but this difference was not observed in the homicide case.

A decade passed before an attempt was made to replicate Pinizzotto and Finkel's *(6)* study and develop upon their methodology. Kocsis et al. *(7)* also utilized a closed case to also gauge profile accuracy by comparing groups of profilers, police officers, psychologists, students, and psychics. This study also included a "stereotype" group that was asked to predict offender characteristics without receiving any details about the crime. This allowed a test of the notion that profilers were "better than bartenders" *(8)* and provided details beyond commonly held social stereotypes about certain types of offenders. The results of this study showed that profilers were descriptively more accurate than any of the other groups. However, when all the other groups were collapsed, thus giving a comparison between profilers and "non-profilers," the former were statistically more accurate. Using a different type of crime, Kocsis *(9)* found similar results

in that profilers provided the most accurate profile of a serial arsonist, although they found that both senior detectives and fire investigators were outperformed by university students with no investigative experience. Additionally, the detectives did not outperform the "stereotype" control group.

Kocsis et al. *(2)* further examined the relatively poor performance of the police in their previous study *(7)*. In a similar design, the same case study and questionnaire were given to groups of police of varying levels of investigative experience: (from most to least experience) senior detectives, homicide detectives, trainee detectives, and a police recruit group. A group of university chemistry students were used as an objective control, ostensibly because they were likely to "be highly analytical in their thinking skills" *(2, p. 813)*. The "clear trend" *(2, p. 819)* that emerged was that the chemistry students—who had no investigative experience whatsoever—tended to outperform all the police groups on measures of accuracy.

The objective of the study discussed in this chapter was to undertake a pilot replication study of Kocsis et al.'s *(2)* examination into the importance of investigative experience for the proficient construction of a criminal profile. Jackson et al. *(10)* hold that the success of profiling can be defined as the number of "hits" scored by profilers. In this study, a "hit" amounted to an accurate prediction of a characteristic on the questionnaire. To test the importance of investigative experience for the accurate prediction of offender characteristics, we compared a group of Irish police (Gardai) with two control groups. The first control group—the case study control group—was a group of undergraduate students who did not have any investigative or policing experience but received the same case materials as the police. The second group also consisted of undergraduate students, but this group did not receive the case materials and was only asked to predict the characteristics of a typical offender. The inclusion of a stereotype control group was to test the assumption that criminal profiling does no more than identify commonly held social stereotypes about certain types of offender, in this case a sexual murderer. It was hypothesized, based on the assertions of Hazelwood et al. *(1)* concerning the importance of investigative experience, that the police officers should provide far more accurate responses than either of the control groups of undergraduate students.

METHODS

Participants

This study consisted of three distinct groups of participants: the police group, the case study control group, and the stereotype control group. The police group consisted of 12 members (11 males and 1 female) of the Irish

police force, the Garda Siochana (M = 34.5 years). Six had the rank of Garda and six had the rank of Detective. The case study control group consisted of 19 undergraduate students (15 females, 2 males, and 2 of unspecified gender) (M = 22.9 years). The students had an average of 2.52 years of training in psychology (SD = 1.12 years). The stereotype control group consisted of 12 undergraduate students (9 female, 1 male, and 2 of unspecified gender) (M = 21.75 years).

The police participants were recruited through two independent points of contact in the Garda Siochana (the Irish police force). The undergraduate students in the case study and stereotype control groups were sampled by convenience in the University College Cork (UCC) and the University College Dublin (UCD).

Materials

A booklet was presented to participants, which, in the circumstance of the police participants and the case study control group, consisted of a cover sheet outlining the rough parameters of the study. This was followed by a case study of the crime to be profiled and a multiple-choice offender characteristics questionnaire. Owing to logistical and ethical constraints, it was not possible to seek and obtain a closed case from the police to use as the case study. Therefore, the offense used was adapted from a sexual homicide case reported in great detail in Ressler et al. *(4)*, with additional information gleaned from Howitt *(11)* and Porter *(12)*.

To measure the participant's predictions of offender characteristics, we adopted the questionnaire used by Kocsis et al. *(7)*. The original questionnaire consisted of 30 response items. However, for this study two of the original items were not used, as their responses were explicit in the case study.* Thus, the resulting questionnaire used in this study consisted of 28 items. The computer package SPSS for Windows *(13)* was used for all statistical analyses.

In the case of the stereotype group, participants did not receive the case study. Instead, these subjects were provided with only the questionnaire and a cover sheet instructing them to identify what they thought the characteristics of a "typical sexual murderer" were.

Procedure

Twenty booklets were sent to one of the first point of contact in the Garda Siochana, and 15 were sent to the second point of contact for distribution

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* These two items being "After the offense, did the offender alter the victim's body in any way?" and "Did the offender take away from the crime scene any possessions of the victim?"

among the police. Each booklet was distributed in an A4 envelope and included in each case a stamped, return-addressed envelope. The cover sheet instructed the participants to return the booklet using the stamped addressed envelopes.

Administration of the booklets to the case study control group was undertaken with students from UCC in a scheduled class. The researcher gave a brief address explaining the instructions and warned that because of the graphic nature of the case study some participants may find it disturbing and they were not obliged to take part, and even if they did start, they could withdraw at any time. The students were told the location where they could leave the booklets once they had completed them. A colleague of the researcher distributed the booklets to the students from UCD. She was fully briefed on the instructions to give and on the warning to deliver. On completion, the UCD students returned the booklets to the researcher's colleague.

RESULTS

Both Pinizzotto and Finkel *(6)* and Kocsis et al. *(7)* used analysis of variance (ANOVA) to test for differences in accuracy scores between their test groups. However, in a follow-up study, Kocsis et al. used the non-parametric equivalent of the ANOVA, the Kruskal–Wallis test, citing "the non-normality of the scores and fairly small sample sizes" *(14, p. 670)*. Thus, it is necessary here to briefly justify the statistical tests used in this study. First, as the sample sizes are different in each of the three groups, non-parametric tests would have to be used if the population groups' variances differed. However, they do not differ; thus, the assumption of homogeneity of variance is fulfilled ($P > .05$), thereby allowing the use of parametric ANOVA.

Second, although a normal distribution was observed in the police group ($P > .05$), the scores in the case study and stereotype control groups were not normally distributed ($P < .05$ for both groups). However, Glass et al. *(15)* noted in their meta-analysis that non-normality has a minimal effect on the Type I (rejecting a true null hypothesis) error rate in ANOVA. Furthermore, Tabachnick and Fidell *(16)* noted that if there are more than 20 degrees of freedom for error in the ANOVA (and in this study there are 41 as can be seen in Table 2, then the test is robust to violations of normality. Thus, it was decided that ANOVA was a suitable and appropriate test to use. The alpha level (α) was set at .05.

For the police group, 35 test booklets were distributed. Thirteen booklets were returned, but in one case a page of responses had not been filled. This case was not used, resulting in 12 participants in the police group, with a usable response rate of 34.28%. The booklets for the case study and the

stereotype control groups (which did not contain the case study) were mixed together and distributed randomly among the participants. Sixty booklets were distributed overall, 30 of which were "stereotype" booklets. Nineteen booklets were returned from the case study control group giving a response rate of 63.3%, and 12 stereotype booklets were returned, a response rate of 40%.

The measure of total accuracy used was simply if the response given by the participant correctly matched the actual characteristics of the offender. From the sources used *(4,11,12)*, it was possible to obtain the correct responses for 11 of the items on the offender characteristics questionnaire. Thus, a total of 11 items were scored for this study. The mean, minimum, and maximum total accuracy scores are presented in Table 1.

On examination of the means in Table 1, it can be seen that the police were marginally more accurate than the other groups. The police group also had the highest minimum and maximum scores. One police participant correctly identified all 11 characteristics. This outlier was not included in the results reported herein, but even including this outlier did not lead to statistical significance. To determine whether there was a difference between groups, we used a one-way ANOVA to compare the groups' mean total accuracy scores. The assumption for homogeneity of variance was fulfilled ($P > .05$) (Table 2).

Table 1
Mean Profile Accuracy

	Total correct		
	N	M	SD
Police	11	6.55	1.03
Case study control	19	6.36	1.21
Stereotype control	12	6.08	1.16

Table 2
Analysis of Variance (ANOVA) Table for Total Accuracy between Groups

	Sum of squares	*df*	M	*F*	*P*
Between groups	1.27	2	0.634	.475	.625
Within groups	52.07	39	1.335		
Total	53.33	41			

As can be seen from Table 2 and as was expected following inspection of the means in Table 1, there were no significant statistical differences between the groups on accuracy scores ($F = .475$; $df = 2, 39$; $P > .05$). Thus, the police group did not significantly outperform the group of undergraduate university students who had access to the same case material, nor did they outperform the stereotype control group who had no case material on which to base their predictions.

DISCUSSION

This study attempted to test the assumption that investigative experience is a vital attribute needed for constructing an accurate criminal profile *(1)*. This objective was accomplished by providing a group of police and groups of undergraduate students with detailed information about a real-life sexual homicide crime scene and by comparing each group on the total amount of offender characteristics they accurately predicted. A stereotype control group did not receive any case information and instead was asked only to describe a typical sexual murderer. As far as this author is aware, this is the first study of its kind in Ireland. It is also unique in that it obtained a sample, albeit small, of Irish police with regard to criminal profiling.

That the police did not significantly outperform the two control groups—one of which did not have access to case materials—does not support the assertions of the FBI that investigative experience is a crucial attribute for a criminal profiler to possess *(1,3,4)*. Instead, these findings appear to follow and support the patterns observed in previous empirical studies, indicating that investigative experience does not seem to be closely aligned to the accurate predictions of offender characteristics *(2,7,9)*. The fact that the police did not outperform the stereotype group—who did not receive a case information and was asked to rely on stereotypical notions in describing a typical sexual murderer—must also be taken into account. This suggests that the police, akin to the control group, relied on a common social stereotype of the type of offender when completing the questionnaire. This points to a possible cognitive process that the police participants may have employed: the availability heuristic, whereby individuals make judgments of probability based on the ease with which they can recall similar instances *(17)*. The implication for criminal profiling is that the profiler may remember details about previous offenders that for whatever reason had a significant impact on them. According to the logic behind the availability heuristic, the participants may have overestimated the occurrence of the characteristics of their prototypical sexual murderer and predicted those characteristics for the specific offender on the case study. It is an important implication

for criminal profiling that even for police with investigative experience, an individual's stereotyped views may take precedence over specific crime scene details when predicting offender characteristics.

As with any research, this study had its limitations that must be clearly acknowledged. First, the relatively small sample sizes impeded the chances of statistically significant differences being found. Furthermore, some caution should be observed in considering the representative size of the samples. Secondly, the material used for the case study was less than ideal. The optimum material would have been a real "closed" crime that had taken place, and the relevant leading investigators would have identified the correct responses to all 28 items on the questionnaire to give a complete measure of accuracy. Unfortunately, ethical and logistical constraints did not permit for such measures for this pilot study. Indeed, the main limitation of the case study used was not the material itself *per se*, but the fact that all 28 correct responses for the questionnaire about the offender could not be gleaned from the available sources, thus reducing the total number of items that could be used to measure accuracy and the chances of finding differences between the groups. Furthermore, although the case material was detailed—so much so that an ethical warning was necessary to the participants as to its graphic and potentially disturbing nature— there were "missing" details such as crime scene and autopsy photos, and crime scene schematic diagrams [although Kocsis et al. *(14)* do seem to question the necessity of such visual items].

Also, the type of crime used must be taken into account when interpreting the results. While noting that certain types of crime are particularly amenable to offender profiling *(18)*, certain aspects of the crime can have an effect on the profile. This was demonstrated by Pinizzotto and Finkel *(6)* who observed different outcomes between groups for the homicide case and the sex offence case. Kocsis *(9)* further noted that individuating aspects of each case are important. For example, in rape cases where the victim survives, further information such as the verbal and physical behavior of the offender may be available. In short, the merits of different groups' accuracy cannot be judged by a single case alone, and ideally, in a study such as this, a number of different cases would be presented to participants.

In conclusion, the results of this study provide some tentative evidence to support the previous findings of Kocsis et al. *(2)* and suggest that, in contrast to the assertions of Hazelwood et al. *(1)*, investigative experience does not appear to play an integral role in the accurate prediction of an unknown offender's characteristics. Therefore, this study contributes to the process of elimination into what does not contribute to accurate profiling. However, to paraphrase the title of Pinizzotto and Finkel's *(6)* study, perhaps it is time to focus on

the process as much as on the outcome. Previous research that has included expert profilers has shown that they provide "richer" and more accurate profiles. This ties in with many of the findings in cognitive psychology with regard to expert/novice differences *(19)*, and it would be very useful to analyze issues such as what these "expert" profilers pay attention to and what they ignore and tease out exactly how profiling experience improves profiling accuracy—if indeed this continues to be the case. Although we may be able to tentatively rule out investigative experience as being absolutely necessary, we need to begin to identify what does contribute to efficient, accurate profiling.

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Chapter 20

Schools of Thought Related to Criminal Profiling

Richard N. Kocsis

Summary

This chapter offers a brief overview of the differing schools of thought related to criminal profiling. As discussed in this chapter, there currently appears to be three distinct approaches that operate under the respective titles of Criminal Investigative Analysis, Investigative Psychology, and Crime Action Profiling. The central ideological tenets and methodological characteristics underpinning and differentiating each are briefly outlined.

INTRODUCTION

In one context, criminal profiling can be thought of as analogous to the topic of personality theory. Within the disciplines of psychiatry and psychology, there is common agreement with the existence of a construct known as "the mind." Despite this basic consensus, there exist numerous rivaling ideological schools of thought or approaches concerned with explaining how the mind functions. Examples include psychoanalytic, behaviorist, and biological theories. These theories and their incumbent ideological differences cumulatively serve to form what is now recognized as the topic of "personality theory."

Although there is some disagreement surrounding the precise parameters of the tangible activities encompassed by criminal profiling, the work and

research surrounding it can be understood in a not too dissimilar fashion. That is, there is common agreement with the idea that it is possible to evaluate crime behaviors to derive some impression of the probable offender. Although there appears to be agreement in this fundamental concept, there are rivaling schools of thought (i.e., approaches) to describe how this may be accomplished.

Before proceeding to discuss these approaches, it is important to first clarify for the purpose of this chapter the criteria concerning what constitutes a discrete defined approach to profiling. In this respect, an approach can be conceptualized as a collection of scholarly work that is composed of original empirical studies that possess some distinctive yet cohesive basis for the profiling of a variety of crimes (1). In articulating these criteria, it is important to clarify that a defined approach to profiling involves a body of work comprising some original substantive* base that is applicable to several forms of crime and is representative of more than one (or a few) forms of information.†
At the time of publication, there appears to be three distinct schools of thought concerning the profiling‡ of crimes that satisfy these criteria and that operate under the respective titles of Criminal Investigative Analysis (CIA), Investigative Psychology (IP) and Crime Action Profiling (CAP). This chapter will

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* One corpus of thought that, within the criteria proposed by this chapter, is not considered to be an approach to profiling is that known as behavior evidence analysis (BEA) (2). The rationale for this being that BEA does not appear to be informed by a distinct and substantive body of original empirical research. Rather, it appears to be largely a fusion of existing scholarly literature (sourced primarily from the forensic sciences, criminology, and forensic psychology/psychiatry disciplines) with philosophical paradigms concerning reasoning processes for how a profile may be composed. A critique concerning the validity of BEA can be found in Kocsis and Palermo (3) and Palermo and Kocsis (4).

† It should be noted that within the topic of criminal profiling, an area of specialization has evolved specifically related to the assessment of crime locations as a determinant of information relating to the offender. This specialization is commonly referred to as geographic profiling (5). It should be recognized that whilst geographic profiling does possess its own discrete corpus of scholarly research, this specialization in itself does not represent a cogent approach to the profiling of violent crimes. Instead, geographic profiling is better conceptualized as one component of information inherent to a criminal profile alongside other forms of information such as age, gender, and religion. Any rationale that postures that geographic profiling is a discrete approach unto itself implies that a veritable multitude of profiling specializations exist as defined by their disciplinary origins. For example, the reasoning behind the prediction of an offender's race could feasibly represent the basis for anthropological profiling. Alternatively, the evaluation of an offender's religion could be the basis for ecclesiastical profiling. As such conceptions are not accepted, geographic profiling, whilst a topic of robust scientific inquiry, should not be viewed as an approach to profiling in and of itself.

‡ In making this statement, it must be clarified that there exist many distinguished scholars in the field of violent crime who have made substantial contributions; however, the scope of their work does not, as yet in the author's view, constitute an approach to profiling.

discuss the methodological tenets and theoretical characteristics that underpin and differentiate each of these approaches.¶

CLINICAL PERSPECTIVES INTO CRIMINAL PROFILING

Before discussing the defined approaches to criminal profiling, it is worthwhile commenting on the clinically orientated practice of profiling crimes that has, at times, been referred to as diagnostic evaluation (DE) *(4)*. DEs are representative of some of the oldest forms of profiling, as they involve experts being consulted to employ their professional training and clinical expertise in the evaluation of a crime by providing a criminal profile. Historical examples of such DEs include Dr. Thomas Bond in the Whitechapel murders (aka Jack the Ripper) *(6)* or Dr. James Brussel with the Mad Bomber of New York and Boston Strangler investigations *(7)*. However, more contemporaneous examples include Russian psychiatrist Dr. Alex Buchonosky *(8)*, Professor George Palermo *(9)*, or Psychologist Paul Britton *(10)*.

Strictly speaking, DEs do not represent a defined approach to profiling but are better thought of as a "circumstance" in which criminal profiles are, at times, constructed. That is, experts (typically psychiatrists or psychologists) use their professional training such as their understanding of human psychopathologies combined with their clinical expertise to evaluate or diagnose crime behaviors and profile the likely offender. Consequently, although some scholarly research can be associated with this circumstance of evaluating crimes *(11–14)*, the individual efforts of these professionals, though conceptually similar, do not constitute a cohesive approach to profiling. As a whole, DEs are more representative of the independent efforts of various mental health practitioners in attempting to profile crimes.

Notwithstanding this point, it is nonetheless important to contextually appreciate the existence of DEs particularly with reference to the subsequent evolution of profiling. First, the circumstance surrounding DEs is evidence of the historical origins of criminal profiling and thus serves to dispel the notion that the concept of criminal profiling is a recent innovation or that it was the invention of any particular individual or law enforcement organization. Second, DEs arguably remain the most readily accessible method

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¶ This chapter does not intend to offer a substantive critique of the relative merits of the approaches but instead is focused on highlighting the central features and nuances that characterize and distinguish each of them. Readers who would like more information in the form of a critique of the relative merits of these approaches can consult Palermo and Kocsis *(4)*.

by which a criminal profile may be obtained, that is, by consulting an available mental health professional.

CRIMINAL INVESTIGATIVE ANALYSIS

Whilst not the inventors, the body of profiling research developed by the American Federal Bureau of Investigation Behavioral Sciences Unit and referred to as Criminal Investigative Analysis (CIA) nonetheless represents the first coherent ideological school of thought and, arguably, approach to criminal profiling. Through the development of CIA, the members of the FBI Behavioral Science Unit (both past and present) can be credited with another notable distinction. Through the advocacy of their approach to profiling, these FBI officers have unquestionably popularized and promoted interest in the concept of profiling within international law enforcement and scientific communities. This development should not in any capacity be underestimated, as without their endeavors it is debatable to what extent or speed the development of criminal profiling would have progressed beyond the context of DEs *(4)*.

At its most basic ideological level, CIA conceptualizes profiling as a form of forensic investigative technique used within a policing context. The impetus for the development of CIA appears to stem from perceived dissatisfaction with the clinical/treatment-oriented perspectives incumbent to profiles generated by DEs *(15,16)*. Instead, a more pragmatic approach that was focused on the provision of information that was directly attenuated to the operational needs of police investigators seemed preferable *(16)*. Accompanying this paradigm shift was an abandonment of nomenclature that was perceived to be overtly psychological/psychiatric in connotation. Thus, as the information conceived as being within profiles would not be overtly concerned with issues of diagnosis or treatment terminology such as "crime scene analysis," "staging," and "signature" emerged and were favored over terms such as "psychological" or "personality" profiling *(15,17)*.

CIA was originally developed to augment the investigation of crimes that were not readily resolvable through more conventional investigative avenues *(18–21)*. These were typically crimes of an aberrant violent nature (serial murders, serial rapes, etc.), where common criminological causality factors were not evident. Over the course of time, the scope of CIA's application appears to have expanded in some contexts, but the bulk of extant literature surrounding it nonetheless remains oriented toward being a technique aimed at assisting in the investigation of intractable crimes most often of an atypical violent nature.

The methodological basis underpinning the CIA approach to profiling appears to be largely founded on the empirically based generation of

crime/offender typologies. Possibly, the earliest and most renowned amongst these is the organized/disorganized dichotomy developed from a study of sexual murderers *(22,23)*. This typology, arguably, represents the cornerstone piece of research to much of the literature surrounding CIA. The premise of the dichotomy is the differentiation of crime behavior by its inherent level of sophistication. Accordingly, the "organized" typology is said to be reflective of methodical, planned behaviors that are believed to concord with offender characteristics reflective of an individual with a comparatively organized lifestyle. The opposite to this is the "disorganized" typology that is reflective of behaviors that are spontaneous, unplanned in nature, and that are said to be similarly demonstrative of the offender's personal characteristics such as being slovenly in appearance. Subsequent to the development of this dichotomy, Hazelwood and Burgess *(24)* built on the classifications espoused by Groth et al. *(25,26)* to develop a typology related to rapists whilst other researchers under the CIA banner expanded into the area of arson *(27)*. The culmination of these endeavors in developing various crime/offender typologies as well as some conceptual discourse concerning the *bona fides* of evident crime scene behaviors *(28)* appears to be the publication of the *Crime Classification Manual (29)*: a veritable almanac of crime/offender templates.

With the development of these templates, the CIA method to profiling is achieved by comparing similarities between aspects of the crime under investigation with the relevant typology. Although some step-models have been articulated that in broad procedural terms describe how profiles are constructed *(30,31)* using the CIA approach, a precise explanation of how crime behaviors are systematically interpreted from a particular offense with reference to the developed typologies does not currently appear available. Consequently, although descriptions of the process of collecting and evaluating case material are available, clear explanation as to how the multitude of potential variables contained within any of the typologies are interpreted in a systematic fashion is yet to be explained. In this respect, the construction of criminal profiles via the CIA approach appears to be a largely idiosyncratic process dependent on the interpretations made by the individual practitioner in matching behaviors evident in a crime with their potential relevance to behaviors and offender characteristics from the developed typology *(4)*.

INVESTIGATIVE PSYCHOLOGY

The second ideological school of thought informing the profiling of crimes is that of Investigative Psychology (IP). The founder of this approach is British Psychologist Professor David Canter *(32)*. As the term implies, IP involves

many significant ideological nuances. Foremost among these is its conceptu-alization of profiling as part of an emerging scholarly discipline *(33)*. That is, IP appears to be conceived as a discrete discipline of scientific endeavor concerned with the application of the discipline of psychology to the study of crimes and their investigation. Unlike CIA, which views profiling more in terms of a practiced technique, IP appears to adopt a much broader view in embracing a broad disciplinary-based understanding of criminal behavior. As a consequence, the evaluation of crime behaviors and the associated prediction of offender characteristics from those behaviors (aka criminal profiling) represent only one type of activity within the scholarly boundary of knowledge collec-tively argued to fall under the banner of IP. As a consequence, the ideology of IP appears to adopt a much broader conceptualization surrounding the scope of its application and thus extends beyond aberrant violent crimes and into more conventional forms of crime *(34–39)*. This is another notable characteristic of IP distinct from other approaches that are mostly orientated toward more atypical intractable violent crimes.

The methodology underpinning the IP approach to profiling is predom-inantly‖ characterized by a stylized procedure for the ideographic analysis of crime behaviors and offender characteristics using the statistical tool of multidimensional scaling (MDS).§ In what appears to be the first publication characteristic of the IP approach, Canter and Heritage *(40)* posit that other endeavors are flawed and argue that the effective profiling of crimes requires the differentiation of crime behaviors as distinct from the inference of motiva-tions. The entanglement of these constructs is argued to be present in much of the previous literature such as that of CIA *(40)*. Thus, over the years, researchers operating under the IP banner have produced a variety of studies focused on espousing thematic patterns in offense behaviors of various forms of crime *(35,40,41)*.

What is perhaps most important to appreciate in differentiating the ideological characteristics of IP is not only the exact methodological procedure concerning how the MDS statistic is used but the manner in which the results

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‖ This discussion pertains to the overall work associated with the IP movement in the context of profiling biographical features of an offender.

§ For those readers unfamiliar with statistical procedures, MDS is a form of statistical analysis whereby relationships between variables can be assessed and depicted through a diagram (commonly referred to as a map), utilizing dot-point icons. Thus, the closer any two variables are depicted to each other in geometric space on an MDS map, the stronger the relationship between the variables, and conversely, the further apart the variables may appear, the weaker the relationship between the variables. Further explanation of MDS analytic procedures can be found in the work of Kocsis *(1)* or Coxon *(42)*.

of the analyses are put to use. In the context of IP, the MDS statistic is typically used to undertake two separate sets of analyses (i.e., one of crime behaviors and the other, offender characteristics). The results of these analyses form the basis for developing an understanding or theorems concerning patterns or aspects inherent to such crime behaviors as well as discernable groups of descriptive characteristics for the offenders of those crimes. An example of the IP methodology and its characteristic use of MDS is an analysis of domestic homicides to generate a theorem that argues that the perpetration of such crimes can be differentiated on the basis of either serving an "instrumental" or "expressive" purpose *(35)*. Alongside such conceptions will typically be another set of analyses concerned with patterns in offender characteristics that may relate to either of these behavioral themes. Consequently, constructing a criminal profile (in the traditional context**) when tackled from the IP perspective involves an examination of the crime in question with reference to a previously developed theorem concerning the relevant form of crime behavior to in turn espouse characteristics about any given offender.

CRIME ACTION PROFILING

The third school of thought concerning criminal profiling is the work of the author referred to as Crime Action Profiling (CAP) *(1)*. At its most fundamental level, CAP takes the view that profiling is, akin to CIA, a technique that an individual performs but within the disciplinary boundaries of forensic psychology/psychiatry.†† This conception is important to appreciate as it differs from that of CIA, which also adopts the view that profiling is a technique but within a policing disciplinary context, and is also different from that of IP, which suggests that profiling is representative of a distinct psychological subdiscipline. As a consequence of this perspective, the approach of CAP assumes knowledge of the existing literature relating to human behavior and psychopathologies *(1)*. Also integral to the CAP approach is its pragmatic orientation. That is, CAP focuses on specific forms of crime that, within the operational environment of police investigations, may often tangibly use and/or benefit from the use of a criminal profile. This perspective is somewhat analogous to CIA, but quite different from IP, as

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** As opposed to some of the other activities, IP practitioners appear to have expanded into *(43)*.

†† It must be clarified that this conceptualization of criminal profiling as a technique within the disciplinary boundaries of forensic psychiatry/psychology relates to the body of scientific knowledge associated with these disciplines. This is not to mean that the practice of constructing criminal profiles should be restricted to individuals professionally qualified from these disciplines but that the body of scientific knowledge that comprises profiling is better viewed as originating from the topic domains of forensic psychology and psychiatry *(1)*.

it sees the endeavors of CAP adopting a comparatively narrow[‡‡] focus on crime modalities that are of an aberrant and often intractable nature, that is, atypical crimes that seem to challenge typical investigative responses *(44)*.

How CAP conceives of profiling as a technique within the existing disciplinary boundaries of forensic psychology/psychiatry is also important in appreciating the two separate tiers of research produced under the CAP banner. In addition to the study of mental disease, the disciplines of psychology and psychiatry invest significant effort in developing skills of its practitioners in performing tasks within these professions such as interviewing, diagnosis, and treatment *(45–48)*. In a similar context, work and research under the banner of CAP has diversified into not only developing models for the profiling of crimes but also into studying the efficacy and logistical factors surrounding the processes related to the construction of criminal profiles. This represents a significant deviation as other approaches to profiling have, thus far, been predominantly oriented toward developing techniques for profiling.

Finally, the conception of profiling as a technique within the disciplinary boundaries of psychiatry/psychology is also the basis for the title CAP. That is, the term is used to help differentiate it from other tasks that psychiatrists and psychologists may perform, such as the development of personality profiles via the use of psychometric tests *(49,50)*. In this context, the title CAP is intended to reflect the inherent processes involved in the consideration of crime actions and the prediction of characteristics of the likely perpetrator (i.e., profiling) of those crime actions.

The methodological basis underlying the CAP approach[¶¶] to profiling at a cursory level may appear similar to IP in that it analyses crime behaviors utilizing a form of MDS statistic. Beyond the use of this statistical tool, however, the methodologies and approaches differ markedly. As previously mentioned, the characteristic style of the IP approach is to often conduct many separate MDS analyses on data pertaining to crime behaviors and offender characteristics and from these analyses espouse theorems. CAP does not operate to adopt such conceptions. Instead, its analyses are orientated toward using MDS in combination with other statistical and mathematical tools to develop conceptual models that can

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[‡‡] Feasibly, CAP models could hypothetically be developed for any form of crime. However, whether such models would have any pragmatic, as opposed to purely academic, value is debatable. Owing to the utilitarian orientation of CAP research and the logistical encumbrance in developing CAP models, research and development efforts are focused on atypical crimes that are, arguably, most likely to benefit from the use of criminal profiles.

[¶¶] Pertaining to procedures for the analysis of crime actions as opposed to the practice of constructing profiles—the other research strand.

operate as a guiding mechanism for the generation of predictions that serve to form the basis of information contained in a criminal profile.[§§] In this context, large studies were conducted by the author and his colleagues involving various forms of crimes, which, as previously mentioned, are argued to be suited to profiling. These studies generated an MDS map/diagram of commonly interrelated crime behaviors. On top of these initial analyses of crime behaviors are statistical correlations of numerous offender characteristics that are directly related to those crime behaviors. These statistical relationships between crime scene behaviors and offender characteristics are depicted on the MDS map through the use of large arrows that are drawn over the MDS diagram. The orientations of these arrows are determined by geometric algorithms. The combination of these analyses combined with the superimposed arrows on the MDS diagram represents a CAP "model." Consequently, each of the studies conducted in respect of crimes of serial/sexual murder, serial rape, and serial arson has produced their own distinct CAP model that can be used for the purpose of profiling future offenses exhibiting each of these crime modalities. The operational process of constructing a criminal profile through the CAP approach is through the use of one of these models. An individual assesses the behaviors evident in the crime in question and then refers to the relevant CAP model to match crime behaviors with those delineated in the model and thus identifies offender characteristics associated with those behaviors from the direction of the various arrows. The process of using one of the CAP models, in a metaphorical context, is not too dissimilar in concept to how readings are taken from a compass. The compendium of work and research encompassed by the CAP approach can be found in Kocsis *(1)*.

CONCLUSIONS

Although criminal profiling as a scientific endeavor has experienced a somewhat tardy start, scientific progress in the area appears to be gaining momentum. This chapter has attempted to sketch out a general history surrounding the development to date of different approaches to criminal profiling. Analogous to developments in the field of personality theory, something of an evolutionary path can be discerned between the different approaches as each seeks to build and improve on its ideological and conceptual foundations. Analogous also to the various rivaling personality theories, each approach to profiling discussed possesses its inherent strengths and weaknesses.

[§§] Thus, the key difference is that IP uses MDS as a method of statistical analysis to elucidate some conception about crime behavior. In contrast, CAP utilizes the MDS statistic as an integral part of its models for profiling.

With further refinements and innovations occurring over time, it is hoped that greater possibilities for the profiling of crimes will emerge in the future.

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