

3. Forensics in the field : the example of profiling Criminal Profiling

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Abstract

Criminal or offender profiling in one form or another has existed for many centuries. In more recent history, profiles have been constructed for such notorious criminals as Jack the Ripper, the Boston Strangler, the Unabomber, the Beltway Sniper, the Railway Rapist, the Mad Bomber, and the Green River Killer, all with varying degrees of validity. Although many scholars prefer a tripartite approach to the classification of offender profiling (criminal investigative approach, clinical practitioner approach, and the scientific statistical approach), we divide offender profiling into five major schools. The Diagnostic Evaluation School relies on insight into human nature derived by psychologists and criminologists as a result of their interactions with criminal and noncriminal populations. The Criminal Investigative Analysis School as introduced by the U.S. Federal Bureau of Investigation relies heavily on an application of prior patterns of behavior of known subjects to current cases, and often distinguishes between organized-disorganized criminal types. The Investigative Psychology School applies sophisticated statistical analysis to criminal behavior based on certain criminal narrative themes as evidenced by behavior during the crime. (Crime Action Profiling is a major variant of this school). The Behavioral Evidence Analysis School relies on a thorough crime scene reconstruction to create a criminal's profile. Evidence of a criminal's skill set and his knowledge of the victim and crime scene can often be deduced. Finally, the Geographic Profiling School investigates the locations of a series of linked crimes in order to draw inferences about the offender's home address or the location of his primary activity node. Profiling has evolved from an earlier concentration on serial sexual murder to include considerations of additional sexual offenses, arson, acquisitive crimes, organized crime and, most recently, terrorism and cybercrime. Furthermore, the concept of offender profiling is continually being expanded to include an array of contributions to the process of police criminal investigations. Behavioral investigative advice is increasingly offered in order to narrow the range of criminal suspects, to improve investigative interviewing, to link crime scenes to the same suspect based on signature analysis and to perform equivocal death analysis.

Résumé

Le profilage de criminels ou de délinquants a existé sous une forme ou une autre depuis de nombreux siècles. Dans l'histoire plus récente, des profils ont été élaborés avec des degrés variables de pertinence pour des criminels notoires comme Jack l'Eventreur, l'Etrangleur de Boston, l'Unabomber, le Sniper de Beltway, le Voleur des Rails, l'Exploseur Fou, et le Tueur de la Rivière Verte. Bien que de nombreux universitaires préfèrent l'approche tripartite en matière de classification du profilage criminel (l'approche « investigation criminelle »; l'approche « pratique clinique » et l'approche « statistiques scientifiques »), nous répartissons quant à nous le profilage criminel en cinq écoles principales. L'École de l'Évaluation Diagnostique s'appuie sur la perception de la nature humaine par des psychologues ou des criminologues, sur la base de leurs connaissances cliniques de la population délinquante et non délinquante. L'École de l'Analyse Investigatrice Criminelle, telle que créée par le Bureau d'Investigation Criminelle des États-Unis, s'appuie fortement sur ce qu'elle sait des typologies de comportement de sujets déjà connus pour traiter d'affaires en cours et distingue souvent les catégories « criminels organisés » et « criminels désorganisés ». L'École de l'Investigation Psychologique applique des analyses statistiques sophistiquées au comportement délinquant, fondées sur les thématiques des modes opératoires mises en lumière par l'observation des comportements durant le passage à l'acte criminel (l'une des variantes principales de cette école est le Profilage du Passage à l'Acte Criminel). L'École de l'Analyse des Données Comportementales s'appuie sur une reconstitution minutieuse de la scène de crime afin de créer le profil du criminel. Enfin, l'École du Profilage Géographique enquête sur les lieux de commission de séries de crimes reliés de manière à en tirer des déductions relatives à l'adresse du délinquant ou la localisation du cœur de son activité principale. Le profilage a évolué. Initialement focalisé sur les meurtres sexuels, il inclut désormais d'autres types d'infractions à caractère sexuel, la pyromanie, les crimes contre les biens, le crime organisé et, plus récemment, le terrorisme et le cybercrime. De plus, le concept même de profilage criminel a été étendu pour inclure désormais toute une variété d'étapes de l'enquête de police. Le conseil comportemental appliqué à l'enquête est proposé de manière croissante dans le but de réduire le nombre de suspects, d'améliorer la technique d'interrogatoire, de lier une pluralité de scènes de crime à un suspect unique sur la base de l'analyse de sa signature criminelle et de mettre en œuvre une enquête multidisciplinaire sur les causes de la mort.

1. Introduction

Few concepts in criminology have generated as much attention, controversy, and confusion over the past three decades as has the notion of criminal profiling. Ever since the phenomenal worldwide success of the movie "Silence of the Lambs" and various television series of that genre, college students, behavioural scientists, criminal investigators, judges, and the general public have been interested in the process by which the personal, behavioural, and even physical characteristics of a serial killer can be inferred from his actions during the commission of a perverse and sadistic murder (Dowden et al., 2007). As the concept of serial crime has expanded (Petherick, 2009; Schlesinger, 2000), criminologists, psychologists, and crime scene investigators have considered the application of profiling techniques to additional types of crime, such as rape, child molestation, arson, cybercrime, terrorism, and an assortment of property crimes. The term 'profiling' has also provoked negative reaction. Some observers have questioned the efficacy of profiling, while others have argued that its practice equates to racial and ethnic discrimination. Much of this controversy stems from multiple and conflicting applications of the practice, as well as the failure to establish clear definitions of the concepts involved.

2. Defining Profiling

The word 'profile' derives from the Latin word *filum*, for thread or shape. *Profilare*, then, meant to bring forth a thread or outline. A common English use of profile is a side view of a face or an outline of an object. To profile an individual has come to mean to summarize a person (e.g., Kennedy, 1956). A criminal profile, then, is simply a summary description of the salient traits and characteristics of an offender. Thus, criminal typologies may be interpreted as profiles of prototypical categories into which criminals may be placed based on the crimes they have committed or the motives that generally drive them (Dabney, 2004; Gibbons, 1987; Miethe and McCorkle, 2001). Studies of modus operandi may also evolve into working profiles (Holmes and Holmes, 2009). Such usages are primarily descriptive rather than inferential in nature. That is to say, they summarize known facts or statistics-based trends.

What we are concerned about in this chapter is specifically *crime scene profiling*. That is, the construction of a profile of a given offender, based on knowledge of what that offender has done in carrying out a particular crime or series of crimes. Crime scene profiling goes by many names: criminal profiling, offender profiling, criminal personality profiling, investigative profiling, and criminal behaviour profiling, to name a few. Some names have become identified with specific schools or approaches to profiling: criminal investigative analysis, investigative psychology, behavioural evidence analysis, and criminal action profiling. All of these terms have in common that they refer to a process in which the behaviour of an unknown offender at a crime scene is described;

from this behaviour certain claims, which have investigative relevance, are made about the nature of the offender.

It is important to distinguish criminal profiling based on crime scene evidence from two other related processes that are also referred to as profiling. One of these, sometimes termed prospective psychological profiling, involves predicting the future behaviour of a known individual. Such profiling involves dangerousness prediction, anticipating what someone might do under stress, and determining whether someone is the sort of person who would have committed child abuse or spousal murder. In theory, such a process should be easier than crime scene profiling, because one can get direct, unambiguous evidence of the person's behaviour, personality characteristics, values and attitudes, moral reasoning, etc. In practice, this may account for overreaching in the claims that clinicians make about what someone is likely to do. A second type of profiling to be distinguished from crime scene profiling is statistical profiling of a known category of offenders, such as identifying the modal characteristics of those who have been found to be drug dealers, shoplifters, or terrorists. Presumably such a profile may help identify others more likely to engage in such behaviour in the future, but it may also lead to an over-reliance on a person's visible characteristics; thus, racial or ethnic profiling becomes an issue here (Del Carmen, 2008; Schauer, 2003; Withrow, 2006). Also, once a profile is relied on for any length of time, offenders are likely to adapt; those who do not fit the profile may gravitate to the crime in question or even be actively recruited, as drug couriers, for example.

There are a number of formal definitions of criminal profiling available in the academic literature. For example, Douglas et al. (1986, p. 405) define profiling as "a technique for identifying the major personality and behavioural characteristics of an individual based upon an analysis of the crimes he or she has committed." A basic assumption is that an individual's patterns of thinking direct his or her behaviour, and such behaviour therefore shows some consistency, not only from crime scene to crime scene, but from crime scene to the criminal's everyday life. Canter and Youngs (2009) explain profiling as the drawing of inferences about offenses and offenders through consideration of $A \rightarrow C$ equations. The A variables include the where, when, and how of a crime, while the C variables cover all aspects of an offender that may be of help in the investigative process. Because there is no simple relationship between predictor (A) and criterion (C) variables, profiling is a method of clarifying whatever correlations do, in fact, exist. According to Turvey (2008), criminal profiling is the deduction of distinctive offender traits from physical or behavioural crime scene evidence. Although these definitions are fairly similar, they suggest different methodologies for creating profiles. Before discussing these different methodologies, however, it will be instructive to take a brief look at the history of criminal profiling.

3. *The History of Profiling*

Given the evolutionary benefits to individuals and groups of identifying the unknown murderers or rapists among them, it is likely that criminal profiling in one form or another has been practiced throughout the ages. A fifteenth century treatise entitled "Maleus Maleficarum" described the characteristics of witches who posed a threat to the community. Late in the seventeenth century, Puritans in America relied on profile evidence to prosecute and execute the witches in their midst (Moriarty, 2001). In a more scientific fashion, the nineteenth century English police physician Dr. Thomas Bond produced a profile of the prostitute killer who became known as Jack the Ripper (Rumbelow, 1987). At about that same time, Sir Arthur Conan Doyle introduced the reading public to the profiling skills of Sherlock Holmes.

A World War II profile of Adolph Hitler by psychoanalyst Walter Langer (1972) is sometimes credited with being the first true use of profiling (Canter and Youngs, 2009). Langer was commissioned by General William Donovan of the OSS to predict, among other things, how Hitler would act should things go against him and defeat become inevitable. In the summer of 1943, still almost a year from D-Day, Langer spelled out the likelihood of eight different scenarios and concluded that suicide was the most likely. Langer's task was unlike that of the crime scene profiler in that the subject was known; he and his team were able to compile over 1,000 pages of source material, much of it the result of interviews Langer conducted with people who had known Hitler. Except that he had no access to the subject, the task was similar to psychological profiling that we referred to above. Still, the profile was constructed from bits and pieces of evidence, and the imagined personality was projected into a novel situation, much as a crime scene analyst speculates as to how a suspect might behave if questioned in a certain way. One major factor distinguishing Langer's analysis was his reliance on Freudian theory to determine what constituted evidence. He posited an unresolved Oedipal conflict that led to a masochistic personality with a rather unusual neurosis: Hitler, Langer concluded, "derives sexual gratification from the act of having a woman urinate or defecate on him" (1972, p. 113). While this may sound like a bad propaganda movie, Langer was quite serious and even included an anecdote of another psychiatrist reaching the same diagnosis.

4. *Diagnostic Evaluation*

Langer's use of a specific underlying theory to link crime scene (or other) behaviour to personality and thereby to subsequent behaviour illustrates what we term the Diagnostic Evaluation School of Profiling. The first recognized application of this school specifically to crime scene profiling is generally credited to psychiatrist James Brussel. A "mad bomber" had been plaguing New York City over the course of 17 years. In 1956, Dr. Brussel was asked by the New York Police Department to examine the investigative file. Among other features, Dr. Brussel correctly predicted that when the culprit was eventually

arrested he would be found to be an unmarried loner and would be wearing a buttoned, double-breasted suit (Keppel and Welch, 2006; Hicks and Sales, 2006). As Canter and Youngs (2009) point out, however, Brussel's description had nothing to do with the arrest of the bomber, one George Metesky, and his attire was predictable from baseline behaviour for men of that era. Eight years later, Brussel's similar prediction that the Boston Strangler would be an unmarried loner proved to be wrong, assuming the culprit was indeed Albert DeSalvo. Nevertheless, Brussel's work had set the stage for the arrival on the investigative scene of the widely publicized FBI profiling teams.

5. *Criminal Investigative Analysis*

Inspired in part by the seeming success of Brussel, and also motivated by the need to respond to a growing awareness (and perhaps actual number) of serial sexual killers, a team of FBI agents in the early 1970s decided to develop a more or less formal procedure for profiling serial killers. Howard Teten, Patrick Mullany, Dick Ault, John Douglas, Robert Ressler, Roy Hazelwood, and Greg McCrary were the most well known of the agents to first develop and publicize profiling. Operating out of what was then termed the Behavioural Science Unit, these agents popularized crime scene profiling and became models for profilers in movies and books (Douglas and Olshaker, 1995).

Early on there seemed to be agreement among FBI profilers that only crimes indicating some significant level of personality disturbance were suitable for profiling (Homant and Kennedy, 1998). In general, this should be manifested by a series of crimes, by significant aggression, and usually by sexual disturbance. Originally the profiler role was that of the expert, someone called in after an investigation was well under way. As such he was not likely to visit the crime scenes, other than to get a general sense of the geography of things. He might operate out of an office in Quantico, totally dependent on the case materials sent him by the municipal or state detectives on site. Currently, certain large police departments have someone on staff who has been trained in profiling through the FBI's International Criminal Investigative Analysis Fellowship program. Exactly how the profiler proceeds depends on the referral questions, the type (and number) of crimes being investigated, the feasibility of accessing the crime scene and personally interviewing victims or witnesses, and the types of evidence available (physical, number of witness statements, medical reports, etc.). Just as no two crimes are exactly alike, it is doubtful that any two profiling experiences are identical, both because of variations in the crime and in the experience of the profiler. With that as a caveat, we can attempt to describe a typical profiling process.

While each profiler approaches the task somewhat differently, Douglas et al. (1986) have detailed a six-stage model for constructing a CIA profile. This particular example assumes a homicide case on which the profiler is consulted and does not actually visit the crime scene. The first stage, profiling inputs, is simply assembling and familiarizing oneself with all the profiling inputs, such as crime scene photos, autopsies and other medical reports, crime lab reports, basic

police report, and victimology. The second stage is the application of seven decision process models. This refers to determining the type of homicide, the apparent motive, the level of risk that was present to victim and offender, and whether there was an escalation of violence during the offense. These decision processes apparently aid the profiler in selecting from his or her experience those cases that most compare to the current one. Having become thoroughly familiar with the case details and type of case, the profiler then enters the third stage, called crime assessment. Crime assessment is essentially a mental reconstruction of the crime, including all of the behaviours of the victim and perpetrator that led up to the crime. The degree of disorganization, motivation, basis for victim selection, and possible staging are all assessed at this time. Once the profiler is comfortable that she or he can visualize the crime virtually frame by frame, the profiler is ready for the fourth "criminal profile" stage, which involves generating a tentative profile. Depending on the amount of information available, this profile might contain information on the offender's demographics, physical characteristics, habits and lifestyle, pre and post offense behaviour, and beliefs and values.

At the completion of the fourth stage comes the first of two feedback loops. Basically, this involves the profiler comparing the tentative profile with all of the inputs from which it was derived. The profile is to be amended if any of the evidence does not fit the profile, in the sense of contradicting it or being otherwise inconsistent. The working profile is then turned over to local law enforcement for the fifth, or investigation stage, which attempts to follow up on and apply the insights of the profile. The investigation will generally lead to new information: new physical evidence may be uncovered, a linked crime may occur, or a suspect or witness may provide new information. The new information then provides a second feedback loop, by which the working profile is either confirmed or modified. When the process finally leads to an arrest and case closure—the sixth stage—the information on the (presumed) perpetrator is then used as a validity check against the profile that was produced (Douglas et al., 1986).

FBI profilers have stressed that profilers need to be experienced crime investigators rather than academic psychologists. The emphasis is on reconstructing the criminal's behaviour as evidenced by the crime scene, putting oneself in the place of the criminal, aided presumably by one's previous experience investigating and interviewing such offenders, and imagining what sort of person one would be. Basically, the emphasis on using forensic evidence to reconstruct the crime scene, the reliance on victimology, and the eschewing of formal psychodynamic theory separate CIA from more traditional Diagnostic Evaluation or clinical approaches.

Profilers have developed several concepts and practices that are central to their activities. Thus, "organized versus disorganized" refers both to types of crime scenes and to types of offenders; presumably disorganized crime scenes (little control of victim, weapon found and left at scene) are produced by disorganized offenders, and knowing this enables one to hypothesize about various characteristics of such a person (e.g., low intelligence, not very

successful, psychosis, or severe psychopathology). Most crime scenes are mixed, however, and do not fall so readily into the organized/disorganized dichotomy.

Other critical terms all relate to aspects of the crime scene: posing, staging, and signature. Signature is clearly the critical concept for the CIA profiler. Signature is best understood by contrasting it with the *modus operandi*. Signature is defined as all those behaviours at the crime scene that are not necessary for the accomplishment of the crime, where the MO refers to the actions needed to commit the crime. One basic tenet of CIA profilers is that the MO may change from crime to crime, based on situational variables, but the signature, although it may evolve and mature, remains essentially the same. The MO reflects the offender's experience, the signature reflects the offender's personality. Thus, signature, rather than MO, is the more critical feature for linking crimes as the work of the same person. Posing and staging, while not always present, are frequently found in violent homicides. Both posing and staging refer to alterations of the crime scene, such as positioning a body or vandalizing a room. If the offender does this in order to direct police suspicions away from himself, then such a staging may become part of the MO. If, however, the purpose is to express the offender's emotions, then posing is part of the signature. The ability — based on lengthy investigative experience — to distinguish staging from posing is thought to be critical for establishing the true signature of the offender and thereby linking crime scenes and developing an accurate profile.

6. Popularity and Frequency

The FBI approach to profiling, or CIA, is apparently quite popular with many police departments in the United States, with frequent demand for consultation from FBI profilers. Request for assistance grew from a few dozen cases per year in the beginning to 600 cases per year in the mid 1980s to over 1,000 cases per year in the mid-1990s (Snook et al., 2007; Witkin, 1996). Besides cases taken on referral by profilers in Quantico, numerous police detectives at the state and local level have been trained in CIA; and, presumably, many cases are subjected to at least informal profiling at this level, although cases might not be formally distinguished as having been profiled.

It has frequently been noted that the popularity of CIA with law enforcement and the public seems to be independent of any solid evidence that profiling works. Snook, et al. (2008) have attributed CSI's continuing popularity to a number of factors. They point out that certain dramatic anecdotes, such as the Mad Bomber case referred to above, are often repeated to illustrate the power of profiling. Also, the anecdotes that are circulated in various accounts of profiling tend to emphasize the number rather than the percentage or correct predictions, and they overlook the extent to which any correct predictions may merely reflect baseline experiences. Profilers themselves often claim a certain unique knowledge or skill that goes beyond

that of the common investigator's; and, indeed, when a profile (of a subsequently known offender) is read by police officers, they see the profile as having been more accurate simply if the author is reputed to be an expert profiler (Kocsis and Hayes, 2004). Finally, profilers seem able to make sense out of otherwise bizarre behaviour; and if a profile is followed by an identification of the offender, there are usually enough correct predictions to make it seem that the profile was accurate, if not truly insightful. Incorrect profiles, on the other hand, are often overlooked and forgotten.

While CSI profiling may have captured the public's imagination and law enforcement's confidence almost from the start, this was not true among psychologists. The key theoretical assumption underlying CSI (and indeed most forms of profiling) is referred to as homology: the idea that a certain pattern of crime scene behaviour can be linked to a cluster of background variables, thus providing a portrait of the offender (Alison et al., 2002). While some clinical psychologists operating in a psychodynamic mode were sympathetic to the idea of constructing an offender's personality from fragments of his crime scene behaviour, the majority of psychologists circa 1980 were firmly in the situationist camp. Studies of conformity (Milgram, 1974), deviance in a simulated prison (Haney et al., 1973), and bystander intervention (Darley and Latane, 1968) had convinced many psychologists, most notably Mischel (1968), that human behaviour was largely a response to situational demands and cues rather than a reflection of one's basic personality. Behaviour was seen as somewhat inconsistent from one situation to the next; and even if a person did repeatedly do a particular task in the same way, this was not indicative of some trait that could be generalized to other similar tasks. Indeed, inferring someone's personality from his or her behaviour became known as the fundamental attribution error (DeLamater and Myers, 2007; Kelley, 1973). Thus, for a profiler to assert that because an offender cleaned up a bloody crime scene he would be driving an older model blue car (only a slight exaggeration) seemed to be utter nonsense.

Though not unaware of these criticisms, profilers tended to be dismissive of them. For example, one noted FBI profiler claimed that while the average person might show a great deal of situational inconsistency, the extremely pathological types that he profiled were so driven by their inner demons that they showed a consistency or pattern throughout their behaviour and lifestyle. Furthermore, profilers seemed proud of the fact that they did not follow any orthodox theory of psychopathology. Their extensive investigative experience, in some cases supplemented by extensive interviews with incarcerated serial killers, had taught them how to think like such "monsters" (Homant and Kennedy, 1998; Ressler and Shachtman, 1992).

7. Evaluations of Profiling

Skeptics of the underlying theory of profiling were eager to do research showing its fallacies; in response, proponents of profiling occasionally did research on some aspects of the basic theory of homology. Three types of

evaluations of profiling can be distinguished: user satisfaction studies, validity studies, and theoretical studies. User satisfaction studies attempt to determine the extent to which the use of profiles in real life cases actually increases the likelihood of solving such cases. In theory, the best way to answer such a question would be to take a large number of cases thought to be suitable for profiling and randomly pick a subsample to be profiled. Ideally, the non-profiled control cases would get equal attention from an experienced investigator, or they could receive rival forms of profiling (see below). As it stands, then, we are left getting the consumer's opinion as to whether profiling works. Such user satisfaction surveys, of course, are likely to be biased if for no other reason than the user wants to justify to himself the time and effort used in getting and trying to apply the profile (Snook et al., 2008). Furthermore, it is easy to interpret such studies in two ways, depending on how one asks the question. In a classic early study of satisfaction with profiling, Pinizzotto (1984) found 192 cases in which profiling had been used. Of these, 88 had been solved, and the user—the local police—reported that the profile had been at least somewhat helpful 83% of the time. Admittedly, this helpfulness was sometimes due to new ideas generated about the case rather than correct identification of suspect characteristics. If we assume that the unsolved cases were not the fault of poor profiles, this represents a fairly high help rate (though there is nothing with which to compare it). On the other hand, in only 15 of the 192 cases (8%) was it claimed that the profile helped in the actual identification of a suspect. Since even some of these 15 successes may have been the result of confirmation bias (Turvey and Petherick, 2009), this outcome provides little confidence that profiling works. A somewhat more recent study evaluated the usefulness of criminal profiling in the UK and found that only 2.7% of 184 cases led to the identification of the offender; the profiles evaluated in this study were of a very mixed group, however, and probably most were constructed using the Diagnostic Evaluation or clinical approach (Copson, 1995).

Recent studies have measured the perception of profiling held by various professionals. Trager and Brewster (2001) surveyed police departments regarding their experiences with profiling. Of 95 departments surveyed, 46 responded; and only 29 had had experience with profiles. In general, these users saw profiling as helping to guide their investigations but not helping with suspect identification. Torres et al. (2006) obtained replies from a non-representative sample of 161 forensic mental health professionals, mostly psychologists and psychiatrists. On the one hand, 91% of this sample agreed that profiling was a useful tool for law enforcement, but only 27% agreed that profiling was scientifically reliable (p. 55). Interestingly, 40% of the sample said profiling was reliable when it was called Criminal Investigative Analysis, as opposed to simply profiling (17%), even though both terms were defined in exactly the same way.

A validity study asks whether profilers produce more accurate descriptions of offenders than do suitable comparison groups. Generally the researcher selects some suitable real-life case in which the offender is known and presents

profilers and others with the crime scene facts of the case — the information that a profiler might be expected to have. The researcher then asks the profilers to identify various characteristics of the offender and compares their rate of success with detectives, psychologists, college students, and other groups. In the classic study using this approach, Pinizotto and Finkel (1990) found that trained profilers did better than the other groups on one case but did worse on another. In a more recent series of studies, research by Kocsis (2006) found that profilers had significantly more correct answers about the offender, though their advantage over other groups was quite small.

There are two serious problems with such comparison studies. First, the relative success or lack thereof for the profilers might simply be a result of the unique features of the case that the researcher picks. One would have to conduct the research with a representative cross-section of the types of cases likely to be subjected to profiling. Second, none of the studies used anywhere near the amount of material that a profiler is expected to have available, including information from several linked crime scenes. To make such research ecologically valid, the subjects in the research would have to spend several hours, perhaps days, reviewing case materials. Because profilers “know” that what they do works, they are not likely to be willing to spend days reviewing a series of solved cases just to see if they can make more informed guesses than normal detectives or college students.

The third type of study used to evaluate CIA (and other approaches to profiling) is a theoretical study that looks for the predicted relationships on which the theory is based. There are three areas of study that are prominent here: evaluation of the organized/disorganized criminal dichotomy, identification of consistent criminal types, and the search for stable correlations between crime scene variables and offender traits and characteristics.

The starting point for CIA is generally said to be the categorizing of a crime scene as organized, disorganized, or mixed. FBI profilers have claimed that crime scenes can be reliably typed and that the type of crime scene is indicative of features of the personal life of the offender. However, evidence for this claim in the original research was weak. First, it seems that in the original research various known characteristics of the offender influenced the categorization of the crime scenes, making correlations between crime scene and offender characteristics spurious. Also, two trained profilers were found to agree with each other only 62% of the time, bringing into question the usefulness of the typology (Homant and Kennedy, 1998). Subsequently, research by Canter et al. (2004) found that virtually all crime scenes have some organized and some disorganized features. At best, then, the degree of organization versus disorganization or impulsivity should be thought of as a continuous variable and should not be the basis for a discrete typology. It is not clear, however, whether this needs to be a serious setback to CSI, as we can see no necessary reason why discrete types are necessary.

Finally, research on the consistency of traits has provided mixed support for CIA. Work with the “five factor model” of basic personality traits (McCrae and

Costa, 2008) has helped to rehabilitate trait theory in psychology. The concept of predisposing traits has been applied to distinguishing “life-course persistent” from “adolescent-limited” delinquency (Moffitt, 1993). Hare's (1993) approach to measuring psychopaths was found helpful in distinguishing the probability of recidivism among subgroups of violent sex offenders by Quinsey et al. (1998). Also, rapists have been shown to exhibit some consistency of behaviour from crime scene to crime scene, though it is not clear whether this is due to MO or signature (Alison et al, 2002).

While there no doubt is some consistency in an offender's behaviour from crime scene to crime scene, the ability to generalize from crime scene characteristics to offender characteristics, sometimes referred to as “homology,” has only weak support. Some crime scene behaviours, such as excessive violence and not leaving physical evidence, seem indicative of an offender with a past record. Bizarre behaviour at a crime scene may indicate someone with a mental health record. Evidence, however, that such occasional one-to-one relationships can be the basis for a coherent profile of the offender remains elusive. For example, Mokros and Alison (2002) used a sample of 100 British stranger rapists to look for relationships between offense behaviours, as reported by witnesses, and offender socio-demographic characteristics and past criminal behaviour. The absence of any significant relationships suggests that one cannot profile an offender based on crime scene behaviour. While this still leaves open the question of determining the offender's motivation and personality, it is the more objective factors such as age, criminal record, employment status, and ethnicity that are thought to be helpful in guiding an investigation.

8. Criminal Investigative Analysis in Court

Given the variety of available profiling methods, the unique fact pattern of each appellate case, the evolution in the law of expert evidence and differences between civil and criminal courts, space limitations clearly prohibit a complete discussion of the admissibility of criminal profiling evidence. Although learned treatises on the subject are available (Cooley, 2008), this area of law continues to evolve; and conscientious profilers and attorneys should keep abreast of rulings specific to their jurisdictions. Suffice it to say, however, that the courts have dealt with various types of profiling evidence in a highly inconsistent manner. While some courts have deemed profiling and linkage analysis as inadmissible character evidence, other courts have been more willing to permit such evidence when introduced by the prosecution as expert testimony related to crime scene physical evidence (George, 2008). Because profiling testimony still seems to evoke a certain degree of scepticism in many courtrooms, its best use may still be confined to investigative purposes.

9. Investigative Psychology

Despite the seemingly rapid acceptance of the FBI's Criminal Investigative Analysis, dissatisfaction arose almost immediately, especially among psychologists, whose objections were primarily theoretical. Besides the more or less direct attempts to test the underlying theory of CIA, broader attempts were made to provide a firmer empirical foundation for profiling (Jackson and Bekerian, 1997). Perhaps the earliest and most thorough of these efforts took place at the International Research Centre for Investigative Psychology, now located at the University of Huddersfield, England.

Investigative Psychology (IP) is an approach to the entire field of criminal investigation and has multiple facets. Our concern here is only with its contribution to profiling. In terms of research and theory development, it has clearly had a large impact on the academic view of profiling within the United States and worldwide; just how much that has translated into affecting the criminal profiles that are carried out in the field is less clear. Doubtless, the vast majority of American profilers remain FBI trained and influenced. However, given the extent to which Canter and his colleagues' research is cited in American literature, it seems likely that Canter's views are having wide effect. While the FBI method is predominant in the U.S. and also employed worldwide, IP is somewhat favoured in the UK and gaining stature worldwide as well (Daéid, 1997).

Investigative Psychology approaches profiling in a more empirical and probabilistic manner. As a result, it differs from CIA in a number of ways. It is applied to virtually all types of crime, including, for example, common burglary. It does not find the distinction between MO and signature helpful. Based on research, it finds that virtually all crimes have some elements of both organized and disorganized behaviour. Rather than constructing a traditional profile that describes the personality of the offender, IP is more likely to make a series of probabilistic statements about demographic and other characteristics of the offender, based in large part on baseline data for the specific type of offense that has been identified. In general, the more specificity there is in describing an offense, the more one can access specific baseline data about offenders who have previously committed such offenses (Canter and Youngs, 2009).

This might lead one to believe that IP profiling is all about constructing more and more detailed and discriminating typologies, so as to suggest how a particular burglar might be expected to differ from the population of burglars. Canter, however, eschews the term typology. His main objection to the term seems to be that a typology implies a group of reasonably discrete types, while Canter's data suggest that there is a great deal of overlap among the elements found to occur at various crime scenes. Canter's basic approach is to measure as many variables as possible for a large sample of crime scenes of a particular type (e.g., burglary, arson, rape, homicide), and then to employ the statistical technique of "Smallest Space Analysis (SSA)." This technique allows for a representation of all of the crime elements in a two-dimensional space. In all of the SSAs reported by Canter, there is a cluster of elements in the centre of the

space. These are elements that are common to all crimes of this type, or whose occurrence does not correlate with any other elements. As one moves farther from the centre of the space, elements tend to cluster in three or four patterns. These are elements that are less common and are more likely to co-occur (Canter and Youngs, 2009).

These co-occurring elements in the various corners of two dimensional spaces have been found by Canter and Youngs (2009) to form themes or "narrative action systems." A full appreciation of the concept of a narrative action system would require a lengthy digression into symbolic interactionism as well as Talcott Parson's "action system model." The main difference from a typology seems to be that no claim is made that the narratives form discrete types; a particular offender might show elements of more than one narrative, and crime scene elements characteristic of one narrative may occur along with a rival narrative. For example, the narratives with respect to burglary are: integrative irony, conservative tragedy, expressive romance, and adaptive adventurer. Canter finds similar narrative themes with armed robbery, rape, arson, organized crime, and murder, though one or another theme is generally absent. These themes have been found to have implications for such offender characteristics as whether there is likely to be a previous criminal record, the other types of crimes he or she is likely to have committed, and the age of the offender. Because an organized personality description is not attempted and because statements are probabilistic, it would be difficult to subject IP profiling to a critical test. Presumably, law enforcement has found it helpful, but this has also been true of CIA.

Closely related to IP profiling is an approach known as "Crime Action Profiling" (CAP). This approach, associated especially with Richard Kocsis, a forensic psychologist from Australia, has made numerous contributions to the research literature through helping to develop professional standards for profiling and through clarifying the profiling process. Kocsis bases his profiling on a form of multidimensional scaling that is similar to Canter's Smallest Space Analysis. Like Canter, he has evolved data-based categories of offenders that allow for the identification of themes or subtypes within crime types. Kocsis seems to be more willing than Canter, however, to extrapolate from crime scene characteristics to various aspects of the offender, including likely demographics, offense history, type of work, family and living circumstances, transportation mode, habits and interests, and any personal characteristics of note. Kocsis himself identifies the differences between CAP and IP in the willingness of CAP to apply more traditional clinical skills (such as inferring the motivation of the offender or evaluating the reliability of a witness's or victim's testimony) than does IP. His disagreement with CIA seems to be more a matter of the extent to which one should rely on traditional clinical knowledge and training as opposed to basing profiling mainly on one's investigative experience (Kocsis, 2006). To this point it seems that Kocsis' influence has been mainly in his research on profiling effectiveness rather than in advocating a radically different approach to profiling and CAP is generally not considered a unique school or approach to profiling.

10. Behavioural Evidence Analysis

Where Kocsis can be seen as attempting to develop a middle ground between IP and CIA, Turvey (2008) can be seen as clearly distinguishing his approach from IP, CAP, and CIA. Motivated by his belief that existing forms of profiling have gone well beyond the crime scene evidence, Turvey has proposed a back-to-basics method called Behavioural Evidence Analysis (BEA) that he refers to as "deductive." BEA requires the profiler to state a clearly established major premise, to link this premise to an established crime scene fact, and to show how a deductive process allows the profiler to produce an observation about the offender. To some extent Turvey has reduced profiling to old-fashioned detective work, especially since there are few if any major premises in the social sciences that are so firmly established as to allow non-probabilistic inferences to be drawn from them. With the victimology component of his profiling, however, it is clear that Turvey uses probabilistic indicators (and those based more on experience than hard data) to raise red flags about the credibility of a victim's version of events (Turvey and Petherick, 2009). Turvey has made a significant contribution to analyzing the reasoning process underlying profiling and has brought some needed caution to profilers' attempts to be overly inclusive in their descriptions of a perpetrator. Turvey believes the four things which can be established deductively are evidence of criminal skill, criminal knowledge of the victim, criminal knowledge of the crime scene, and criminal MO and signature. To some, BEA represents solid crime scene investigation as much as it does a form of criminal profiling.

11. Geographic profiling

A final approach to profiling that has had a significant impact is Geographic Profiling (GP). GP is often considered one aspect of profiling; and CIA, IP, and CAP all pay substantial attention to GP. However, GP had an independent origin of its own, stemming from the work of Brantingham and Brantingham (1993) on environmental criminology and Felson's (2002) routine activity theory. This led Rossmo (1995) to distinguish various hunting styles of criminals, such as raptors, stalkers, and trappers among rapists. Canter has also contributed significantly to GP. He has distinguished between the commuter and the marauder (Canter and Larkin, 1993; Canter, 2003) and has reported on the percentages of marauders among a number of crime types (Canter and Youngs, 2009). Kocsis (2006) uses the marauder concept to examine the "domocentricity" of crimes. Canter and Youngs (2009) give various formulas for identifying the probable residence or base of operations of an offender based on several linked crime sites; the simplest method is to create a circle using the two most distant crime scenes. The search is made more sophisticated by taking into account the probable cognitive maps that an offender would use in the identified environment and ultimately relies on a sophisticated application

of the “distance decay” function (Canter and Youngs, 2009; see, also Canter, 2003; Godwin, 2005; and Rossmo, 2000).

All approaches to crime mapping make fairly impressive claims of success, such as the actual offender being found to live within the projected area over 80% of the time. Kocsis (2006) does present some cautionary findings, namely, that with serial burglary the location success rate may fall to 50% or even lower. In general, though, the principles of GP make good common sense, one does not have to buy into any particular theoretical approach to use it; and the mathematical models come with differing degrees of sophistication. While some geographic profilers try to get into the cognitive space of the offender, this is hardly necessary to make use of many of the principles. At the very least, then, geographic profiling is likely to continue to be a valued adjunct to the other approaches to profiling, as well as a stand-alone activity. There is some concern, however, that a simple interpretation of map locations may provide estimates of offender locations which are as accurate as several complex models (Paulsen, Bair and Helms, 2010).

12. *Summary and Conclusions*

To summarize, criminal profiling has generated a lot of discussion and some research ever since the mythical success of Dr. Brussel. Several alternative approaches to profiling have been proposed, with varying degrees of success. To date, the practical validity of the various profiling schools has not yet lived up to earlier expectations although significant research continues to accumulate. Some approaches may be described as more objective and some as more subjective in nature. To help make sense out of these alternatives, we propose the following continuum while acknowledging its highly subjective nature. Those schools of profiling to the left are the most theoretically conservative, basing conclusions on well-established facts and using clearly stated reasons in going from facts to statements about the offender. Those to the right are more intuitive, based on clinical judgment, and willing to try to get into the mind of the offender (Muller, 2000; Allison et al., 2010):

Schools of Profiling Profiled

(objective, empirical, statistical) GP BEA IP CAP CIA DE (subjective, intuitive, clinical)

We place the FBI's Criminal Investigative Analysis, the main focus of this review, somewhat to left of DE because of its strong reliance on crime scene reconstruction and forensics. In their willingness to extrapolate from this to particular offenders, some FBI profilers are arguably more to the intuitive, clinical side of things than even DE. What remains to be determined by further research is the extent to which these various schools are having an interactive effect on the practicing profiler, both in the United States and throughout the crime fighting world. Alison et al. (2010) describe the skills involved in the various approaches to profiling as being either clinical, investigative, or statistical, and are optimistic that an interdisciplinary, team approach can

combine the strongest assets of each school as part of behavioural investigative advice. Such a multidisciplinary approach, it is felt, would better equip profilers to take into account how situational variables, such as differences in victims' behaviours, may affect an offender's behaviour; this, in turn, should help clarify the relationships between crime scene variables and offender characteristics. Although there have been well-reasoned and substantial criticisms of all major approaches to profiling (Crabbé, Decoene and Vertommen, 2008; Hicks and Sales, 2006), this fact in no way diminishes the creative contributions to applied criminological knowledge made possible by both scholars and practitioners of modern criminal profiling.

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