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PROBLEMS WITH THE SCIENTIFIC MODEL OF PROFILING

As a scientifically based model, the Canter model should distinguish itself from the nonscientific models of profiling according to the following scientific criteria: development of a theory about criminal profiling; hypotheses generation; operationalization of methods used in profiling; and empirical validation, including a consideration of both disconfirming evidence and the limitations of the supporting research. Although the Canter model improves on the nonscientific models by adhering to many of these criteria, there are still several fundamental limitations to Canter's approach. This chapter describes the criteria that distinguish between scientific and nonscientific profiling models and evaluates the degree to which the Canter model is successful at achieving the criteria for a scientific model. The chapter concludes by critically considering the attempted use of science by the nonscientific models of profiling.

A THEORY ABOUT CRIMINAL PROFILING

The first characteristic of a scientific model of profiling is a guiding theory (i.e., an integrated set of principles offered to explain phenomena), the purpose of which is to generate hypotheses about an unidentified offender. For example, one might begin with a guiding theory that crime

scene evidence reflects offender personality characteristics. One prediction that might result from such a theory is that a sadistic offender personality will be evidenced in the crime scene by multiple superficial wounds on a living victim. This manifestation will occur through behavior in which an offender repeatedly injures a conscious victim for the purpose of enjoying the victim's suffering. The variables that would be of interest to an investigator using this theoretical framework would include wound patterns, weapon information, offender actions and statements, and offender personality. The methods for considering such variables could include interviews with the victim and (if available) the offender, physical evidence analyses and reports from forensic scientists, offender personality assessment measures, and a statistical analysis that would relate information about offender personality to offender behavior to patterns of evidence left at the crime scene. The application of these methods to the variables of interest would yield information that could be used to evaluate the accuracy of the predictions made. One result might be that high scores on a measure of offender sadistic personality are found to be predicted by crime scene evidence of multiple superficial wounds inflicted on a living, conscious victim. Each of the steps in this example are consistent with the general theory that offender personality is manifested in crime scene evidence via offender behavior. The results therefore inform the investigator about the veracity of the original theory, in this case by fitting in with and supporting the theoretical framework.

Consider what would happen if the previously outlined steps did not follow the guiding theory. For example, what if an investigator considered the same crime scene variables and used offender DNA analysis to evaluate the crime scene variables? One could still argue that this process is scientific, and one could demonstrate that the offender was present at the crime scene and committed certain acts on the victim. However, such an analysis would reveal nothing about offender personality, which is the theory being examined.

AN ANALYSIS OF CANTER'S MODEL

Theoretical Framework for Canter's Model

The first step in evaluating Canter's theory is to ascertain its goal. Alison and Canter (1999a) claimed that they were interested in building a theory of "investigative psychology that is far broader than 'criminal profiling'"; they asserted that, in their program, "the focus on profiling is minimal and is seen as a small part of a much broader perspective on understanding, exploring, explaining and aiding police enquiries" (p. 29)

and, furthermore, that “‘profiling’ is seen as a somewhat redundant area of activity that is more of a media promoted anachronism than a developing field” (p. 29). However, these statements are taken from Canter’s book series entitled *Offender Profiling* (e.g., Alison & Canter, 1999b), and he has written numerous other articles and books devoted specifically to the profiling endeavor. His full-length book, *Criminal Shadows* (Canter, 1994), is a collection of his profiling success stories, punctuated by descriptions of the theoretical framework in which he places these profiles. Given the problems with nonscientific profiling models described in chapter 3, Canter may indeed have good reason to attempt to differentiate his scientifically based model from the nonscientific models. However, his assertion that investigative psychology is qualitatively different from profiling is simply contradicted by his own work. Canter’s model is therefore addressed in this book under the rubric of profiling.

Canter’s model (2000) uses a somewhat complex theoretical framework that includes considerations of general criminality and his own concepts of offender consistency and offender specificity and ultimately attempts to identify unknown offenders by applying techniques to the known physical and behavioral evidence. By setting up this framework, Canter established a rationale for profiling that leads to the possibility of inferring an offender’s characteristics on the basis of his or her actions. The actions with which Canter is concerned are both criminal and noncriminal, and his theory holds, in essence, that criminal behavior is an extension of noncriminal behavior. Any interaction between an offender and victim is therefore likely to reflect themes (i.e., his interpersonal narratives) in the way that the offender interacts in noncriminal aspects of his life.

On the one hand, Canter’s theoretical framework appears to be a step in the right direction. The idea that an offender’s criminal behavior could hold some similarities to his or her noncriminal behavior is certainly facially valid. Canter’s overall theory and model are still evolving and have not yet developed to the point where empirical testing has clearly spoken to their validity. On the other hand, a closer examination of the components of Canter’s interpersonal-narratives theory raises several questions and concerns that weaken his overall approach.

Analysis of Interpersonal Narratives

The interpersonal-narratives theory is based on five components. First, individuals who commit crimes show consistency in their behaviors across both criminal and noncriminal domains. Second, criminals are neither exclusive generalists nor exclusive specialists. Although a criminal’s actions may overlap with the actions of other criminals, individual criminals are

sufficiently unique that their crimes should be distinguishable from the crimes of another criminal. Third, the interpersonal-narratives theory holds that violent interactions between offender and victim contain various themes that address two issues: the role the victim plays in the offender's search for intimacy and the degree of power or aggression that the offender displays in attempting to achieve intimacy. Fourth, there are three basic themes, or roles, for offenders and victims: victim as object, victim as vehicle, and victim as person. Fifth, there are two basic levels of desire for control related to these themes or roles: high and low (Canter, 1994).

Criminal Consistency Across Criminal and Noncriminal Domains

The question of whether criminals show consistency in their criminal and noncriminal behaviors has been contended for more than 100 years. In fictional literature, the possibility that criminals might evidence disparate personality characteristics across criminal and noncriminal domains was popularized by Robert Louis Stevenson's (1886/2000) *Dr. Jekyll and Mr. Hyde*. In this work, the docile personality of Dr. Jekyll is described as carrying "every mark of capacity and kindness" (Stevenson, 1886/2000, p. 5). In stark contrast, his alter ego, Mr. Hyde, terrorizes London by trampling a small girl and clubbing an esteemed London citizen to death with a walking stick. When Stevenson was writing about Jekyll and Hyde, Jack the Ripper was active in the gaslit Whitechapel area of London. Whereas in *Dr. Jekyll and Mr. Hyde* the characters were unaware that the kindness of Dr. Jekyll and the violence of Mr. Hyde were actually accounted for by a single individual, the Ripper murders incited widespread fear precisely because the public realized that whoever was committing these violent attacks at night was, by day, walking largely unnoticed among the general population.

However, if the lore of *Dr. Jekyll and Mr. Hyde* and the hysteria surrounding Jack the Ripper were accurate and criminals did not evidence consistency, then any study of criminal behavior would be a fruitless endeavor, as criminal actions would, in essence, be random, unpredictable, and arguably unstoppable. Thus, Canter (1994) made a valid point by noting that criminals must evidence some degree of consistency across criminal and noncriminal domains. This is indeed an essential component to any profiling theory. Unfortunately, Canter's model is not the first to identify the issue of offender consistency and apply it to criminal investigation. In fact, Canter (1994) himself credited the FBI with having distinguished "the probability of continuity or consistency in a criminal's behavior from non-criminal situations to criminal ones" (p. 85) in the context of profiling. As Canter (1994) pointed out, "It is a simple idea, once you spot it" (p. 85).

As such, this element of Canter's model is not a novel addition to the field of profiling.

Criminals as Generalists or Specialists

The second component of Canter's interpersonal-narratives theory addresses one of the most fundamental arguments in the field of criminology. Since the publication of Gottfredson and Hirschi's (1990) seminal discussion of a theory of crime that posits offenders to be mostly generalists, the field of criminology has devoted considerable effort to debating the issue of whether offenders generalize or specialize, with two camps of scholars emerging on opposite sides of the argument.

The essential tenets of Gottfredson and Hirschi's (1990) model are as follows. Individuals who exhibit low self-control are more likely to take advantage of opportunities to engage in criminal behavior when they are presented. Furthermore, those people who are lowest in self-control are more likely to start engaging in norm-violating or criminal behavior earlier in life, to commit more offenses, to engage in a variety of types of crime, and to eventually desist with advancing age (Dean, Brame, & Piquero, 1996; Gottfredson & Hirschi, 1990). What follows from these basic tenets is that because individuals who exhibit low self-control are unlikely to specialize and instead commit a variety of crimes, the causes for one type of crime (e.g., stealing) are the same as the causes for another type (e.g., assault). Furthermore, if one controls for frequency of offenses, correlates of offending do not predict differences between individuals who commit violent offenses and those who do not (Piquero, 2000).

There are at least two arguments against the theory that offenders are generalists. The first argument is that different crimes serve different needs (Cornish & Clarke, 1986), and it is therefore important to focus on crime-specific characteristics. Literature consistent with this position suggests that the importance of situational context varies across different types of offenses (Nagin & Paternoster, 1993; Paternoster, 1989). The second argument asserts that distinct developmental pathways are associated with different types of offending, with pathways to violent offending being different from those that lead to nonviolent offending. Rather than being fixed, these trajectories are attributable to varying causes that can change over the course of an offender's life (Loeber & LeBlanc, 1990).

Canter's essential position is that offenders are sufficiently specialized to allow the profiling of their crimes. It is true that if all offenders were generalists, the only distinction that might be made with a science of profiling would be that between offenders and nonoffenders. The extent to which offenders specialize, however, and the extent to which distinctions

between types of offender specialization can be identified through profiling techniques, remains to be seen. By noting that offenders must specialize to some degree, Canter identified a necessary premise of profiling. Again, however, this is not a novel point in the larger context of criminology.

Violence as a Reflection of the Offender's Search for Intimacy and Power

If one breaks down the interpersonal-narratives theory to its basic assertion, one finds that Canter's core statement about the roles of offenders and victims is that violence reflects an offender's search for intimacy and power (Canter, 1994). Offenders may conceptualize intimacy in different ways, and may require different degrees of power, but, in essence, intimacy and power are the basic components of Canter's model of violence, as evidenced by his use of role themes reflecting these two dimensions.

This element of Canter's theory is perhaps the weakest because of its similarity to the artful profiling approaches described in previous chapters. The identification of power and intimacy as central components of violent offending is a feature that is consistent across all models of profiling discussed in this book. As discussed in previous chapters, the nonscientific models of profiling are replete with examples of typologies, theories, and arguments that discuss offenders' search for dominance over their victims and their general lifelong intimacy deficits. The way in which Canter places the themes of power and intimacy into a framework of victim role themes is discussed next, but it is important to first note that regardless of whether he is able to construct a new typology or set of dimensions to describe power and intimacy, this construction will merely be new packaging for an established, albeit unproven, set of ideas. It is ironic that, as discussed in chapter 4, Canter dismisses the use of psychoanalytic typologies as a theoretical link between offender actions and characteristics, without apparently noting the similarity of his emphasis on intimacy and power to those same typologies.

Victim–Offender Role Themes

Canter (1994) identified three roles that victims play in the minds of offenders: victim as object, victim as vehicle, and victim as person. In terms of theory-building, it is difficult from the outset to treat Canter's role themes as part of a novel scientific approach because, as just discussed, they derive from a fairly commonsensical and nonscientific premise. A further examination of the descriptions Canter provides of his role themes ultimately reveals the same imprecise and unsubstantiated distinctions attempted in weaker, nonscientific profiling models.

Canter uses the term *themes* to signify his departure from nonscientific models' use of types. He argues that there are no discrete dimensions in

criminal behavior and that it is therefore misleading and problematic to construct typologies that contain distinct types or categories. Other than this preemptive acknowledgment that his role themes will contain just as much overlap as nonscientific offender typologies, Canter does not provide anything new or incrementally useful in his victim role themes. Canter's victim role themes are not substantially different from the categories of any other typology, and his caveat about overlapping dimensions effectively concedes this point. The result is that Canter's themes are flawed in the same manner as the nonscientific typologies discussed in chapters 2 and 3. The reader is referred to chapter 3 for a discussion of the particular criticisms of nonscientific typologies. In addition to the flaws that are inherent in using a typological framework, Canter's role themes are themselves problematic for two overarching reasons: lack of conceptual clarity and inclusion of untestable assertions.

Lack of Conceptual Clarity

Although conceptual clarity is an issue that has been discussed in the context of nonscientific models and their use of typologies, examining the conceptual clarity of Canter's themes is a worthy endeavor, for two reasons. First, as a scientific model of profiling, the Canter model should have its basic conceptual foundation clear and prepared for empirical study. To the extent that concepts within the model are imprecise, it will be difficult to later obtain valid results through empirical testing. Second, given that Canter's role themes are an integral part of his interpersonal-narratives theory, it is important to evaluate the themes as an indicator of the strength of his overall theory. If there are weaknesses in his themes, then the interpersonal-narratives theory also necessarily suffers.

Two aspects of conceptual clarity that have been previously addressed with regard to the nonscientific models are category overlap and a lack of clarity in specifying offender characteristics, which makes category placement difficult. Canter preemptively addresses these issues by arguing that boundaries between categories or dimensions in a typology are always bound to be fuzzy. It is therefore not surprising to find conceptual overlap between Canter's role themes. For example, for the victim-as-person role, Canter used the example of domestic killings. He described these as situations in which a tense relationship between two people escalates into a violent episode. In many instances, Canter (1994) asserted, it is an "accident of circumstance" (p. 358) that determines who becomes the victim and who becomes the offender. Although this example fits the victim-as-person role in the sense that the conflict is between two individuals, as opposed to between the offender and society in general, it would seem difficult to argue that there is a clearly defined role between victim and offender in a situation

where an individual becomes a victim by “accident.” Why could the victim not be viewed by the offender as an object or a vehicle in such a situation? Within the same role theme, Canter (1994) also described victim-as-person offenders as being driven in part by wrongs they believe to have been inflicted on them by women. Although the target of the resulting violent attack may be a specific woman, this description also appears to be consistent with a situation in which a victim is a representative of other women in the offender’s life. Such a description would then fit with the victim-as-vehicle or the victim-as-object roles. Canter did not address how to determine which role theme fits best. Merely acknowledging that the lines between roles are not clear is not sufficient for a scientific approach to profiling. Developing a clear theory of profiling requires either that this problem be remedied or that one consider alternative approaches to examining offender characteristics and their relationship to interpersonal narratives. Canter’s model does not accomplish this.

In addition to flaws in the conceptual clarity between Canter’s role themes, there are conceptual problems within each theme. For example, when discussing the victim-as-object theme, Canter (1994) at one point stated that offenders may be of low intellectual ability but later claimed they may be more intelligent and manipulative. If such offenders can either be of low or high intelligence, it would not seem that intelligence is a characteristic that is useful to include for the purposes of defining a role theme and distinguishing it from other themes. In the same role theme, victim-as-object offenders are described as lacking contact with “most of normal human reality” (Canter, 1994, p. 345). They are unable to “distinguish thoughts from secret voices or fantasy from reality” (Canter, 1994, p. 345). However, Canter then distinguished these individuals from those who are psychotic, and he expressed reluctance in comparing them with individuals with schizophrenia or other psychoses. This is problematic because, according to the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994), the characteristics described by Canter are some of the hallmarks of a psychotic episode: “The term ‘psychotic’ refers to . . . a gross impairment in reality testing . . . delusions . . . hallucinations . . . disorganized or catatonic behavior” (American Psychiatric Association, 1994, p. 273). It seems that Canter is attempting to distinguish his offender themes from conventional descriptors of mentally disordered behavior, but as a result the constructs to which he is referring are unclear.

In discussing the victim-as-vehicle theme, Canter (1994) stated that some of these offenders are similar to psychopaths and claimed that they “know what the story of human relationships ought to be but this always appears to be a part they play, not a role with which they are at one” (p. 352). Later, however, he stated that key episodes, such as the loss of a relationship or death of a loved one, will fuel these offenders’ “inner despair”

(p. 353) and trigger a violent episode. It would seem that in order for the loss of a relationship to have such an impact on an individual, that individual would need to have made some level of investment in the relationship that does not appear to be consistent with Canter's initial description of these offenders. How would an individual who only plays a part in relationships have a loved one in the first place, much less experience inner despair on the loved one's death?

In discussing the victim-as-person theme, Canter (1994) described some offenders as committing physical assaults in the course of a robbery or fraud, deciding that the victim can "easily provide them with some gain" (p. 359). In another example, Canter (1994) described the offender as stalking a victim in an effort to forge some personal relationship with her through an eventual sexual assault. These two examples seem to describe disparate types of relationships between offender and victim. In the first example, it is unclear how such a situation exemplifies the victim's significance to the offender as a person rather than a vehicle. The second example appears to be more consistent with the victim-as-person theme. Inconsistencies such as these limit the cohesiveness of Canter's role themes and detract from the clarity of his overall interpersonal-narratives theory.

Finally, the rationale for dividing each theme into high and low levels of desire for control is unclear. First, Canter addresses high and low levels of desire for control specifically only for the victim-as-object and victim-as-vehicle themes. He does not address level of desire for control in the victim-as-person theme. Because Canter also does not address the absence of the desire for control dimension in the victim-as-person theme, it is unclear whether the dimension is not applicable or whether he simply left it out for other reasons. Second, the use of the terms *high* and *low* is misleading. It is not the case that offenders who exhibit the high dimension are somehow more controlling than those in the low dimension. Instead, it appears that Canter uses the high-desire-for-control dimension to refer to physical control or aggression and the low-desire-for-control dimension to describe controlling a victim through manipulation or coercion. As a result, even examples of low desire for control contain descriptors that appear to the reader to be reflective of highly controlling behavior: "The victim has to be harnessed to the offender's will . . . they must be exploited" (Canter, 1994, p. 353). Third, Canter does not conceptually establish whether offenders have preferences for either physical or mental control over their victims or whether it is simply the case that offenders who are not socially and intellectually sophisticated enough to manipulate their victims must resort to using physical aggression to gain control over them. If the mechanism is offender preference, then it would seem that certain role themes might lend themselves to one type of desire for control or another. For example, there might be a relationship between perceiving a victim as an object and

preferring the use of physical force as a method of control. In contrast, perceiving a victim as a person might incline someone to use social skills, manipulation, or coercion. If the mechanism is instead related to intellectual or social sophistication, then the role themes might actually be a redundant construct. Intelligent offenders could simply be expected to assess and interact with their victims as persons and manipulate them into vulnerable situations, whereas less intelligent offenders might simply grab a victim of opportunity and use physical force to subdue her.

Inclusion of Unverifiable Assertions

The second conceptual issue in Canter's role themes is that he includes assertions that are arguably unverifiable. For example, in regard to the victim-as-object theme, he stated that "Sexuality and . . . bizarre sexual acts dominate the personal narratives" of these offenders (Canter, 1994, p. 344). Even if personal narratives could be demonstrated to exist, how would one know what proportion of them is devoted to sexuality and bizarre sexual acts? Similarly, in discussing the victim-as-vehicle theme, Canter (1994) asserted that offenders use assaults to live out the sense of power and freedom that is absent in "the other stories they are forced to live" (p. 351). Statements such as these are not refutable, in the sense that investigators do not have access to the full array of inner thoughts of offenders. Even if offenders could be questioned after apprehension as to why they committed violent acts, it is not clear that scientists could even begin to ascertain the information necessary to prove or disprove such assertions. For example, could an offender speak insightfully about his own personal narrative? If an offender were in fact forced to live a story, would he be aware of it, and could he describe that story to social scientists?

Summary of Analysis of Canter's Theory

Canter incorporated several established principles and novel themes into his interpersonal-narratives theory that give the reader the initial impression of complexity and originality in the Canter model. On closer examination, however, two main flaws emerge. First, the portions of Canter's theory that are complex are not original. His discussion of concepts such as offender consistency, criminal generalization versus specialization, and the role of power and intimacy in violence already has a history in the psychology and criminology literature. Second, the portions of Canter's theory that are original lack complexity. As discussed, an evaluation of Canter's role themes and dimensions for level of desire for control lack rigor in their comprehensiveness and conceptual clarity. Even before considering Canter's testing of these theoretical elements, it is clear that building a

science of profiling using such concepts will be difficult. Distinctions among themes are unclear, as Canter (1994) readily acknowledges, and even within themes there are insufficient distinctions made for the role themes to be of real utility.

HYPOTHESES GENERATION

A scientific model of profiling breaks its theoretical framework down into testable parts. As described previously, theories generate predictions that are tested with scientific methods. The testing of such hypotheses either lends support to the theory or provides disconfirming evidence. Whereas theories are generated somewhat freely and creatively, hypotheses are constrained in two ways. First, the kinds of hypotheses generated in a scientific model of profiling should be concrete and testable. For example, the prediction that offenders who commit murders are inherently evil is unlikely to be a testable hypothesis. Although this certainly depends on one's definition of *evil*, taken as it is, this prediction is neither sufficiently concrete to allow an investigator to precisely determine what is being predicted nor capable of being subjected to empirical testing, because it is too vague to allow the selection of methods and statistical tests. Second, a hypothesis must follow logically from the investigator's theoretical framework. Recall the profiling example discussed in the first section of this chapter. In this example, the guiding theory was that an offender's personality will manifest itself in the evidence left at a crime scene by means of his behaviors during the commission of the crime. According to such a theoretical framework, one would expect hypotheses to address such relationships as those among criminal behavior, evidence, and offender characteristics. One would not expect an investigator to generate hypotheses about offenders' unconscious conflicts or significant archetypes from this theoretical framework.

Hypotheses in the Canter Model

Within the Canter model, the generation of hypotheses is constrained by the lack of clarity in Canter's discussion of his theory of interpersonal narratives. Although Canter's hypotheses follow from his theoretical framework in a very basic sense, their utility is limited from the outset because they will necessarily reflect the ambiguity inherent in the theory they are designed to address. For example, consistent with his interpersonal-narratives theory, Canter advanced hypotheses to address offender consistency and offense specificity. In general, hypotheses related to offender consistency and offense specificity ask whether offenders act along consistent themes and whether these themes can be distinguished from those of other offenders.

To examine this empirically, Salfati and Canter (1999) proposed two specific hypotheses that address offender consistency and offense specificity. In their study of stranger murders, they proposed that (a) offenders will evidence themes in their homicide actions similar to those in their previous actions (offender consistency), and (b) there will be evidence of stylistic distinctions centered on thematic distinctions (offense specificity). Even without examining the results of this study, one can see the difficulty in obtaining clear and useful information. Both hypotheses incorporate Canter's interpersonal-narratives themes as part of the empirical question. On the basis of the previous discussion of these themes, it is therefore apparent from the outset that any information obtained from the posing of such hypotheses will only be as clear as the role themes themselves. The lack of conceptual clarity in the original theory therefore adversely affects the generation of hypotheses.

Likewise, Canter's hypothesized hierarchy of criminal behaviors addresses whether salient behaviors can be identified and later organized according to his offender themes. Once again, the inclusion of the offender themes introduces an element of ambiguity into the proposed analysis. For example, in their study of child sexual abuse, Canter, Hughes, and Kirby (1998) hypothesized that offense actions common across the set of child molestation cases will have a high frequency, whereas salient behaviors that distinguish among different types of child molestation offenses will have a lower frequency. Hypotheses related to examining offense actions and their frequency across child molestation cases are not necessarily problematic. However, the use of Canter's themes as a framework for organizing these more explicit hypotheses hinders the results by putting them into a context that lacks sufficient conceptual clarity.

Canter follows the methods of science in hypothesis generation to the extent that hypotheses should derive directly from one's theoretical framework. It is clear that Canter's research is a direct effort to test the concepts in his interpersonal-narratives theory. Unfortunately, because there is in fact a strong link between theory-building and hypothesis generation, Canter's hypotheses suffer from the flaws in his theory. In particular, the incorporation of the interpersonal-narratives role themes into hypothesis generation can only weaken subsequent empirical analyses because of the ambiguity and lack of conceptual cohesion in the themes themselves.

OPERATIONALIZATION AND SELECTION OF METHODS AND STATISTICS

A scientific model of profiling must operationalize its methods; that is, scientific models of profiling must clearly define and explain methods and put them into concrete terms that can be understood and replicated

by other scientists. Furthermore, the selection of methods must follow logically from the theoretical framework and be appropriate for addressing the model's theories and hypotheses. There are three basic areas in which this type of operationalization is essential: use of terms, research methods for profiling, and methods for profiling practice.

Terms

As has been previously discussed, there is a lack of agreement in the profiling field about what the important terms are and how to define them. In *nonscientific profiling models* this has been an obstacle to conceptual clarity. For the purpose of constructing a scientific model, terms must be clearly identified and defined so that they will be understood by the reader and distinguishable from other concepts important to profiling. For example, an investigator may hypothesize that offenders who use a "con" approach to obtain victims are more intellectually sophisticated than offenders who surprise victims and physically overpower them. To operationalize this hypothesis, the investigator must define and explain the two types of offender approaches being considered (the con and the surprise) and distinguish them from each other. The investigator also must operationalize *intellectually sophisticated*. This term could refer to a high level of general intelligence, as measured by an IQ test; it could refer to verbal facility, as measured by IQ or other tests of verbal ability; or it could refer to sophistication gleaned from previous criminal experience, as measured by criminal record and improvement at evading capture over time.

With some exceptions, which are noted in the next paragraph, Canter is fairly clear in his use of terms. Although he often uses novel terminology, such as *behavioral salience* and *interpersonal narratives*, he provides definitions for these terms that are sufficient to allow the reader to understand them. For example, *behavioral salience* is defined as the important behavioral features of a crime that may help identify the perpetrator (Canter, 2000). In terms of research, behavioral salience is further operationalized as the location of an action at different distances from the center of the pattern of actions on a smallest space analysis (SSA) scatter plot.

However, there are two difficulties with Canter's terms. The first problem is that Canter does not draw a sufficient connection between his terms and the practical manifestations of these terms that would be useful to law enforcement investigators. For example, Canter's description of behavioral salience is clear enough to allow the reader to understand it conceptually and to navigate through the results of Canter's research. Indeed, the audience for his published works may largely consist of scientists and students of science, for whom Canter's definitions are likely to be sufficient. What is needed, however, is an additional step that relates terms such as *behavioral*

salience to the pragmatics of crime investigation. What does it mean if a particular behavior is identified as salient? Does it make this behavior unique to an individual? Does it make the behavior a more important investigative focus than other elements of the crime? What is it about the behavior that makes it salient, and how will that be of use to investigators? An important part of Canter's profiling approach is his position that scientific profiling inquiries must provide information that is of use to law enforcement. Canter's model unfortunately fails to achieve this goal.

Second, although some of Canter's terms seem to represent concepts that are present in the nonscientific models of profiling, he makes no attempt to reference the other models' concepts or compare his terms with theirs. For example, what is the difference between the "thematic facets" described by Canter (2000) and the typological categories included in the nonscientific models? Likewise, is an interpersonal narrative fundamentally different from an offender motivation? In addition, Canter uses terms such as *modus operandi* and *signature*, but he does not discuss whether he agrees with other authors' definitions of these words (which are not uniform) or whether he has his own definitions. Without a clear explanation of terms that relates them to other terms being used in the field, it is difficult to determine to what extent Canter adds anything new to the study of profiling and to what extent he simply reworks existing concepts.

Research Methods for Profiling

Methods used in the scientific study of profiling must be clearly described, explained, and justified. Methods for data collection and analysis must be reported in such a manner as to allow studies to be replicated by other investigators. For example, investigators should describe in detail any questionnaires used; any instructions given to participants; and methods for data entry and analysis, including the kinds of statistical tests that were used and why they were chosen. Methods must also be justified in the sense that they must follow logically from the investigator's theoretical framework and must be usable in a manner that will address the hypotheses posed by the investigator. For example, one's theoretical framework of profiling might suggest that various cognitive aspects of offenders can be extrapolated from crime scene evidence. A resulting hypothesis might be that offenders who premeditate their offenses come prepared with weapons and other necessary materials and do not opportunistically use items that are native to the crime location. To address such a hypothesis, one might conduct offender interviews, review police reports and inventories of items found at the scene, and consider forensic analyses of weapon ownership and manner of use. One would not expect that an investigator would use such methods as

projective personality tests, personality inventories, or other methods irrelevant to the theoretical framework.

It is in the area of research methods that the weaknesses in the theory and hypotheses of the Canter model are exemplified and the model begins to fundamentally lose coherence. Consistent with Canter's theoretical framework, the main focus of his empirical research centers around attempting to establish links between various offender actions and offender characteristics. To accomplish this, Canter and his colleagues (Canter & Fritzon, 1998; Canter & Heritage, 1990; Canter et al., 1998; Salfati & Canter, 1999) have conducted studies using SSA to evaluate data from cases of serial murder, arson, child sexual abuse, and rape. The goal of these studies has been to examine the spatial representation of crime actions or elements and evaluate them through the interpersonal-narratives perspective. Note that Canter and his colleagues have conducted other research in the profiling field. However, the four studies that are reviewed in this section are currently the only ones that pertain directly to testing the interpersonal-narratives theory. Some of Canter's other research on profiling is included in the next section of this book.

There are four main areas in which methodological problems with Canter's model are apparent: data sources, data coding, selection of SSA as an analytic tool, and evaluation of results.

Data Sources

First, the data sources used in these studies are problematic. Each of the aforementioned studies used archival data obtained from police agencies. In the cases involving serial murder and arson (Canter & Fritzon, 1998; Salfati & Canter, 1999), the data comprise information from solved cases. From these cases, the authors have selected variables relating to both the crime and the offender. Canter et al. (1998) used data from child sexual abuse incidents that were reported to police but not necessarily solved. Canter and Heritage's (1990) study does not specify whether the cases used were solved or unsolved; however, the data were collected exclusively from victim statements. The variables derived from these two cases (Canter et al., 1998; Canter & Heritage, 1990) therefore relate only to characteristics of the offenses and not to those of the offender. In all four studies, the use of police archives as a source of data is limited by four factors. First, the information in police records is not collected or stored for research purposes. It is therefore not possible to ensure that the information contained in these records has been collected according to the standards that would be expected in a scientific study or that the data were collected according to any protocol prescribed by the studies' authors. When data are collected for research

purposes, steps must be taken to minimize the influence of random variation and error in each case. These steps are not likely to have been taken by the police in their documentation of reported crimes.

Second, there is no way to ensure that the information collected is uniform across cases. Although variables such as demographic information about victims and offenders (if available) might be collected in every police report, other information is likely to vary across reports. Factors such as police experience, interview questions, victim memory of events, and witness availability could influence the comprehensiveness of individual reports. Consider the following example:

A female victim is approached by a male purse snatcher on a busy metropolitan street late at night. This neighborhood is known for its heavy gang activity. She has just left her job at a convenience store, where she works the graveyard shift. It is the end of the month, and she has just received her paycheck. The offender approaches the victim, grabs her by the arm, and demands her purse. She struggles with him, has her purse ripped from her arm, and dislocates her shoulder.

In one scenario, the victim is interviewed by a veteran officer with several years of experience investigating similar types of crimes in the precinct where the robbery took place. In an alternative scenario, the victim reports the crime to an inexperienced officer who has just been transferred to the precinct from a rural area and happens to be on duty the night of the robbery. As one can imagine, the first officer's familiarity with the type of crime and environment in which the crime took place might lead him to ask very different questions of this victim. This officer might be concerned with such information as a physical description of the offender, whether he wore any items of clothing that signified membership in a particular gang, what the offender said when he approached the victim, and what property was taken. The second officer, with less experience with this type of crime and environment, might be more inclined to ask different questions—perhaps asking the victim about her injury, whether she recognized the offender, why she was walking down that street late at night, and why she did not comply with the attacker's demand to surrender her purse. The two police reports generated by these officers would therefore likely show qualitative differences in the accounts of the two crimes. They would differ in the amount, type, and comprehensiveness of information collected. This type of variation is problematic, because in the four reviewed studies the data were, in essence, collected by the police. As can be seen in this example, without appropriate controls and guidelines for data collection the potential for incomplete or inconsistent inclusion of crime actions is high.

Third, even if law enforcement agencies collected information reliably and consistently, this would still not solve the problem of the information's

validity. In these four studies, there is no verification of the truth or accuracy of information contained in the police reports. This is particularly the case in the child sexual abuse study (Canter et al., 1998), because it used unsolved cases in which the crime events were not confirmed through the legal process. Accuracy of events may indeed be difficult for police and researchers to establish in violent crimes. Victims and witnesses may not remember every element of a traumatic incident, they might remember events incorrectly (Cutler & Penrod, 1995; Loftus, 1996), or their memories may be distorted by police interrogation (Bruck & Ceci, 1995). Even in solved cases, in which information about the offender is also available, there is still the risk that any information obtained from offenders (e.g., confessions, allocutions) will still be influenced by the offender's desire to avoid or minimize punishment. Dishonesty has historically been one of the hallmarks of criminality, and empirical research has demonstrated that particular types of offenders—namely, sexual offenders and psychopaths—are likely to deny, minimize, and otherwise lie about their offenses (Hare, Forth, & Hart, 1989; Laflen & Sturm, 1994; Rogers & Dickey, 1991). Although legal records may be the best available documentation of crime resolution, it is still difficult to rely on them for their accuracy in chronicling crime details.

The fourth issue pertains to the two studies that used solved cases: Canter and Fritzon (1998) and Salfati and Canter (1999). These solved cases involve offenders who have been apprehended using traditional law enforcement methods. These offenders may not share the same characteristics as those who are able to evade capture and whose cases might thus become the subject of profiling. Conclusions drawn about apprehended offenders are therefore difficult to generalize to the at-large criminal population. Solved cases admittedly may be the only ones in which both crime information and offender characteristics are available for simultaneous study. If a major goal of profiling research is to examine the relationship between crime characteristics and offender characteristics, the use of solved cases may currently be the only option. Nonetheless, this is a limitation that should be clearly stated in any research study that uses this type of data for the purposes of profiling.

Coding of Data

The second methodological problem in the Canter model is the coding of case evidence for research use. The variables selected for the reviewed studies are not a comprehensive reflection of the information contained in the police files. In each of the four studies, Canter and his colleagues have selected the variables thought to best reflect differences between the offender themes or types under investigation. So, for example, in Canter et al.'s (1998) study of child molesters, the variables selected were those that the

authors believed would best reflect the intimate, aggressive, and criminal–opportunistic types of child molesters. Variables unrelated to these types were not included in the analysis. Although this method of selecting variables does not necessarily detract from an effort to demonstrate that certain variables of interest cluster together into offender themes, it does result in a loss of what might be critical information. If these omitted variables were included in the analyses, other, more powerful relationships between criminal behaviors and offender types may have been revealed. Unfortunately, because none of the studies provides information about the proportion of case information comprising the variables of interest, it is unclear from the research how much information was lost.

Second, the selected variables were coded dichotomously according to their presence or absence in a given case. For example, in Canter et al.'s (1998) study of child molesters, one variable examined was “the offence was committed outdoors” (p. 555). For each of the 97 cases analyzed, this variable was coded as either present or absent. For some variables, this dichotomous coding system appears to be appropriate. For example, “the offender kissed the victim on the lips” and “the child was alone at the time of the offense” (Canter et al., 1998, p. 555) are variables that one could code with the appropriate case information as either “yes” or “no.” However, the coding of other variables requires much more judgment. For example, the variable “desensitization (a.k.a. minimization) occurred” is described as

the lowering of a child's threshold to sexual behaviour and can include the following: allowing the child to observe sexual behaviour taking place physically (e.g. between the offender and the child's mother, or between the offender and other younger children), or through pictures (i.e., pornographic magazines or video-cassettes), or by physically touching the child—making any indecent action appear as a legitimate mistake. (Canter et al., 1998, p. 554)

How is a coder to determine the simple presence or absence of this variable? How does the coder know whether the offender made an indecent action appear to be a mistake? Are there other forms of desensitization, such as discussing inappropriate sexual topics with young children, or telling sexually explicit stories, that are not included in the previous description? No guidelines for coding are included in Canter's studies, and no interrater reliability information is presented, making it difficult to determine whether these variables were indeed coded uniformly by individuals who might have had different interpretations of the case information. Finally, as is the case with Canter's selection of which variables to analyze, the dichotomous coding of these variables, even if it could be done reliably, necessarily results in a loss of information in situations in which there is no simple yes or no answer. Thus, with variables that are present in degrees, rather than in an

all-or-nothing fashion, forcing information into the categories of “present” or “absent” means that potentially important information could be excluded or that trivial information could be included.

Selection of Smallest Space Analysis as an Analytic Tool

The third methodological issue is whether the selection of SSA is appropriate for addressing Canter’s theory and hypotheses. Smallest space analysis is a statistical tool with which each variable of interest is correlated with every other variable of interest to produce a correlation matrix. Because Canter’s variables are coded as dichotomous, he uses Jaccard’s coefficient as a measure of association. These correlations are then rank-ordered and represented as points in a visual space (scatter plot), such that the higher the correlation between two variables, the closer they will appear on the SSA scatter plot.

There are three limitations to the selection of SSA. First, Canter uses SSA in both an exploratory and confirmatory manner. In three of the studies—Canter and Fritzon (1998), Canter and Heritage (1990), and Salfati and Canter (1999)—Canter conducted the SSA analysis on variables with no a priori prediction, to explore the themes that may emerge. This use of SSA appears to be quite limited. The technique itself does not partition the scatter plot into themes; this is instead accomplished by the researcher’s visual examination of the data, which involves a significant amount of interpretation. In at least one study (Canter et al., 1998), Canter did have an a priori prediction of the clusters that are expected to emerge from the data, which is confirmed by his visual examination of the SSA scatter plot. In this case, the use of SSA to confirm the existence of themes could provide *evidence in support of Canter’s interpersonal-narratives theory*, assuming that the variables and data are free from error. For example, if Canter can predict three clusters of child molester variables (Canter et al., 1998), and can specify in advance which variables will emerge together in clusters (e.g., a cluster containing “intimate” variables, such as affection, promises of gifts, and kissing), then this provides empirical support for the idea that there are three distinct clusters, or themes, of child-molesting behavior. Unfortunately, discerning why such themes emerge is beyond the scope of SSA. The importance of Canter’s themes as providing a link between offender actions and offender characteristics is therefore not adequately addressed by this statistic.

Second, because SSA is a nonmetric statistical tool, it does not provide any information about the strength of the associations between variables in a given cluster. By examining an SSA scatter plot it is possible to make the general determination that some variables are more associated than others; however, it is not possible to determine how associated two variables

are. It is unclear why Canter and his colleagues have not incorporated the use of factor analysis to remedy this problem. By computing factor loadings for each variable in each of the offender themes, the authors could not only determine which variables are central to the theme of interest but could also compute the degree to which other variables in the cluster are associated with that theme. The selection of factor analysis over SSA would seem to provide more meaningful analyses in this regard.

Third, SSA is inadequate for determining how well crime variables predict offender characteristics—which is the crux of Canter's profiling equation. Even in cases in which offender characteristics are considered along with offense actions (Canter & Fritzon, 1998; Salfati & Canter, 1999), the use of SSA does not address the predictive power of the offender themes. Canter and Fritzon (1998) strived to compensate for this problem by using Spearman's ρ to calculate the correlations between themes of offense actions (A) and themes of offender characteristics (C). There are two difficulties with using such an approach. First, the attempt to correlate these various themes presupposes that there are legitimate theme groups to compare. The authors' calculations of Cronbach's α for each group, ranging from .38 to .83, already hint that the success of such an endeavor will be limited. Second, the selection of a correlational method to evaluate these data does not speak to the predictive power of the model. Even if the correlations were to emerge as expected (which was not entirely the case in Canter & Fritzon's [1998] study), this provides only a limited amount of information about the tendency of certain offense variables to co-occur with certain offender characteristics. It does not allow one to infer that offense actions were the result of certain aspects of the offender's background. The selection of a correlational measure may contribute to outlining a basic framework of offender themes, but it is not adequate for assessing the role of interpersonal-narratives as a link between A and C variables.

Interpretation of Results

The fourth methodological problem is the Canter model's interpretation of results provided by the application of SSA to the data. There are three main ways in which this interpretation is problematic. The first problem is the interpretation of SSA data from a two-dimensional perspective. The visual space of an SSA scatter plot is not always best represented in two dimensions. To determine the best representation of the data, one calculates a Guttman-Lingoes' coefficient of alienation. The smaller the coefficient of alienation, the better the fit of the scatter plot to the original matrix of correlations. Although the coefficients of alienation in Canter's research range from .13 (Canter & Fritzon, 1998) to .30 (Canter & Heritage, 1990), Canter always represents his data in a two-dimensional space. In a separate

study, in which a coefficient of alienation of .30 was obtained (Godwin & Canter, 1997), the authors characterized this number as “a little high, indicating that the original matrix . . . may require more than two dimensions to represent all their nuances” (Godwin & Canter, 1997, p. 31). Nonetheless, the authors display and interpret the data in two dimensions, citing “simplicity and clarity” (Godwin & Canter, 1997, p. 31). In Canter and Heritage’s (1990) study of rapes, the two-dimensional space is also chosen for the sake of “simplicity” (p. 195), despite its higher coefficient of alienation (.30 vs. .22 for three dimensions). It is not clear how much the visual scatter plot is altered by forcing the data into two dimensions, but using two dimensions in cases in which such a representation is not the best fit weakens the foundation for any subsequent interpretation of results.

Second, in the studies that contain no a priori hypotheses about variables that should cluster together, there is insufficient evidence to support Canter’s assertion that offender actions correspond to the hypothesized offender themes. Although SSA presents a spatial representation of characteristics that are likely to co-occur, Canter’s imposition of offender themes on the SSA scatter plot is not always supported by this analysis.

For example, consider the SSA scatter plot depicted in Figure 5.1. This figure is an example of the type of spatial representation that would result from an SSA analysis; it is taken from Salfati and Canter (1999). This figure has been altered such that the lines inserted by the authors to distinguish between offender themes have been removed. As can be seen, the data points are labeled according to their corresponding crime features. Certain clusters in the data arguably are apparent in a visual examination. Consider the various options for where lines might be drawn to distinguish among these clusters.

Figure 5.2 is the same SSA scatter plot, with lines drawn by the original authors to distinguish among the Instrumental Opportunistic, Expressive Impulsive, and Instrumental Cognitive offender themes (Salfati & Canter, 1999). As can be seen from the positions of the variables, an Instrumental Cognitive offender might be likely to commit the acts within the boundaries of that offender theme—such as striking the victim in the head, transporting her, hiding the body, and placing the body face up. However, a closer examination of the SSA scatter plot leads to several questions: Why are “property not id,” “face up,” and “outside” included in the Instrumental Cognitive category rather than the Expressive Impulsive category? What is the justification for including “sexual” and “part undr.” in the Instrumental Opportunistic category rather than a separate, fourth category? It appears that the decision to distinguish among these three themes is based not solely on the data but on differences that the authors perceive to be valid. Indeed, the authors wrote that “any variables that fell in between two regions were allocated to the region whose theme is best reflected” (Salfati & Canter,

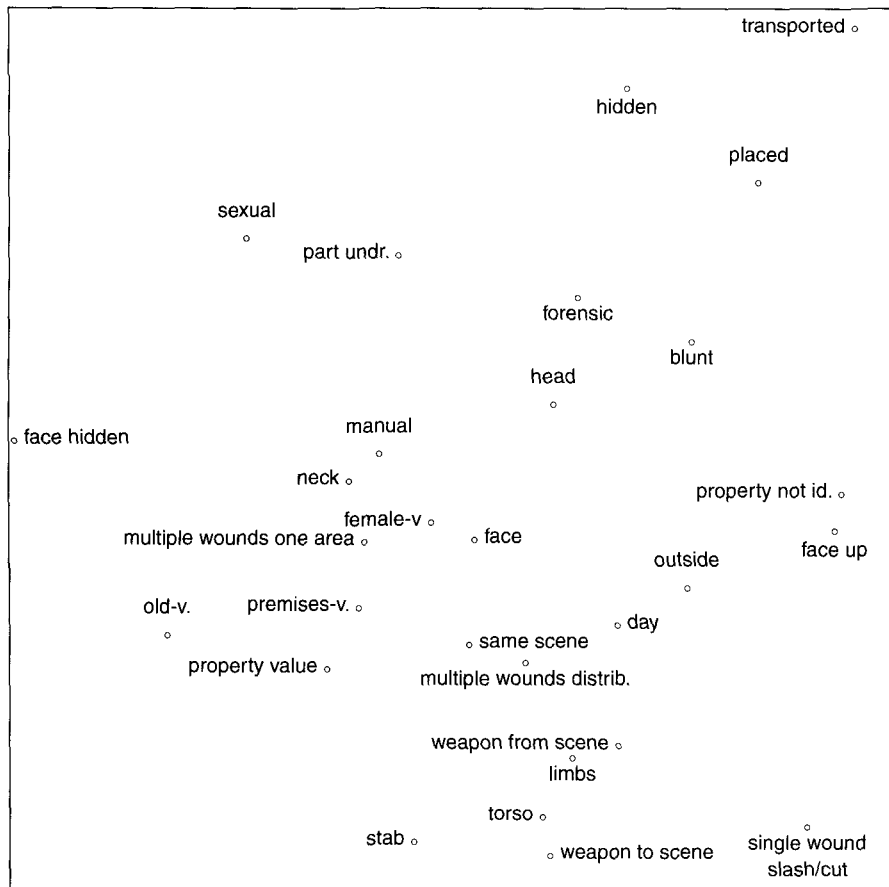


Figure 5.1. Homicide crime scene scatterplot. From "Differentiating Stranger Murders: Profiling Offender Characteristics From Behavioral Styles," by C. G. Salfati and D. Canter, 1999, *Journal of Behavioral Sciences and the Law*, 17, p. 400. Copyright 1999 by John Wiley and Sons, Ltd. Adapted with permission.

1999, p. 401). Therefore, it might easily be the case that a victim who was attacked outside was victimized by an Expressive Impulsive offender rather than the Instrumental Cognitive offender to whom this variable is attributed. Salfati and Canter (1999) did not provide sufficient evidence that their interpretation is the correct one.

Third, as discussed earlier, the use of SSA is not adequate for establishing an explanatory relationship between offender actions and their corresponding clusters, or between offender actions and offender characteristics. Recall that in the Canter model the interpersonal-narratives theory is posited as providing an explanatory link between the two halves of the canonical profiling equation. Unfortunately, an SSA analysis does not provide such a link. Canter's model interprets the clustering of data points as being

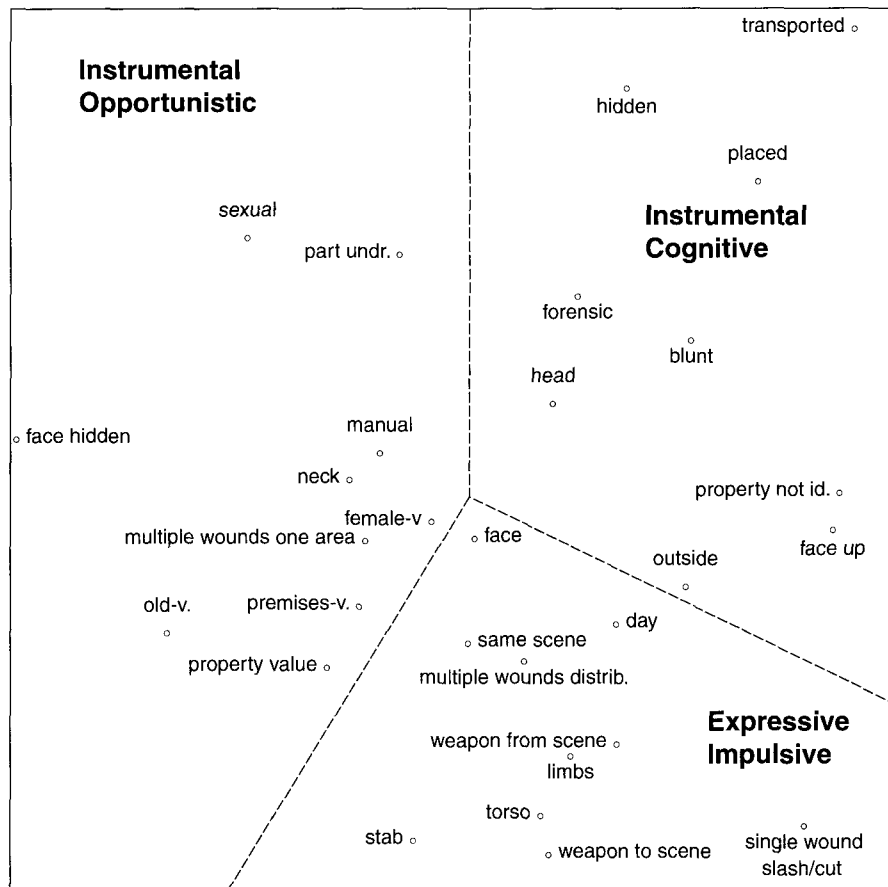


Figure 5.2. Homicide crime scene themes. From "Differentiating Stranger Murders: Profiling Offender Characteristics From Behavioral Styles," by C. G. Salfati and D. Canter, 1999, *Journal of Behavioral Sciences and the Law*, 17, p. 400. Copyright 1999 by John Wiley and Sons, Ltd. Reprinted with permission.

explained by their correspondence to offender themes; that is, Canter posits that particular data points cluster together because they represent the hypothesized thematic facet. For example, re-dressing a victim and releasing a victim would be thought to cluster together because they both represent the offender's concern for the victim as a person. At best, it could be said that these variables correspond to some underlying factor. Unfortunately, as previously discussed, there is insufficient evidence not only to unequivocally establish that these two data points belong to the same offender theme but also to establish that these data points co-occur as the result of the offender role theme specified by the model. The use of SSA to support the explanatory role of interpersonal narratives as a link between offender actions and characteristics is therefore flawed.

Methods for Profilers in Practice

In discussing profiling, it is vital that scientific models explain exactly what profilers are doing in the conduct of their work. One of the limitations discussed in the nonscientific models of profiling is that none of the models explains how to profile. This must be remedied in any scientific model of profiling, for two reasons. First, without a clear description of profiling procedures there is no way to ensure that profiling is being conducted and measured reliably across profilers. On a related note, without clear procedures there is no way to ensure that an individual profiler will produce similar profiles from the same data on separate occasions. Second, a description of profiling procedures makes it possible to examine what is being done in profiling. Without such a description, the process by which investigators go from evidence to conclusions about offender characteristics remains a mystery. The clear description of procedures ensures that a valid phenomenon is being measured.

To accomplish this, each step in the profiling process must be described. In this description, the following points must be addressed.

- *Evidence and information.* What are the important pieces of evidence and information that should be collected for profiling? How does an investigator decide which data are important to consider? How is this information gathered? By whom is the evidence gathered? For example, if the victim is deceased, a victim history may be one of the pieces of information that should be collected. How does an investigator decide whether a victim history is necessary? How is this history ascertained (e.g., through interviews, documents, etc.)? Who gathers this evidence—does the investigator rely on the information provided by law enforcement, or should he or she actually go and procure this information independent of law enforcement agents?
- *Interpretation of evidence.* How does an investigator interpret evidence to determine such things as the sequence of events at a crime scene, the nature of violent or sexual acts committed, the presence of staging, the theft of souvenirs or trophies, or premeditation? Is this interpretation assisted by evaluations conducted by forensic scientists? If so, how does an investigator use this information to interpret evidence? For example, a given crime scene might contain a deceased victim with a bullet wound, no weapon present, and jewelry and electronics missing (per the neighbor's report of items missing). At face value, this appears to be a burglary that resulted in the shooting of the

homeowner, but how does an investigator officially arrive at such a conclusion? How does the evidence inform the investigator about what happened at the crime scene? Does the investigator consult a coroner's report? Will such information determine for the investigator whether the shooting was premeditated or impulsive? How does the investigator determine whether the missing items were stolen for their value or whether they were taken to make the shooting look like part of a burglary?

- *Determining offender characteristics.* Once an investigator has collected and interpreted the evidence, how does he or she determine various offender characteristics? Are there certain relationships between evidence and characteristics that can be relied on in practice, such that the presence of a certain kind of evidence indicates a particular offender characteristic? How does one determine which offender characteristics are important to the investigation of the crime?

Generally speaking, the Canter model does not devote any significant time to describing profiling practice. Given Canter's focus on empirical research rather than investigative experience as a tool for crime-solving, it is not surprising that his model prescribes neither methods for evidence collection nor methods for the interpretation of that evidence. The starting point of the Canter model therefore assumes that the relevant facts, including the interpretation of evidence that would yield such information as cause of death, order of events, and weapons used, are accurate and available. Although this choice may represent a legitimate philosophical difference between a professionally based nonscientific approach and a scientific one, it would nonetheless be worthwhile to the reader and, ultimately, to investigators, if Canter's model were to provide a basic discussion of the kinds of evidence used in profiling practice; the quality, accuracy, and source of any interpretations that may be made about the evidence; and the importance of complete and accurate evidence for hypothesis testing. As discussed in the previous section, the quality of the data, hampered by potential inconsistencies in the collection of evidence and information across cases, is one obstacle to Canter's empirical study of profiling. It would therefore be worthwhile to discuss ways to address this limitation in the context of profiling practice.

The more conspicuous absence in methods of profiling practice is Canter's failure to clearly explain methods or procedures for transforming the findings of his empirical studies into offender characteristics that will be of use to investigators. The canonical equation that Canter uses to demonstrate his fundamental profiling question requires that offender characteristics be discernable from offender actions. In building his model of profiling, Canter comprehensively addresses the first half of this equation.

His hypotheses of behavior salience, offender consistency, and offense specificity and his hierarchy of criminal actions are all examples of his willingness to thoroughly evaluate offender actions from a variety of perspectives. However, Canter does not adequately address the second half of his canonical equation: producing offender characteristics that law enforcement agents can use in identifying perpetrators. In considering the link between offender actions and characteristics, what Canter does offer is his theory of interpersonal narratives. To illustrate, he includes a description of the victim role themes that are derived from this theory. This discussion of victim role themes includes the various offender characteristics that are thought to be associated with each theme. Unfortunately, Canter derives these offender characteristics on the basis of a theory and has yet to provide sufficient information as to how to arrive at these offender characteristics from a real set of criminal actions. This presumably is achieved through some unspecified application of the interpersonal-narratives theory, but Canter provides no procedures to explain how this operates in practice. Therefore, despite Canter's framing of the profiling question as an equation linking offender actions to offender characteristics, Canter does not provide sufficient procedures for the completion of such an equation in practice.

It may be that Canter provides no procedures for deriving offender characteristics from actions in practice because these procedures have not yet been adequately developed and verified. Canter certainly cannot be faulted for not having all of the answers in a model that is relatively new. However, if there are as yet no reliable ways to reason from actions to characteristics in an investigation, this must be clearly expressed in the model. Otherwise, Canter's description of offender characteristics through the victim role themes makes it appear that Canter has conceptually leapt to the end of the profiling equation without explaining to the reader how he arrived there.

EMPIRICAL VALIDATION

In a scientific model, once hypotheses are specified, and terms and methods of testing and practice are operationalized, researchers can proceed to the actual testing of hypotheses generated by the model's theory. The goal of this process is to demonstrate that the overall model and theoretical framework can truly accomplish what it claims (e.g., prediction of offender characteristics).

There are two main ways in which scientific profiling models must be empirically validated. The first is with regard to outcome. The essential question of outcome is, Does profiling work? The manner in which this

question is addressed may vary according to different models. For example, one way to address outcome would be to ask whether profiling techniques are helpful in generating leads and ideas in a cold investigation. Another way to address outcome would be to determine whether predictable relationships can be demonstrated between certain types of crime scene evidence and certain offender characteristics. Still another way to address outcome would be to ask whether the overall process of profiling (as defined by an individual model) is more likely to produce an offender arrest than traditional law enforcement methods.

The second manner in which scientific profiling models must be empirically validated is with regard to process. The essential question of process is, How does profiling work? Here, a scientific model must evaluate whether profiling operates according to the processes that one would expect. For example, one fundamental question to consider is, What do profilers actually do? Researchers could examine whether investigators trained in profiling techniques attend to and process crime scene information differently than do untrained investigators or laypersons. Researchers could also examine the reasoning and decision-making processes that profilers apply when analyzing a case.

The process of empirical validation, by addressing outcome and process, will yield information that can be used to evaluate the model's theoretical framework. This represents a significant departure from the nonscientific models of profiling in that it presents an opportunity for critically evaluating one's profiling model.

The Canter model is still evolving, and it is therefore too early to judge whether it will ultimately survive the empirical validation process. However, general evaluative observations are possible.

For the Canter model, the question of outcome is addressed by the canonical profiling equation. Thus, the question, Does profiling work? is operationalized by asking whether offender characteristics (C) can reliably and validly be determined from offense actions (A). The studies that have been reviewed in this section have provided some early, albeit limited, evidence that patterns can indeed be found in the actions and characteristics of offenders across different cases of a crime type. This represents a significant improvement over the efforts of nonscientific profiling models, which have not evaluated this assumption in a systematic fashion. However, what Canter's model has not yet demonstrated is that offender characteristics can be reliably and validly deduced by considering these offense actions either singularly or in their patterns. This is the fundamental issue that must be resolved before the Canter model can claim empirical validation with regard to outcome. Furthermore, none of the research reviewed has addressed whether any of Canter and colleagues' findings can successfully be applied

to real, unsolved cases. The question of outcome is therefore unanswered for profiling effectiveness as well as efficacy.

The issue of process validation is also addressed by the canonical profiling equation. As stated earlier, the question for the profiling process is, How can offender characteristics be derived from offender actions? In this regard, the issue is whether Canter's interpersonal-narratives theory provides the link that allows C variables to be predicted from A variables. Canter's hypothesized process is that a consideration of the roles that victims and other individuals play in the offender's interactions should allow the determination of C variables from A variables. What the Canter model has accomplished in this regard is to provide some evidence for the existence of offender themes, based on crime actions. It is not yet clear that the groups that have emerged from studies using SSA are best defined as themes of interpersonal narratives, but establishing the existence of themes is a first step to providing the explanatory link between A and C. Unfortunately, there is as yet insufficient support to assert that this process is empirically valid. More research is needed to establish the mechanisms involved in the canonical profiling equation and whether those mechanisms can produce successful predictions about offenders.

CONSIDERATION OF DISCONFIRMING EVIDENCE

Through the process of hypothesis-testing, scientific models may have elements of their underlying theories contradicted. For example, offenders who inflict multiple superficial wounds on living, conscious victims might be found to have sadistic personalities in only one fourth of the cases in a particular study. Although disappointing for the investigator whose theory has just been challenged, this information is still important and can be used to reconsider hypotheses about the relationship between sadistic personalities and crime scene variables.

This opportunity is one of the most important distinctions between scientific and nonscientific profiling models. In nonscientific models there is no hypothesis testing or systematic evaluation of assumptions. Because of this, nonscientific profiling models are insulated from being contradicted. Where nonscientific profiling practice fails to confirm an expected relationship or phenomenon, nonscientific profilers might be inclined to treat the result as a simple anomaly, because no information would be available to indicate otherwise. However, although the failure to identify and consider disconfirming evidence can protect fragile theories, it also prevents the field from learning anything new. The scientific search for knowledge requires

that one will occasionally be wrong. Where science departs from nonscience is in the fundamental belief that the possibility of being wrong cannot prevent one from asking the questions important to the field. Without the consideration of disconfirming evidence, it is not possible to evaluate a model's veracity and move toward improving it.

A concern that arises as Canter and colleagues continue to test the various elements of the Canter model is their treatment of data that do not fit with expectations. There are several instances in which the authors note disconfirming or ambiguous evidence but, rather than evaluating the impact of this evidence on the model, treat the evidence as anomalous and create an explanation to make it consistent with the model. For example, in discussing correlations between scales of actions and characteristics of arsonists, Canter and Fritzon (1998) noted a "bias in the relationships found in the current data set" (p. 89). Despite this mention, however, the authors go on to assert that "this system of correlations . . . provides strong support" for their hypotheses (p. 90). A second example is the Canter model's treatment of variables that appear on the SSA scatter plot in unexpected regions. In Salfati and Canter's (1999) study, variables with ambiguous placement are simply moved into categories in a way that the authors believe to make sense. In Canter and Heritage's (1990) study of rape, explanations are created for the appearance of variables in unexpected places. The appearance of a variable indicating that the offender implies knowing the victim in the "impersonal interaction" category is handled as follows: "This is difficult to interpret at this stage, but possibly implies that the offender had prior knowledge of the victim, having identified her as a desirable object" (Canter & Heritage, 1990, p. 200). Likewise, high coefficients of alienation for the SSA scatter plots do not deter the authors from representing the data in a two-dimensional space (Canter & Heritage, 1990; Godwin & Canter, 1997), and analyses are carried out on data that are characterized as "potentially unreliable" (Canter & Fritzon, 1998, p. 77). Taken together, these examples are indicative of a practice whereby information that does not fit with the goals or conclusions of the Canter model is either disregarded or made to fit—a practice reminiscent of the tactics used by nonscientific profiling models. Although Canter notes that the information with which profiling researchers have to work is constrained, it is still necessary to conduct a scientific study of profiling as rigorously as possible. It is not expected that every hypothesis will be confirmed or that every criminal phenomenon can be explained with the tools scientists currently have at their disposal. What is required, however, is an appropriate consideration of all evidence in an empirical study, even in the early exploratory stages of a model such as this.

DISCUSSION OF LIMITATIONS

The final element of a scientific model of profiling is the discussion of limitations. Through the process of empirical validation, investigators become aware of their models' limitations. This is because, as previously discussed, even though the scientific testing of hypotheses may yield data that support a model, this process is also likely to provide an investigator with information that requires modification of the original theoretical framework. From a conceptual standpoint, limitations should be discussed to give direction to future research. If one part of a theory does not find support in an empirical study, perhaps researchers can move in a more fruitful direction. If certain conditions of a study limit the generalizability of the results, this information can be used to improve the conditions of future studies. Moreover, discussing limitations is a way to address the results of an individual study in a broader context. By doing so, authors can address whether a theory has found support, discuss why the results may have turned out as they did, and think creatively about how to improve the theory and test it in the future. From a more practical standpoint, limitations should be discussed so that the scope of a model's explanatory power is made clear for use in the field. Scientific investigators must not go beyond this scope in applying profiling methods to real-world cases. For example, a series of studies might demonstrate that in cases of female sexual assault–homicide victims, the covering of the victim's face by a male offender indicates offender remorse. Even if such a study could be replicated numerous times and determined to be wholly valid, this application of this finding would be limited to cases involving female victims and male offenders in the type of scenario described. It would not be appropriate for one to draw similar conclusions about male victims, female perpetrators, or other types of crimes.

Some nonscientific models discuss limitations to their approaches. Turvey (1999), for example, cautioned readers that the categories in his behavior–motivational typology contain some overlap, limiting the degree to which an offender can be clearly assigned to only one category. Likewise, Holmes and Holmes (1996) cited limitations to the computer models of profiling discussed in their book. However, the difference between nonscientific and scientific models of profiling is that nonscientific models, rather than using these limitations to draw boundaries around the applications of these methods, promote the use of intuition or professional knowledge to compensate for what cannot be scientifically demonstrated. Thus, where the behavior–motivational typology cannot accurately be relied on to classify an individual, a profiler, according to Turvey, should use his or her professional expertise to make such a determination. Holmes and Holmes (1996) similarly retreated into the use of intuition when their logical or science-

related explanations were insufficient. In a scientific model of profiling, the application of profiling methods should be constrained by the limits of those methods.

Canter is one of the only profiling authors to have discussed the limitations of the profiling endeavor as a whole. The disparity between the current limits of profiling techniques and the claims that are made by profilers about their effectiveness are discussed in the *Offender Profiling* series (Alison & Canter, 1999a). Alison and Canter (1999a) argued therein that psychologists should refrain from purporting to provide expertise in an area that is not yet empirically supported. Although Alison and Canter's (1999a) cautions are laudable, theirs is an ironic position to take because Canter has used his model for aiding in police investigations, knowing that it is not yet empirically validated.

To their credit, Canter et al. (1998) characterized their research as a "first step" (p. 550) and encouraged future research to clarify gaps in Canter's studies. In the individual studies conducted by Canter and his colleagues, however, significant time is not devoted to a discussion of limitations (Canter & Fritzon, 1998; Canter & Heritage, 1990; Canter et al., 1998; Salfati & Canter, 1999). Given the instances of potentially disconfirming evidence previously discussed, it would be preferable for the authors to more formally address limitations to data sources, analytic tools, conclusions, and practical applications.

DISCUSSION OF THE CANTER MODEL AS A SCIENTIFIC MODEL OF PROFILING

There are two main strengths evident in Canter's approach to profiling. First, it is to his credit that he has advocated for a science of profiling, having identified several problems with the current art of profiling as conducted by the FBI and other independent profilers. In many ways, Canter's criticisms are consistent with the evaluation of nonscientific profiling models presented in this book. Profiling without science amounts to guesswork, and attempts to create structure within nonscientific profiling models have resulted only in vague categories and procedures that lack coherence, comprehensiveness, and utility. Canter has recognized that science is needed both to anchor and to evaluate profiling. He has identified novel methods to empirically test investigative inferences, and he has considered scientific bases for organizing crime actions and offender characteristics.

Second, Canter has attempted to place profiling within a theoretical framework of criminal behavior, which provides a rationale for profiling and creates the possibility of inferring an offender's characteristics from his

actions. This rationale is not present in the nonscientific models, which instead take for granted that offender behavior reflects personality without considering a foundation for why this might be the case. The result is that nonscientific models rely on either vague pieces of psychoanalytic theory or completely atheoretical conjecture.

Despite these strengths, there are also several limitations to Canter's model, which are described in this chapter. These include conceptual weaknesses in his theory, resulting limits to hypothesis generation, problematic data selection, coding, application of methods, interpretation of results, and an absence of procedures to transform the model into a practical investigative tool. There is one other conceptual problem with the Canter model that emerges when one compares his model with the nonscientific models of profiling. Although Canter criticizes the use of typologies, he actually does not solve the problems inherent in typologies with his offender themes. Canter attempts to draw some distinctions between offender themes and the typologies of other profiling models by describing the themes as flexible and overlapping. As discussed, however, the reality of behavioral typologies is that they always contain general categories that overlap in practice. Thus, similar to the other reviewed models, the Canter model presents descriptions of various kinds of offenders, dividing them according to the roles that they assign their victims. Although Canter includes the caveat of category flexibility, his themes ultimately amount to yet another kind of offender typology, fraught with the same problem of category overlap.

Canter's attempt to bring science to profiling is laudable, but it is clear from the review in this chapter that there is still considerable room for improving his model. Despite Canter's stated commitment to science, he periodically steps outside the bounds of science by failing to critically consider the impact of each of his empirical findings on his theory and by proposing offender themes that parallel the nonscientific typologies of weaker profiling models. The basic profiling problem, as described by Canter, is that of linking offender actions during the commission of a crime to behavioral characteristics that will help to identify the offender. Unfortunately, Canter has not yet provided such a link through his research.

USE OF SCIENCE BY NONSCIENTIFIC PROFILING MODELS

Now that the tenets of science have been examined, and Canter's scientific model of profiling has been analyzed in the context of these tenets, it is worthwhile to revisit the use of science in the nonscientific profiling models, discussed in chapters 2 and 3. In chapter 3, these nonscientific models were critically evaluated from outside a scientific framework, given

that their authors largely portray them as artful models of profiling. Nonetheless, because there are instances in which all of the models invoke science in support of their various claims, it is still important to briefly examine the models' relationship with science to determine whether any of the criteria have been satisfied that distinguish scientific from nonscientific models of profiling. Such an examination shows that two of the models contain no science whatsoever, and the other three models contain fragments of science insufficient to support their claims.

Models With No Science

The Turco (1990) and Holmes and Holmes (1996) models are completely devoid of science. Turco, in advocating for a psychoanalytic approach to profiling, likens part of his profiling process to a Rorschach test. Projective tests have historically been controversial, and a recent meta-analytic review of projective techniques published in *Psychological Science in the Public Interest* (Lilienfeld, Wood, & Garb, 2000) led the authors to conclude that experts "should not be allowed to state or imply that projective techniques are widely accepted by the scientific community" (Lilienfeld et al., 2000, p. 57). As described by Turco, the first dimension of his model is essentially a projective technique—and is thus not accepted as scientific by the scientific community. In addition, the fourth dimension of Turco's model incorporates the term *science* in a conceptually confusing manner. Turco (1990) characterized the psychoanalytic profiler as using a scientific approach but then emphasized the importance of clinical training over academic training. His conception of science seems to be limited to procedures that have some theoretical basis, regardless of the validity of that theoretical basis. He further implied that accurate predictions cannot be made in the absence of clinical training, but he provided no evidence to support this assertion. Turco did not demonstrate that accurate predictions can be made at all, much less that clinical intuition is the cornerstone to accuracy.

It is interesting to note that the fact that the Turco (1990) model is bereft of science does not prevent the author from criticizing Douglas, Ressler, Burgess, and Hartman's (1986) model as lacking a scientific basis:

The . . . shortcoming is that there is *no real theoretical basis* for these descriptions, therefore no scientific basis for building future information, integrating theories from various disciplines consistent with observable data in the scientific approach and allowing a higher degree of predictive value. Lacking hypotheses, testing and theory development, science is difficult to take root. A random application of factual information has little place in the scientific approach. (Turco, 1990, p. 149, italics in original)

As is discussed shortly, the Douglas et al. (1986) model actually does incorporate some pieces of basic scientific principles. Turco, despite his scientific language, does not use a scientific approach in his model.

From the outset, Holmes and Holmes (1996) described profiling as an art rather than a science. In keeping with this position, the authors ultimately discarded the idea of practicing profiling on the basis of science even though they periodically refer to science to support some of their assertions. In referring to science, the authors stated that "As certainly as a psychometric test reflects psychopathology, the crime scene reflects a personality with a pathology" (Holmes & Holmes, 1996, p. 40). They also cited research findings on rape and rapists and relied on statistics in their discussion of arsonists, pausing to criticize what they believe to be flaws in the U.S. Department of Justice's data collection methods. Unfortunately, none of these references serves to add any science to the model itself.

For the most part, Holmes and Holmes (1996) recommended using psychodynamic theories—a practice that maximizes the use of intuitive judgment. One of the basic tenets of the psychodynamic approach is the interpretation of information presented by the subject or client. This interpretation is necessary because individuals are believed to be motivated by unconscious conflicts. Because these individuals are unaware of their own unconscious motivations, the role of the psychoanalyst is to bring these conflicts or motives to the surface through interpretation of that person's thoughts and actions. However, because the nature of unconscious processes renders them unavailable for direct or objective observation, any use of psychodynamic theory thus requires a certain degree of subjective judgment. Not only does this limit the value of this approach as per the earlier discussion on the use of intuition, it also results in a lack of scientific rigor. Therefore, although Holmes and Holmes (1996) may liken their profiling approach to a science, or refer to the scientific work of others, their model also contains no science.

Models With Insufficient Science

Three of the nonscientific models reviewed (Douglas et al., 1986; Keppel & Walter, 1999; Turvey, 1999) do in fact contain various scientific elements. It is unfortunate that, despite the steps that these authors take toward science, profiling, as described by these models, is not scientific.

The Douglas et al. (1986) model evidences certain strengths in terms of the comprehensiveness of the authors' recommendations for data collection and the attempt to carve out trends in analyzing evidence through a behavioral lens (e.g., analyzing the positions of bodies and discarded weapons to evaluate the sequence of offender actions and degree of offender organization). By attempting to add structure to the art of profiling, the authors

take a first step toward science. Unfortunately, as discussed in chapter 3, the classification categories and procedures are poorly defined, and the resulting profile is therefore imbued with guesses. Furthermore, because FBI profilers are explicitly trained not to put profiles in writing (Hazelwood & Burgess, 2001), the extent to which profiles can be systematically or scientifically reviewed is also limited.

Douglas and his colleagues have attempted to add a scientific component to their investigative practice primarily by collecting and interpreting evidence through interviews conducted as part of the Criminal Personality Research Project, discussed in chapter 1. In subsequent publications (Burgess, Douglas, & Burgess, 1997; Burgess, Hartman, Ressler, Douglas, & McCormack, 1986; Ressler, Burgess, Douglas, Hartman, & D'Agostino, 1986; Ressler, Burgess, Hartman, Douglas, & McCormack, 1986), the authors conducted descriptive studies of the data collected in these interviews. For example, they evaluated background characteristics of 36 sexual murderers to propose a motivational model of sexual homicide (Burgess et al., 1986). The authors also evaluated these same 36 sexual murderers to assess differences between those who had a history of sexual abuse and those who did not (Ressler, Burgess, Hartman, et al., 1986), and they evaluated differences between organized and disorganized offenders in the same sample (Ressler, Burgess, Douglas, et al., 1986). The culmination of their research was an attempt to bring science to the art of profiling in the form of a taxonomy modeled after the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; American Psychiatric Association, 2000), the *Crime Classification Manual* (Douglas, Burgess, Burgess, & Ressler, 1992), and a motivational model described in *Sexual Homicide: Patterns and Motives* (Ressler, Burgess, & Douglas, 1988).

Conducting structured interviews is, unfortunately, not science per se. Organizing descriptive information into a taxonomy is not, in itself, scientific. Likewise, making untested and arguably untestable propositions about the internal motivations of sexual murderers from a sample of 36 individuals is not scientific. Certainly, there are opportunities for science in the Douglas et al. (1986) model. For example, with adequate data, researchers could study the accuracy of profiles produced using the Douglas et al. (1986) model and could systematically evaluate the components of both the *Crime Classification Manual* (Douglas et al., 1992) and the authors' motivational model of sexual homicide. However, as discussed in this chapter, such an endeavor would require adherence to the various components of scientific inquiry. The influence of science in Douglas et al.'s (1986) model is limited to the authors' primitive attempts to impose organization on an artful practice, and the authors do not adhere to even one of these scientific components.

A similar problem is presented by the Turvey (1999) model. Like Douglas et al. (1986), Turvey very comprehensively described the kinds of

evidence to be collected. He went even further, to explicitly advocate for reliance on physical evidence over intuition. However, as discussed in chapter 3, the most important conclusions regarding offender characteristics and the relationship between evidence and offender personality ultimately are left to nonscientific professional expertise. These conclusions are therefore not scientific, and Turvey's advocacy for a reliance on scientific evidence (e.g., blood spatters, medical reports) becomes meaningless, because intuition is ultimately used in the synthesis of that evidence.

Keppel and Walter (1999) took a portion of the Douglas et al. (1986) model and unsuccessfully attempted to bring science to a rape–murder typology by improving the clarity of the typological categories. Within the typology, the authors made an effort to operationalize profile characteristics by including physical characteristics of offenders and fairly detailed behavior patterns. Their criticism of other typologies is that although

typologies of murderers have descriptive value, they have failed to provide investigators with the elements necessary for crime scene assessment . . . Although general indicators may apply to a myriad of circumstances, the static descriptors of these types of classification systems only address the obvious. (Keppel & Walter, 1999, p. 419)

It is unfortunate that, despite their effort to bring an element of reliability to their typology by providing greater detail and specificity, it is not clear how Keppel and Walter remedy such criticisms with their own work. As discussed previously, no procedures are provided for how to assess a crime scene or identify relevant information. In addition, the lack of conceptual clarity in their typology, as discussed in previous sections, results in their categories also being a collection of general indicators that could apply to myriad circumstances and people.

In a further attempt to add science to their model, Keppel and Walter (1999) conducted a study of incarcerated men, asserting that the results would “assist law enforcement officers in knowing how common each type of rape–murderer is” (p. 434). Unfortunately, the results of this study are not sufficient to support such an assertion. First, because the study was conducted with a sample of individuals who had been apprehended and convicted using traditional law enforcement methods, there are limits to the degree to which the findings are relevant to profiling, which is typically reserved for cases that are not solved through these methods. Although profiling methods are typically used by law enforcement when traditional methods have failed, the models that have incorporated some kind of data collection have used as their reference groups offenders who have been apprehended. This is a problem because it is likely that offenders who have been caught using traditional law enforcement methods are very different from offenders who are able to evade capture. It is ostensibly this second

group of offenders to which profiling techniques are to be applied, making it likely that techniques that are developed on the basis of information from apprehended offenders will be less successful than expected when used in the field. Second, Keppel and Walter's method of categorizing inmates using their own typology to verify the presence of those categories in the offender population is problematic. There was no control group to allow for offenders to be excluded from one of the four typological categories. No criteria were presented for how raters determined that an offender fit into one group rather than another, and no information was provided about how offenders would be classified if they matched criteria for more than one category. Finally, although Keppel and Walter did not describe their classificatory methods in detail, the percentages demonstrate that every inmate they reviewed was forced into one of the four categories. This procedure not only provides no indication of how well inmates actually matched the category criteria but also does not allow inferences about how representative these categories are of the nonincarcerated offender population. Therefore, the claim that these results are informative with regard to the prevalence of these types within the criminal population is not supported.

Conclusion

An examination of the nonscientific profiling models from a scientific framework reveals that two of the models—Holmes and Holmes's (1996) and Turco's (1990)—contain no science. The other three models—Douglas et al.'s (1986), Keppel and Walter's (1999), and Turvey's (1999)—bring the appearance of science by attempting to organize their concepts, propose untested models, or apply simple statistics to small, nonrandomized data sets. On closer inspection, however, these efforts do not constitute science, and the models do not evidence even one of the components that distinguishes scientific models from nonscientific models. The five nonscientific models of profiling are therefore most appropriately considered from the perspective of art, rather than science.