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FROM

BEHAVIOURAL ANALYSIS OF CRIME: STUDIES IN DAVID CANTER'S INVESTIGATIVE PSYCHOLOGY

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Chapter 1

Investigative Psychology: David Canter's Approach to Studying Criminals and Criminal Action

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It is not possible to capture anything more than a flavour of David Canter's contributions thus far to 20th and 21st century social scientific activity in a single volume. In part this is because he is a prolific scientist, exploring everything from alternative medicine (Canter) to open plan offices, with consultancy work on biscuit and chocolate usage, and the impact of solitary confinement along the way.

The focus in this chapter is on his work in relation to crime and criminals which has dominated his activities for the last quarter of a century. It is no exaggeration to say that he masterminded and actualised the development of a whole new sub-discipline within psychology in a few short years. Working with a team of energetic PhD students, he carried out most of the studies that laid the basis of the new sub-discipline of Investigative Psychology. This early work inspired a first generation of Investigative Psychologists many of whom are now established figures themselves and have contributed to this book.

Others have taken his ideas into a practical context and as a result of what they learnt under his tutelage are now changing the way investigation systems work around the world. David Canter himself eschewed the lure of becoming the police's expert ' profiler', preferring instead to limit his forays into working with the police or lawyers to those cases where the science was being used in new and innovative ways. This has given rise, for example, to ways of assessing the possibility of entrapment by undercover officers both in cases of supplying drugs and pertaining to anti-terrorist legislation . Another instance is his work exploring the veracity of rape allegations.

Perhaps one of his most significant contributions to actual cases in court grew out of his concern at the hold that the Cusum technique was starting to have in legal proceedings, purporting to be able to determine whether the claimed authorship of questioned documents or statements was

trustworthy. Notably, he set about carrying out careful studies of the proposed Cusum procedure () and even managed to get the Crown Prosecution Service to fund his detailed report that resulted in Cusum no longer being allowed as evidence ().

His fascination with the role of psychological analysis of linguistic claims, like Cusum, which have legal implications, that he has called Forensic Psycholinguistics (), reached widespread public notice in his examination of the conviction of Eddie Gilfoyle for the murder of his wife Paula, even though a suicide note clearly written by Paula was found at the time of her death. Once again, his initial interest in the psycholinguistic challenge of determining the validity of the suicide note, which friends of Paula had claimed was dictated by Eddie, led David to set up studies of suicide and associated notes which gave rise to a number of postgraduate dissertations and pieces he wrote directly for *The Times* (see www.timesonline and Canter,).

But the challenge in capturing David Canter's contributions to date is also a product of their eclectic nature and his refusal to follow the perhaps easier, more narrowly-defined route to personal success that is the tradition within academia. Many of those who know him in the investigative context are familiar with his related contributions to the understanding of human behaviour in emergencies from the Bradford City Football Ground fire that gave rise to his contribution to the Poplewell Enquiry and his subsequent book *Football in its Place* (Canter et al). He also contributed to the Taylor Enquiry) that followed the King's Cross underground Fire (Canter and Donald,). More recently he has studied the evacuation of the World Trade Centre on 9/11. But they are surprised to hear that Investigative Psychology is not the first sub-discipline he has been centrally responsible for creating. David Canter's first specialisation in what became known as Environmental Psychology was originally known as Architectural Psychology. Indeed in his early 20's when he was a PhD student in the School of Architecture at Strathclyde University (studying the psychological effects of open plan offices, Canter 1968) he organised the first ever Architectural Psychology conference to be held outside the US (Canter,). This involvement in the exploration of human activity in naturally occurring settings was very influential in leading him into his subsequent study of behaviour in emergencies, which was the launch pad for contributing to police investigations out of which Investigative Psychology grew. (He describes this with his typical bemusement in Canter, as well as in his best selling *Criminal Shadows*, Canter 1994). This intellectual pathway is also documented in Canter (199) and at <http://> find under BPS *oral history interview* ***Plse ADD URL.***

David Canter's Investigative Psychology

From his early work contributing to police investigations and his awareness of how scientific disciplines develop through his experience of the growth of Environmental Psychology, David identified Investigative Psychology as a scientific discipline waiting to happen. He saw the need to bring together the contributions that psychology can make to the investigation of all forms of criminal behaviour through the psychological and social scientific analysis of the actions of offenders as well as the investigative strategies and legal processes (for overviews, see Canter 1993, Canter and Youngs 2009, Canter 2011). From the start he was clear that this encompasses the modelling of patterns of criminal action to facilitate the identification and location of a potential perpetrator through to examinations of detective decision making and interview strategies in an investigation and on to assessments of the credibility and validity of evidence as well as the effective court presentation of the case. It also quickly became apparent that many aspects of legal and investigative processes in civil as well as criminal courts, such as psychological autopsies (Canter,), hostage negotiation and the examination of criminal networks (Canter,), or the forensic psycholinguistics of anonymous letters, were all very appropriately within the Investigative Psychology domain.

Given its power and breadth it is perhaps not surprising, then, that Investigative Psychology represents an increasingly prominent perspective among criminal psychologists. It has reset the focus of forensic psychology over the last two decades, perhaps prompting the Telegraph's description of David Canter as 'the father of forensic psychology in the UK' (). But it is particularly noteworthy that despite its origins deep within scientific, academic activity, Investigative Psychology has also had a significant impact on investigative practice throughout the world, underpinning the development of 'offender profiling' and 'geographical offender profiling', for example. Specialist IP units now exist in countries including Japan, Israel and South Africa. In the US recognition of his contribution to Geographical Offender Profiling has led to national debate about the most effective of these techniques (<http://GP.debate.NationalInstituteofJustice.conf> 2005).

But perhaps the broadest legacy of the rapid emergence of Canter's Investigative Psychology will come from his mapping out of an approach to psychological research, through the development of this discipline, which has relevance far beyond the criminal context. This is an approach to studying people and their actions in their natural context. In conversation David has often referred to this approach as a form of anthropology or even archaeology. By this he means it is a psychological study that looks at what actually happens rather than creating artificial, laboratory situations in which to study behaviour. This is not to confuse his work with the anthropological and archaeological study of cultures past and present. His work is still firmly rooted in the study of individuals. He is also quite comfortable with standard psychological procedures such as questionnaires, provided they deal directly with aspects of people's actual lives, although he has favoured work that examines their actions rather than what they say about them. Further he has always claimed that it is most appropriate for psychologists to attempt to answer questions initially formulated by people who must act on the answers. This eschews issues that are only of interest to other academic psychologists, but does not prevent him from encouraging exploration of fundamental psychological issues that may be relevant to assisting practitioners and policy makers.

However, he has long emphasised that there is a world of difference between applicable research, applied research and consultancy. David sees the need to formulate research questions, methods and results that enables the work to be drawn on by practitioners. Yet he distinguishes this scientific activity from what he calls 'engineering', which is the attempt to build processes and conclusions that can be put directly into use. The overall principles (see Table 1) on which the approach is based are described in Canter (1993), Canter (2000) and Canter and Youngs (2009).

Table 1: Canter's Principles for Research

Adapted from Canter (2000) and Canter (1993)

Principle No.	Canter Research Principle
1	All Research has a Philosophical style
2	Data speaks Theories
3	Theories should be Practical

4	Context provides Meaning
5	Structures Explain
6	Methodologies carry Substantive Assumptions
7	Research Strategies imply Types of Psychological Theory
8	Research Tactics imply Models of Human Beings

It is an approach that seeks to work directly with the material available within any context no matter how limited or challenging that 'data' may be. But although problem-focused it is an approach that looks for solutions in the understanding of human meaning and agency. This comes together in the approaches Canter developed to allow the advanced and complex quantitative modelling of psychologically-rich qualitative material, producing models that give rise to problem-solving tools and solutions. It is illustrated well, for instance, in his development of methods for linking crimes that draws on advanced conceptual models generated by a form of non-metric multidimensional scaling ().

Investigative Psychology, both as the specific crime and investigation-focused discipline and as a style of and approach to doing psychological and social research, emerged as a result of the tension created by Canter's attempts to resolve the inherent contradictions in the particular intellectual tendencies and convictions he held.

David Canter spent of the first six of his early career within a School of Architecture, where the humanist, artistic academic tradition merges with the concrete, mechanical disciplines. Within this context he developed a keen sense of the different contributions of the different forms of academic discipline to the human condition. As he describes it he saw the engineering and technology disciplines that make life comfortable and the arts and humanities that make it worthwhile. His quest to integrate these fundamentally distinct ways of thinking about human beings is an influence that can be seen throughout his work.

David Canter is on the one hand, a conventional empirical scientist yet at the same time, paradoxically, has a strong interest in those aspects of psychology and in particular the significance of human agency that has its origins in the work of William James and George Kelly . He has always argued that, what was known in the 1960's as the 'third stream' of psychology - distinguished from the first stream of psychoanalysis and behaviourist second - a constructivist, humanist approach to looking at human beings, but using what many would regard as highly positivist, empirical procedures, was particularly appropriate for a problem-solving psychology that was firmly rooted in what he refers to as 'real world issues'. Three intellectual strands can be identified, then, within the work of this distinctive psychologist.

A 'Third Stream' perspective on human beings

David Canter's core sympathies sit with the humanist and phenomenological schools. His researches draw on ways of understanding the individual that go back to William James, being concerned with the person's way of making sense of and dealing with the world. In line with Harre () amongst many others, they assign the individual the role of expert on his or her own life. This standpoint was clear in his earliest student project, a study of his correspondence with his friend, film director Mike Leigh.

This concern with understanding the meanings events and objects have for people as the basis for understanding their behaviour is writ large in his long-standing interest in George Kelly's Personal Construct Theory. He has used this approach most recently and particularly notably in studies of the radicalisation processes of terrorists. Although he first started using this procedure in the school of Architecture in the mid-60's. The studies of terrorists that he supervised (e.g. Sarangi and Canter 2012) were some of the first to examine directly the actual psychological processes of convicted terrorists. In the most recent example of this fascinating work, conducted with a senior police officer (Sarangi and Canter, in press) Personal Constructs concerning the significant figures in their lives were elicited from 49 Islamic *Jihadis* in India.

These Personal Construct analyses throw light on the psychological processes of radicalisation of Islamic terrorists and the different pathways to terrorist involvement (). To take just one example as an illustration, one terrorist saw himself as very law abiding at the time he met active terrorist X who saw as a law breaker but he also saw the Police as law breakers. Curiously, the important people in his life include his wife and both Rajeev and Indira Ghandi. Furthermore analysis of this man's Repertory Grid also shows that this individual does not see any changes in his view of himself in relation to his involvement in terrorism. He was actually convicted of helping finance terrorism and declares that he has no commitment to an armed struggle. This challenges the common belief that Jihadi terrorists are simply driven by fundamentalist religious beliefs. It also shows how Canter sees psychological explanations as part of a broader social set of explanations which he brought together in his recent book on the *Faces of Terrorism* (Canter, 2009)

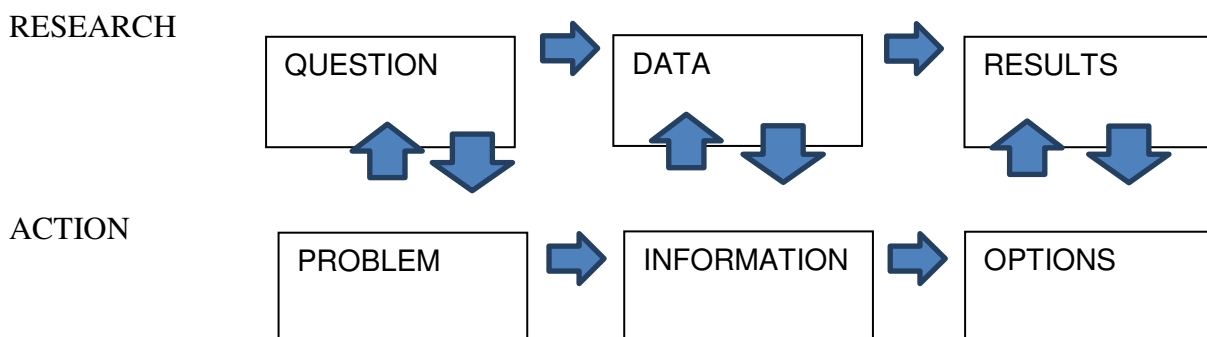
Some may be surprised to learn that a third stream perspective also runs through his Geographical profiling work. For although that is concerned with analysing offender spatial behaviour, it is through understanding the sense individuals make of their environments rather than the more mechanistic, direct route learning models that other researchers have implicitly favoured that he has developed his approach. This distinction between a general understanding of the environment and an unthinking use of it he recognised as reflecting the Hull- Tolman debate within 20th century psychology (see Canter and Youngs 2007). Canter tied offender spatial behaviour into environmental psychological concepts from those outlined in his 'Theory of Place' (Canter 1977;) as well as ideas about mental maps, environmental buffers, scale consistency, domocentricity and magnitude estimation (Canter and Larkin 1993; Canter and Gregory 1994; Canter and Hodge 1998; Canter and Hammond 2006). The much-cited Commuter- Marauder model however was always a heuristic device rather than a psychological theory of offender spatial behaviour. His most recent thinking on the processes underpinning offenders' spatial decisions, described in the popular book *Mapping Murder* as well as the Investigative Psychology text (Canter and Youngs 2009) is opening up considerations of individual differences in this field.

2. A Problem-solving Focus

David Canter's research has been driven by a basic desire to do something useful. The origins of this no doubt lie in his socialist perspective on the world; the belief that everybody's challenges have merit and that the focus should be not on any value judgements but on overcoming those challenges. Canter wants to move away from what he saw as the default academic position whereby problems are defined in terms relevant to moving on a given discipline, meaning that academics end up talking only to each other. He sees such a focus as particularly inappropriate for a psychologist because psychology is fundamentally about how people deal with their world and interact with others. Moreover because human beings are enormously adaptable and responsive to their external environments any research that ignores the context of human activity is doomed to be superficial. Consequently, he remains deeply sceptical of the controlled laboratory experiment, with its reductionist, atomising of dependent and independent variables. He sees that methodological emphasis as destroying the possibility of considering the whole person.

Rather than attempting to control out the real world, Canter's argument is that research should find ways of exploring what people actually do and the processes that underlie those actions. This also allows research to be sufficiently grounded in the concerns of the real world that its results can be integrated directly with action strategies. In this way research is 'investigative' rather than simply 'applied' after the fact. It was his commitment to this framework for psychological contributions to police investigations that has encouraged the development of a new branch of science rather than this potential being used only to give rise to a small number of 'expert profilers'.

Figure 1: Research that is 'investigative': Canter's framework for integrating research and action (adapted from Canter 1993)



In many of his writings, David Canter makes the point that for theoretical as well as ideological reasons, researchers should focus on phenomena of interest to non-psychologists producing work of social value that respects the people it studies. As a result his research has increasingly reflected a willingness to take the next step, to develop ideas of the implications of the work and convert these into procedures that would support decision makers. In private he mentions wryly his early applied research that produced massive documents with plenty of complex statistics that was just shelved by the policy makers who commissioned it, and how he learnt from that the importance of drawing out the implications of the work as simply and directly as possible, if anyone is to take any notice of it.

Two particularly important software tools have emerged as a result. One, Dragnet, a geographical offender profiling tool, that studies have shown can effectively predict the likely home base of a perpetrator from the location of his/her crimes (see Canter 2005; Canter, Coffey, Missen and Huntley). His most recent work in this area is revealing an exciting step-change in the precision of these predictions (Canter et al 2011).

The second software tool is a decision support system for prioritising the likely perpetrator of a given crime and for linking offence series to a common offender. The IOPS version of this tool (see Figure 2), developed for the London Metropolitan police, drew on the 20 years of empirical findings from Canter's research team, to offer investigators the potential to improve their detection rates by very significant margins (see Canter and Youngs 2008).

Figure 2 IOPS

3. An Empirical Emphasis

David Canter has always been an empirical scientist, schooled in the deep traditions of British psychology that emphasise data collection and analysis. For although he has always been interested in the humanist tradition it is only in the last few years in his popular book *Criminal Shadows*, and in very recent publications (Youngs and Canter 2011) that he has published intensely qualitative studies exploring individual cases. Most of his published research has been highly quantitative often working with large data sets. He willingly follows the tradition of being genuinely directed by the results that emerged, even when those results do not accord with established theories or previous findings. On many occasions this has demanded recognising the limitations of existing complex psychological theories. Canter has always been ready to accept the significance of more prosaic concerns such as context and show how these concerns allowed a richer understanding of human behaviour.

This ability to draw more from the data than many of his contemporaries is facilitated by a remarkable proficiency with multivariate statistical approaches particularly the integration of visual outputs from multidimensional scaling technique and the conceptual clarity of the facet theory approach (Canter 1985). Students often despair at his ability to understand in a brief glance the meaning of a computer output that they have spend hours trying to make sense of. Yet they quickly embrace his excitement at the power of multi-dimensional procedures as the contributions to this volume illustrate.

He will argue forcefully whenever given the chance that the facet approach fuses qualitative and quantitative methodologies, allowing individuals and individual variables to be considered directly, as in the best qualitative traditions, whilst still seeing their role in the total picture. David also tells every student not to look for the precision of the sort of replicable results that are expected in laboratory studies, such as those exploring visual illusions or reaction times. Rather they should be aware of the huge variations in people and contexts that will make any general consistency from one sample to the next a real discovery. Indeed, over the years he has caught out a couple of fraudulent students by spotting that their results could not have been so tidy if they had not invented the data themselves.

4. A Style of Research

Perhaps one of David's most iconoclastic comments is that researchers each have a preferred style of doing research. His recognition of this doubtless has its roots in his experience of architecture; in which 'style' is seen as the essence of great design and differences between style a valid source of study. In scientific circles the unwritten assumption is that each study uses the most appropriate methodology for the task at hand. Any individual preferences are supposed to be totally subservient to scientific purity. David challenges this, claiming that there can be a number of appropriate ways of studying psychological phenomena and the one chosen is partly a preference of the particular researcher, probably rooted in his education, experience and resources. Canter has therefore quite openly offered an approach to doing real-world research that he is comfortable with because it

works for him. Hundreds of people who have studied with him have found the approach of value too, so that it has now become an accepted meta- methodology.

Anyone who has worked with 'real-world' data will recognise the challenge of making sense of it and studying it systematically to address those existing problems that are Canter's academic priority. Material from police investigations and court cases or crime scenes, or indeed many of the reviews of emergencies such as the Kings Cross fire or 9/11, to which he contributed does not exist in a form amenable to the average researcher. The now widely used 'Investigative Psychology' meta-method that Canter pioneered sets out an approach to overcoming the challenges at three key stages of the real-world research process. Different aspects and stages of his approach are described by Giles, Lee, Lobato and Salfati in this volume.

Data Harvesting

As a first stage, it advances an approach to harvesting as data material from contexts that were not only not set up as 'experiments' for research but where the material was generated for alternative and often directly conflicting objectives, such as preparing the case for the defence, or personal letters that were never thought to be examined objectively. In his paper on 'Unobtrusive Measures' (Canter and Alison 2004), he argues that the excitement over data sources in psychology that were not influenced by the processes of collecting the data, first articulated by Webb et al (1967) is especially pertinent for the data that is at the heart of investigative psychology, such as crime scene reports, offence and offender locations and offensive letters. Of course these sources have their own biases that need to be taken into account, but they are naturally occurring biases, not distortions introduced by the researcher, as happens when people are given a task to perform.

The value of Canter's approach to research methodology is epitomised in the capability he developed to draw psychological patterns from crimes even though these are activities underpinned by the intent to conceal. This was first set out in the seminal paper with Rupert Heritage on modelling sexual assault (Canter and Heritage 1990).

Data-driven Content Analysis

As a second stage, the Investigative Psychology meta-method, advances an approach to the content analysis of naturally occurring data that has many parallels in other qualitative methodologies, but is perhaps closest to the 'grounded-theory' approach (Glaser and Strauss 1967). David points out that it took about two years to find the appropriate level of analysis for the first paper he published on rape-statements (Canter and Heritage 1990). Working with the police officer assigned to him for this work, Rupert Heritage, they had started with very detailed content categories, such as the arm being grabbed, or a cloth gag being fastened round the victim's mouth. But this generated a very sparse data matrix with very few examples of each behaviour across the sample of cases. Much broader categories, such as 'general aggression' or 'untidy search' could not be utilised with any inter-rater reliability, so they ended up with the mid-level categories that are now illustrated in many publications (Giles et al 2004) and in chapters in this book.

It is apparent that Canter's approach to content analysis of crime scene material and witness statements was influenced by what he had found to be valuable in his earlier work, modelling human actions in buildings on fire (Canter and Heritage 1990). This distinguished it from the very detailed, highly quantitative approach to content analysis that computerised linguists have favoured. It was also compatible with the pointers that FBI agents, notably Hazelwood (Hazelwood et al 1986) were giving at the time as

part of their framework for creating typologies for use in profiling. However, unlike the FBI Canter followed the careful procedures of creating content dictionaries that were checked for reliability.

Qualitative Structural Analysis

The third stage in working with material derived from records and other existing sources is perhaps the most novel aspect of Canter's meta-method. Rather than staying with frequencies or gross group comparisons he set about looking for empirical structures across co-occurrences within the data. This was derived from his early interest in factor analysis, as well as George Kelly's ideas about ways of representing cognitive structures. When studying people's satisfactions with the schools or offices in which they worked, or the prisons in which they were incarcerated, he had carried out multivariate analysis of questionnaires. He had been uncomfortable with the assumptions underlying the ubiquitous principal component analysis and its factor analysis derivatives, so there was something of an epiphany when he met Louis Guttman in Tokyo and learned of Smallest Space Analysis and its related non-metric multidimensional scaling (MDS) procedures.

Up until that point in the mid-1970's MDS had almost entirely been applied to data created for research purposes, usually questionnaires. It was Canter's breakthrough to see the possibility for using this with the qualitative content analysis material derived from police documents. This is such a widespread practice now within Investigative Psychology that it is easy to forget how novel Canter's use of this methodology was when he first applied it.

There was no simple and immediate success in the application but by trial and error he developed a procedure which incorporated such technical innovations as using Jaccard's coefficient that it began to reveal interesting and consistent results. The novelty of this approach is still not appreciated by many people, nor are the details for using the approach effectively fully understood by all who publish using it. This has given rise to some very confused challenges to the consistent results found by Canter, his colleagues and others around the world, following his approach but without any direct contact with him. It is thus a sad reflection on research in this area that people have published papers which have elementary technical mistakes in them, yet make the implicitly libellous, and erroneous claim that only Canter and his close associates can obtain the consistent results that have been widely reported. Sean Hammond's recent study (this volume) is an important clarification on this point.

Models of Human Action and Experience

The fourth stage of Canter's meta-methodology is the representation of the structures that emerge from MDS as models of human action and experiences. The lack of understanding of these models and their derivation is the basis of confused challenges to this work. Some of the criticisms expressed some ignorance of the how Facet Theory informs Canter's use of MDS. This is a 'theory' about how research is most effectively carried out, developed by Guttman (Gratch) fifty years ago but still not widely studied although now clearly articulated in many books (Canter, 1985, Borg...). Those who have used this approach have found it to be very powerful as demonstrated by the hundreds of papers that have been published utilising this framework (see HUD archive.....) .

Canter himself prefers to call what he uses the 'Facet Approach' because it is a way of conceptualising research questions and carrying out data analysis and the interpretation of the results. This seeks consistencies in the relationships between sets of variables. Such consistencies

are interpreted as revealing components of structures that contribute to an understanding of the actions and experiences being considered. This approach has given rise to reliable ways of characterising criminal actions, which have formed the basis for theory development and practical applications.

Emergent Intellectual Principles

A number of core Investigative Psychology principles have emerged as manifestations of Canter's attempts to resolve the paradoxical perspectives that characterise his approach to human beings and how they should be studied. These are set out in detail in the recent major textbook, the first to provide a thorough overview of Investigative Psychology, (Canter and Youngs 2009). Three interesting examples drawn from that book illustrate Canter's readiness to challenge pervasive 'psychological' concepts.

A Challenge to the Concept of Motivation

Although ubiquitous, particularly in the criminal context, the notion of the motive as a simple and direct reason for a given human action is not accepted within Canter's Investigative Psychology.

This challenge to the concept of motivation has its roots in the arguments of George Kelly. Kelly's insight was that explaining what moves people is unnecessary because people are naturally in motion. Rather, he argued, it is the direction of motion that requires explanation. David Canter has caricatured this as the psychological equivalent of Newton's First Law of Motion; the principle that a human being will continue in their normal activity unless and until acted on by some external process.

Canter eschews explorations of specific motives in favour of a narrative perspective that positioned the criminal action within a broader, unfolding storyline that the offender is already pursuing.

Canter's argument is that 'as part of a story or narrative form, motivation and meaning necessarily become the intention to act; the dynamic process that is required to move the drama forward' (Youngs and Canter 2011). His view is that by understanding the narrative we get closer to understanding the action.

The first to apply narrative ideas to criminal action in his semi-autobiographical book, *Criminal Shadows*, (Canter 1994), he emphasises the unfolding continuity of the narrative in shaping human action 'we construct life stories for ourselves. We invent autobiographical narratives in which the central character has some semblance of continuity...The stories we tell...have great power in giving shape and meaning to our lives....Thus narrative encapsulates both the dynamic and the episodic nature of human existence' (1994; p226-228). In *Criminal Shadows*, Canter draws attention to the destructive and multiple, yet limited, versions of the narratives available within our culture that criminals live by. He expands, 'ill-formed narratives ...may be changed dramatically by episodes in which the central character experiences relatively minor mishaps. Perhaps here is the clue to the hidden nature of the narratives that violent offenders live: their dominant narratives are confused and sensitive to episodes that most people would ignore; their plots can be set off course by experiences that their friends and relatives might never notice' (p230). For Canter, it is understanding these narratives that is the key to understanding the patterns of criminal action.

A corollary of this is the consistency hypothesis central to Investigative Psychology. Criminal action is understood not as some displacement activity or cathartic expression but as a continuation of the offender's non-criminal activity. This can be understood as a psychological development of 'Routine Activity Theory'. Instead of focusing only on location and actions in a rather generic sense, he points to consistencies in how offenders deal with others and the world around them. In this way, Canter has always argued that theories of normal, non-criminal behaviour and explanatory frameworks can be applied to the interpretation of offending action.

In his earliest commentaries on the emerging field he conceptualised offending behaviour as a form of interpersonal interaction between the offender and victim, whether that victim was explicit as in most violent crime or implicit as in most property crime (Canter 1989). He was clear that the Investigative Psychology perspective had to be distinct from the clinical perspective that would see offending as an abnormality in some way and from the sociological perspective that neglected individual agency and variation (Canter 1989). This standpoint laid the groundwork for the many subsequent models of offending style based on the assumption of an interpersonal transaction that could be interpreted in 'normal' terms and applied to all forms of offending rather than being limited to the most extreme sexually violent variants. This indeed was the earliest hallmark of his difference from FBI views on profiling. They claimed that profiling was only relevant to bizarre, unusual crimes. From the beginning of Investigative Psychology Canter argued this was nonsense.

One particularly inventive intellectual direction that emerged out of this conceptualisation of offending activity in terms of normal processes was Canter's perspective on organised crime. In 1999, he put forward his theory of Destructive Organisational Psychology. This was based on the idea that the criminal networks responsible for organised crime could be assessed in terms of the same organisational effectiveness criteria as legal business organisations. As he noted, this opens up the possibility of weakening criminal organisations by targeting the very factors that organisational psychologists in the legal environment seek to improve. He explained how illegal organisations could be dealt with by damaging those aspects that psychologists usually help to strengthen including organisational structure, communication networks, employee retention and effective leadership (Canter 1999). This has been seen as such a powerful way of thinking about the investigation and reduction of organised crime that it formed the basis of a major EU funded research project involving police forces from many Northern European countries.

Differentiation as a route to Understanding

An important emphasis within the development of Investigative Psychology has been the model of the variations within phenomena. Canter saw that it was through determining the basis for the differences in people's styles of conducting an activity or approaching a phenomenon that we can understand what that activity or phenomenon is. Yokota provides an interesting illustration of this process in the current volume. Canter traces his interest in distinguishing between people and their activities, instead of the dominant cognitive psychology trend of looking for consistencies across people, to his early studies in school of the development of Darwin's theory of evolution.

Canter was struck by how the five years Darwin spent in his voyage on The Beagle, collecting specimens and puzzling over the differences between species, was crucial to the emergence of the theory of evolution. There is a tradition in psychology that undervalues descriptive studies of what happens and seeks the causal explanations that can emerge from controlled laboratory explanations. But Canter points out that the major scientific theories have all grown out of careful description and categorisation. It is only when the variations between apparently similar phenomena are established

that effective explanations and powerful theories about those phenomena can be developed, whether the phenomenon is cancer, cuisine or criminal behaviour.

This focus on differentiation as a route to understanding phenomena was greatly influenced by Guttman's first and second laws for the social sciences (Gratch). The first laws can be expressed informally as stipulating that if entities that have a common focus are evaluated on a representative sample they will not be negatively correlated. The two most well established first laws that illustrate this principle are those of intelligence and attitudes.

The first law of intelligence declares that any test item that can have a correct or incorrect answer will not be negatively correlated with any other item that has a correct or incorrect possible answer, provided the population as a whole is representatively sampled for the test. So for example across a population intelligence test items that measure ability in maths will be correlated at zero or above with items that measure spatial ability. Guttman claimed that this can be regarded as a law because it has found support in virtually all the studies have tested it.

A possibly more controversial first law that Guttman promulgated (Levy) relates to attitudes. This states that indications of positive valence towards a common object will never be negative, so that a question about belief in God and another about support for religious beliefs would not be negatively correlated. However, this becomes more controversial when actions are included in the indications of positive valence. This would be reflected in the lack of a negative correlation between belief in God and visiting a place of religious worship.

Guttman's second laws identify differentiation within the general relationships that are at the heart of the first laws. So although all intelligence test items will correlate at zero or above there are expected to be higher correlations between those items that have similar content. Thus mathematics items will correlate more highly with each other than they do with purely verbal items. The power of these second laws comes from the identification of the components that distinguish the content domains. This is especially fruitful in the area of attitudes. Many studies have demonstrated that attitudes can take on one three Modes- Thoughts (Cognitions) , Feelings and Actions. This would be illustrated in beliefs about God being more highly correlated with each other (Cognitions) than they are with frequency of church visits (Actions).

Following these ideas central to Guttman's Facet Theory Canter argued that there will be a coherence to an individual's offending actions, across his mode of planning actions and mode of thinking about the crime, his mode of dealing with the victim and related activity and the mode he adopts in actually executing the offence.

Building on these ideas, Canter proposed that there will be themes underlying all the different aspects of an individual's actions, which will be the basis for the differentiation of offending style within criminal behaviour. Out of this he showed the power of one particular structure for understanding the variations in criminal action: the Radex (Canter 2000).

The hypothesis of the Radex is that the variations among any set of criminal actions will have two facets. One, a facet of specificity, moving from the general, shared by all offences and therefore conceptually central, with the specific variants of the actions at the periphery. This really reflects a first law of criminal activity that all criminal actions will have some potential of co-occurring. Or as Canter has expressed it " A person who breaks the law in one domain is likely to do so in another domain". The second facet is a thematic facet that distinguishes between the different qualities of the offences, conceptually radiating around the 'core'. This reflects the second law as Canter

expresses it “ The more similar the domains the more likely is an offender to commit crimes in those domains”. This two facet model combining a quantitative variation in specificity with a qualitative variation in content was called a ‘Radex’ by Guttman (1954) in his first paper on the topic where he argued it was a new form of factor analysis. Since that time it has been found to be a powerful framework for considering such a range of issues as intelligence (), attitudes (), organisational behaviour (), satisfaction with the design of hospital wards (Canter and Kenny,) and many other areas of human activity and experience.

The Radex structure, that has been supported from empirical examination in a wide range of crime types (). Support for this conceptual structure is also found in more general aspects of a crime, equally typical of all criminals. are hypothesised to be at the centre of the Radex, while actions that are more conceptually-specific to the activity form are at the periphery as shown in Figure 3. The first published study to demonstrate the existence of such a radial structure for crime was Canter and Heritage’s (1990) study of rape. Canter and those who have followed his lead have demonstrated the radex structure in many areas of criminal activity () giving rise to the general radex model of criminality illustrated in Figure 3

Figure 3. A General Model for a Radex as Applied to the actions of Criminals. Adapted from Canter (2000)

The Radex model is a refutable hypothesis because it is possible that distinct sub-groups of actions could occur in any class of crime which, whilst frequent, were typically associated with distinct sets of rarer actions. In such a case, the concentric circles that make up the Radex would not be found. Canter (2000) discusses the usefulness of the Radex in relation to his 1998 study of paedophilia: ‘...the radex model ... indicate(s) the salient aspects... For although.. the three activities of “initial force used by offender”, “the offender was recorded to have carried out the offence only once” and “the offender tried to desensitise the victim to the offence” all occurred in about 40% of the 97 cases they studied, the distribution in the MDS plot shows that they tended to occur in very different crimes’.

As with the SSA methodology there have been confused challenges to the ubiquity of the radex model (Taylor). These challenges claim that it is an artefact of the use of Jaccard’s coefficient. However, as Canter et al (2012) show this view is based on a number of errors. Perhaps the most fundamental is shown by Hammond in the present volume where he deliberately creates a coefficient (that he names after Canter!) that avoids the putative distortions of Jaccard’s yet shows that when applying this coefficient the radex is still found. Another demonstration of the confusion in the criticism of the radex is that, unlike in the random numbers approach used in the critique when real data is used the radex is not always found if there is something in the data that does not fit the first law requirement that it is not being tested on a biased sample. Eccentric radexes are found from time to time, which make theoretical sense, although being at variance with the claims that the radex is an artificial creation.

This debate on the technicalities of the research carried out in Investigative Psychology does demonstrate how rapidly the field has matured. There are now schools of thought within the field

and a level of methodological development that can leave behind those who have come to it recently without a full understanding of what is involved.

Psychological Bases of Differentiation

While developing these advances to our understanding of the structure of criminal differentiation, David Canter has also driven thinking on the psychological basis of the variations in offending style that have now emerged in the large number of studies. Recently, he has developed an advanced psychological framework for differentiation, the Narrative Action System model, that he has shown can be applied not only to the full range of interpersonal crimes, from stalking, rape to murder but also to property-focused crimes from robbery and burglary to arson (Canter and Youngs 2009). This model is a particularly rich one, integrating three of the different frameworks that have found support during the development of IP.

The first psychological framework for differentiation was advanced in relation to violent interpersonal crime as part of the general narrative perspective offered by Canter in *Criminal Shadows* (1994) and Canter and Youngs (2012). The Victim Role model described three proposed roles assigned within the narratives of the offenders to their victim: The Victim as Object Role, the Victim as Vehicle Role and the Victim as Person Role. Canter proposed that the roles assigned to victims were a product of variations in the empathy felt by the offender for his victim and the degree of control maintained over the victim.

The first, Object role, Canter describes in the following terms: the 'victims are little more than animate objects... In the assault the victims were not expected to play any active part at all.' (p255). In the second Vehicle role, he notes 'these rapists and murderers assign their victim a more active and sometimes more brutal role in the violent drama'. As Canter explains, these offenders are 'forcing their victims to carry some of the meanings the men had derived from their contact with other women'. The third, Person role is one where the 'role given to the victim is closest to normal relationships in which the woman is a person who has thoughts and feelings' but this 'normality' provides the context for coercion, manipulation and abuse. The Victim Role framework has been applied to the patterns derived in studies of rape, serial murder and sexual abuse (Canter 1994; Canter and Youngs In press, Hodge 1998, Almond, this volume) as well as other studies in press.

A second framework that has also proved useful in interpreting the empirical patterns emerging in many of the studies was an Action Systems framework. The Action System model is derived from Parson's (cf. Parsons and Shills, 1951) exploration of socio-psychological systems. From this, Shye (1985) developed a more straightforward conceptualisation of behavioural actions systems that was directly open to empirical test. The model posited four modes of operation that were possible for any 'system', as Fritzon and Yokota both illustrate in their studies in this volume. Canter and Fritzon (1998) describe these in relation to arson:

Please add in descriptions of arson action system modes from canter and fritz on 1998

Canter's third psychological framework for differentiation drew on narrative themes, that he advanced as the destructive variants of the archetypal stories identified in literary criticism and most notably the work of Norbert Frye (Canter, Kaouri and Ioannou 2003, Canter and Youngs 2009;

2012; Youngs and Canter 2011; 2012). Showing support for these themes in interviews with offenders, Youngs and Canter (2011) summarise the 4 narrative styles of offending in the following way:

The Romantic Quest narrative. The person who sees himself as powerful and for whom one or more other people and their reactions are a significant part of his narrative, may be thought of as acting out a Revengeful Mission role.

The Tragedy Narrative. By contrast the criminal who feels he is being pushed by the fates, having little control over his actions and little concern for others plays the role of the Tragic Hero, within a general narrative of Tragedy.

The Adventure Narrative. The offender who lives out a narrative in which he is in control, enjoying his power and for whom others are irrelevant, acts the role of Professional, as part of an Adventure narrative

The Irony narrative. Here the offender sees himself as having no power and being alienated from others who are nonetheless significant to him, so seeing himself as a Victim within this Irony narrative.

The integration of these 3 theories of differentiation, the Victim Role, Action System and Narrative perspectives, has allowed the development of a generic framework for the differentiation of criminality (see Canter and Youngs 2009). To date this Narrative Action System (NAS) model appears to offer a basis for understanding offending styles across all forms of criminality.

The Development of a Discipline : David Canter's Investigative Psychology

This eclectic combination of particular intellectual stands, research preferences and scientific tastes has proved remarkably fruitful and has inspired a generation of research and researchers. Under this vision, a thriving area of psychological activity has developed with remarkable rapidity. There are now vast literatures on geographical offender profiling, linking crimes, investigative interviewing, determining the veracity of all sorts of investigation information, on criminal differentiation and offence modelling and, of course, on drawing inferences about offender characteristics from their offending style.

Indeed the ideas that began in David Canter's office at Surrey University some 25 years ago, have now become so widespread that many people do not realise that what they are doing in their research is Investigative Psychology. Yet just a few short years ago such studies would not have been thought of. Certainly, few would have had any notion of how to conduct such studies, how to move, for example, from crime scene photographs to psychological models of offence behaviour and offenders, or how to consider the detailed case characteristics to distinguish false and genuine allegations, or linked and unlinked offences.

Of course, it has not taken police and other investigative bodies long to recognise and seek to harness the applied potential of the growing body of IP knowledge. This science is now put into direct operational use around the world. From the military to commercial bodies and the courts as well as the police and crime analysis communities, IP is put into practice every day. The discipline David Canter conceived and has driven has unquestionably saved lives and brought justice in thousands and thousands of cases across the globe.

Clearly, this all raises the question as to the personal attributes and character of the man without whom none of this would have happened. To conceptualise a new strand of academic thinking clearly requires someone of unusual intellectual capacity. Few who have met David are left in any

doubt about the incisiveness and clarity of his thinking. The subtlety and sophistication are perhaps less obvious but underpin an ability to understand the reality of human nature that distinguishes him from many scientists. And an instinct for research that cannot be explained by reference to a rare methodological and analytical prowess. He can just see what the issue is and how to study it.

The personal qualities that have facilitated this remarkable contribution to academic thought, as well as to society more generally, include a liveliness, endless curiosity and wit that attenuate (mostly!) the uncompromisingly high standards he insists upon. As students down the years frequently attest, Professor Canter is nothing if not entertaining! Importantly, perhaps, he has an inability to understand the role pettiness or jealousies can play in professional life and an absolute intolerance of pomposity in any of its forms. Early in his exposure to it, David developed a distaste for the sensationalist aspects of the field that has been central in focusing him on developing the science.

To the alarm of some (but amusement of those who know him better), David Canter doesn't just have the courage to be controversial, he relishes it. He has a willingness to stand alone if necessary yet a genuine desire to share that has allowed many of his former students to carve out successful careers. Indeed the chapters in this book are all written by people who have benefited from David Canter's tutelage and generous support. This continues to this day and indeed his current research team is probably the largest and most energetic yet. Many of us look forward to the next advances in this remarkable career.

References