

Working on Crime: individual and team management of knowledge for decision making in the initial investigative process

by

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Abstract

Every police agency needs to know how a productive environment for investigators working on crime, based on an effective investigative knowledge-management system, may best be provided. In order to contribute understanding for that purpose, this research examines three strands of the theme of working on crime that are entailed in the initial stages of an enquiry: the nature of the investigative process; investigative teamwork, and the individual and team management of knowledge.

It is contended that the initial investigative process requires speedy and effective use of knowledge from four main sources: from objects and scenes, from people, from investigators' own experience, and from knowledge-management systems. The management of this knowledge for decision making in the initial stages of a police investigation of a crime is essentially a process of intuitive pattern-making ahead of verification. It is both internalised and manifest, and sited within the prevailing culture, undertaken by an individual investigator upon the explicit, implicit and unknown facts available to him or her, thus creating a continuing, unselfconscious, productive interplay between the skills of one and the complexity of the other. This process takes place within a subtle and multi-layered environment, the 'investigative entity'. In order to advance understanding of the process in its environment, it was necessary first to conceptualise a new model of this 'investigative entity'. The model illuminates the complexity of the investigative task, shows the centrality of individual investigators, and their skills, to the process of investigation, and emphasises the interrogative interface of the practitioner and the decision making process with the architecture of knowledge.

Classical theories and practices of decision making are discussed, amplified with material on the intuition and analytic processes which underlie the model, the particular need for knowledge in investigative decision making, and the role of investigative knowledge-management systems as tools for intuition. The role played by official knowledge-management systems in the investigative entity is delineated, but emphasis centres on the power and utility of the individual investigator's tacit knowledge and skills.

However, investigative work requires that investigators must often work in teams, where for success, a supportive culture for individuals' intuitive decision making needs to be provided. The thesis examines ways in which investigative teams may be viewed, and establishes a list of criteria for identifying the nature of investigative teams.

The New Zealand Police provides the locus for examining the potency and relevance of the investigative entity model, both for individual investigators and for teams, and the actual use of police knowledge-management systems by investigators. Through interviews, observation and discussion a picture takes shape of investigators managing knowledge, both as vigorously competent individuals, and in concert with others. This empirical vignette sheds light on how investigative decision making in the initial stages of an incident takes place in practice.

To conclude, guidelines for providing the optimal conditions and knowledge-management systems for investigators are suggested, with the responsibility for doing so laid upon the agency and the government.

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* An enlarged copy of Figure 2 is in a pocket inside the back cover of the printed thesis

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Chapter One

Introduction: the background to the research

1.1 The origins of my research interest

The present research has grown out of my many years working with the New Zealand Police and my longstanding fascination with how police make decisions when tackling crimes.

This interest in criminal investigation began shortly after my arrival at the New Zealand Police Training College in 1974. I had long been interested in cognitive processes and group behaviour and was an experienced teacher, but now I was entering a world of which I had no previous knowledge. I found that the three-month basic recruit curriculum was divided into separate areas – study of the laws which police were required to administer; police practice; physical training; typing, driving and firearms skills. All other topics, such as communication skills, police history, ethics, statistics and basic elements of social sciences, were bundled into a subject called ‘general studies’, which was taught by civilians. After completing the basic course and in-service modules, those who wished to become detectives faced years of general police duties before they could be selected for specialist training.

Each section of recruits or cadets was assigned a tutelary police sergeant, who invariably had no teaching or tertiary qualifications, but whose classroom examples and anecdotes about police work and stressing of desired personal qualities had a strong influence on the behaviour of his¹ trainees.

There was no area specifically called ‘investigation’. Whatever each of these sergeants envisaged the investigative task to be, and what he personally thought to be its importance relative to the associated police tasks of maintaining law, order and public safety in the community, was the concept transmitted to his trainees.

However, many of the ‘war stories’ and tales of successful policing told by the sergeants to their trainees evinced not just good following of routine procedures, but

¹ In writing this thesis, a ticklish point had to be decided. Notwithstanding Dame Margaret Bazley’s assertion (Bazley, 2007) that the New Zealand Police is a male-oriented culture, and the fact that both male and female investigators and police managers contributed their time and information to the project, the pronoun ‘he’ is used as a convenient term to represent any investigator: it has no specific gender-related connotations.

examples of lateral thinking, and sometimes, of making inexplicable but successful decisions on the basis of what could only be called hunches. The use of initiative in dealing with problematic situations was particularly stressed.

I was interested in this emphasis on hunches and intuition and ‘feelings that something was wrong’ that pervaded the cautionary tales told in the classroom and staffroom; they did not suggest to me something ‘eerie’, but merely uncredited examples of using abductive insight in problem solving.

A second element of the classroom process to attract my attention was the acculturation to the police service that was taking place. Underlying the overt syllabus was a hidden curriculum, a moulding process that emphasised conformity of dress, behaviour and attitudes; loyalty; cooperation; and self-discipline; there was an emphasis that competence in carrying out police tasks, and the individual’s own safety, depended on teamwork and communication within a common culture (Gordon, 1986).

Intrigued by the compartmentalisation of the course and my suspicion that the hidden curriculum was of more importance to both instructor and trainee than the copious lesson notes, I began systematically to explore the history, purpose and practice of police training, starting with the premise that policing was a service, and that training for a service might require specific elements that differentiated it from other forms of training. As Dwain Willingham says, ‘We cannot provide first-class service to others by reading out of policy and procedure manuals that tell people how to do things “right”’ (quoted in Shelton, 1999, p xv).

On the one hand, there was little literature on the topic to aid me; material from training courses around the world seemed to be based on written modules similar to New Zealand’s. On the other hand, some of the new writing about the politics of policing (Goldstein, 1977; Mark, 1977; Bittner, 1970; Bordua, 1967; et al) opened up avenues for exploration that were both salutary and stimulating, suggesting that the tasks and routines of policing should be seen inside the wider context of the society and culture within which they were performed. Some of my studies resulted in my writing books on police history and training, some in further academic

qualifications, some in devising new ways of learning and testing, some in establishing a counselling and coaching service for police trainees, but my focus was always on the requirements of the police task and acceptable and effective ways in which it could be carried out.

As I was carrying out my independent study programme and writing, the police organisation also turned attention to the curriculum and training of recruits. The preparation for the new Police College at Porirua in 1981 provided an opportunity for the staff to examine the curriculum in depth and attempt to integrate the separate elements of the recruit course. A seven-step procedure, 'CAWSIPO', was devised, to teach recruits to deal methodically with any presenting incident. CAWSIPO identifies the aspect of an incident by which it first comes to police notice, e.g., through a complainant, a scene of crime or an offender, and suggests five key questions to ask to establish the facts and their interconnectedness. The emphasis was thus on equipping every officer for the task of investigation, by finding information and making decisions. In hindsight, it is evident that CAWSIPO inaugurated a new emphasis by the New Zealand Police on knowledge management in the investigative process, well ahead of the introduction of computer-based systems.

As part of the transition to the new curriculum, the basic general studies programme for trainees was being expanded as a result of demands from the public for more police training in aspects of race relations, handling domestic disputes, drug and alcohol problems, and the investigation of rape. The reading, extra qualifications and research necessary to design a relevant programme made me focus also on the nature of police work. The questions that began to form were these: What exactly is the investigative task? What are the social/cultural/legal/political factors that influence how it may be conducted and what its boundaries may be? How are investigative decisions made? What form of organisation best suits the practitioners? What knowledge management systems need to be provided? How might policy be devised? Only when these questions were answered might one be equipped to consider how practitioners should be trained to carry out the task; my attention changed therefore from a focus on an end product, training, to the nature of the policing task itself.

From my years of reading, discussing, musing, teaching and writing now evolved a notion that the investigation of crime was not just a series of legally and socially sanctioned tasks, but a complex 'investigative entity', centred on the decision-making skills of the individual investigator, which could be modelled in a way not previously devised. If such a model could be conceptualised, I would have a suitable framework for the further exploration of the policing task, which could lead to useful information for police managers. Allied to this was a concern about how individual investigators shared both explicit and tacit knowledge, and communicated their hunches. Finally, I saw that the practical connection with these two exploratory questions fell in the domain of knowledge management. These points of focus came together in the project on which I was now embarking, a formal exploration of the moment when an investigator receives the first intimation of an incident or crisis, and the first decisions have to be made.

In Chapter Two I elaborate my research problem and my design for the present study. However, it is appropriate first to provide an overview of the locus, the New Zealand Police.

1.2 The New Zealand Police as a locus of study

The New Zealand Police organisation offered an interesting locus for elaborating my investigative entity model and pursuing research with it. The New Zealand Police is a national police service, run virtually as a government department (Palmer and Palmer, 2004) free of elected officers and political patronage. There are about 11,000 staff, both sworn and non-sworn, to serve a population of 4.35 million by fulfilling a wide range of law, order and safety functions. However, it resembles no other government department. For many years throughout the twentieth century the administration of the New Zealand Police, including the training section, was conducted by people who had once walked the beat as uniformed police and had no academic qualifications, but who had proved to be adept administrators. A series of competent commissioners, who enjoyed easy rapport with the incumbent Ministers of Police and the government of the day, maintained the autonomy of the police from close bureaucratic control without losing their grasp on funding and resources.

Over the years, the New Zealand Police has chosen to follow one specific policing model. About forty years ago the model was a 'policing by objectives' model. Currently, after a period under the 'community-oriented policing' model, the model is the 'intelligence-led' model. These models have not been indigenous, but have represented adherence to models from other reasonably similar cultures overseas.

However, at the beginning of the millennium the New Zealand Police was facing the need for substantial change in its structure, policies and practices to meet the demands of a changing society (New Zealand Police, 2000).

The first matter that needed attention was the implementation of the Policing 2000 programme designed over the previous five years for the realignment of the organisation into a more modern management structure, with clarification of the relationships both between the Government and the Commissioner and between the police and their public, and an emphasis on a more transparent policy-making process.

The second major thrust needed was attention to knowledge management. A need for advice about a crime-investigation knowledge-management system had early been identified in a report by Price Waterhouse to the Police in 1991, which stated that the scope of the initial information system planning by the New Zealand Police had been defined only as 'intelligence within the police', and that the result was an emphasis on having an 'information' system rather than an 'intelligence' system (New Zealand Police, 1991). They noted also that changes in policy such as the shift to 'community policing', changes in organisational structure such as the merger with the Ministry of Transport, and significant legislative changes relating to data privacy, had not been reflected in the background information and documentation provided for the designers of the system. By 2000, there was clearly a need to fix the inefficiencies resulting from the obsolescence of the existing police computer-assisted knowledge-management systems and the failure of ambitious and expensive attempts to remedy them (New Zealand Police, 2000; O'Keefe, 2000).

Revised management structures and improved knowledge management were cast in terms of the overall priority to create a more open police culture, a culture where change was not resisted, but accepted as the cost of maintaining a dynamic organisation enjoying full public confidence. Even as my research got underway, the need for a changed police culture was reinforced by the establishment in 2004 of a Commission of Enquiry into Police Conduct, to investigate allegations of sexual misconduct by several members of police. It was necessary that the police hierarchy address these concerns, and a new Commissioner and cadre of police managers, better educated than before, and more attuned to the information demands of a modern society, stood ready to tackle the task.

At the same time, the long-standing Police Act was to be thoroughly explored, aiming for the widest possible community discussion, in the hope of establishing ‘a statement of the principles that underpin policing in New Zealand; and an explicit commitment to police in a way that is appropriate for New Zealand (Discussion paper for the Police Act Review, 2007).

Eventually, after much public and internal discussion considering what the New Zealand public expected its police to do, the new Policing Act of 2008 set out the following functions:

- keeping the peace;
- maintaining public safety;
- law enforcement;
- crime prevention;
- community support and assistance;
- national security;
- participation in policing activities outside New Zealand; and
- emergency management.

Contemporaneously with this discussion of what the New Zealand Police should do and how they should do it came the report in 2007 of the Commission of Enquiry into Police Conduct. In it the Commissioner, Dame Margaret Bazley, isolated four factors that were common in the existing police culture and that she saw as

detrimental: overly strong bonding among colleagues, a male-oriented culture, lax attitudes towards the use of alcohol and dual standards with respect to on-duty and off-duty behaviour (Bazley, 2007). She felt that if public confidence in the police were to continue, all individual officers must demonstrate high standards of ethical behaviour; the corollary was that police management must maintain a culture that supported these standards. Furthermore, with the help of experts she laid down recommendations for what changes in the police culture needed to be made, and how progress to achieve them was to be audited.

With the traditional ways of working together on investigation of crime decried by Bazley for creating a dysfunctional police culture, police interest was firmly on exploring alternative ways of working collectively. What was needed was an organisational structure that would enable functions to be carried out efficiently and effectively. If the traditional ways of working together on investigation of crime had created the dysfunctional police culture, then there must be an exploration of alternative ways of working collectively.

The redefined functions and a new way of working together needed to be complemented by a knowledge-management system uniquely geared to the performance of the identified police tasks. (New Zealand Police, 2005). Though this system would cover policy making and administration, primary importance was to be given to the traditional police tasks of crime detection and prevention.

Interests within the Police aligned with mine: interest in the police task, which was being defined; in the teamwork within the culture, which was under scrutiny, and in the provision of knowledge-management systems, which were needed to supplement the new intelligence-led model of policing.

For continuity with my background experience and long interest in the police task, to ensure my research met a clear need, and to enable access, I had early discussions with Police staff. These discussions contributed to a refined focus for the project. During conversations with the head of the Research and Evaluation Unit I picked up several pieces of information that seemed to tie in with what I wanted to explore. The first was that the Police were concerned about how their existing knowledge

management systems could fit into the ‘intelligence-led’ model of policing now in vogue. Secondly, there was a concern about the general lack of information within and without the police about how the Criminal Investigation Branch in general functioned, and how an investigative team worked. The staff had heard of the concept of groups working as communities of practice, yet with the exception of some work in The Netherlands (de Laat, 2001; de Laat and Broer, 2004), there was a dearth of literature on how police investigative teams might work in this way.

Finally, I was aware that my proposed research might well accord with some of the concerns being addressed by the revision of the Police Act. The alignment of my interests with current development in the Police, I believe contributed to the terms of my research agreement with the Police, which granted me generous access.

From the beginning of the project the support of the New Zealand police hierarchy was invaluable. In my view, they had accepted responsibility for making the needed changes in their organisation and culture and were working with project teams through the consultation processes, restructuring and policy making, but they were also interested in the underlying philosophy and scholarly framework for their endeavours. From early discussions and wide reading about police organisational structures, investigative methods and knowledge-management systems I became confident that using the New Zealand police as a locus for the research would not limit the universal utility and applicability of any knowledge gained.

Throughout the subsequent years of research, as well as the structured interviews in the case study, I partook of many informal discussions and spontaneous conversations about the police task with members at all levels in the police hierarchy, which provided both useful information and a window on police opinion. Three words were universally used: ‘service’, ‘professionalism’, and ‘ethics’, but the next most commonly used was a variant on the word ‘intuition’ or ‘feeling’.

In the next chapter, I detail the research that followed, oriented by the overall question signalled in my title, namely, ‘What is required for individual and team management of knowledge for decision making in the initial investigative process?’

Chapter Two

Development of the research problem, research design, methodology and methods

Overview

In this chapter the exploration of the research problem, and the designing of the research questions is outlined, and the theoretical framework and the choice of methodology and methods is justified. There is an overview of the contents of the thesis and an indication of the nature of the findings.

2.1 Development of the research problem and research questions

My research problem centred on the requirements for individual and team management of knowledge for decision making in the initial investigative process. From my own background, and informed by the current state of knowledge, I had identified a gap in knowledge of these requirements: the New Zealand Police lacked good knowledge about the functioning of their investigation branches and teamwork, and I wanted to know more about investigators' knowledge management. I felt that if the information system provided by the organisation were to be useful to investigators, it should be founded on a deep understanding of who the investigators are, how they make decisions, what information they need, and how they work together: an exploration of the cognitive skills involved in accessing, processing and manipulating, verifying and recording information, with consideration of the possible role of intuition; then an appreciation of the decision making itself. No scholarly research on these aspects of investigation had ever been done in the New Zealand Police, nor did I have knowledge of overseas research in the same area. Moreover, as set out in Chapter One, through my previous experiences and study I had formed a view that addressing my research interest would be facilitated by conceptualising a model of the 'investigative entity'.

Accordingly I isolated three research questions. The first was, 'What is the nature of the investigative entity, and how do individual investigators make their initial decisions within it?' This encapsulated the themes I had already been pondering, on who the investigators are, what qualities they possess, what opportunities and

constraints they face, how they exist and work in their environment and culture, and how they interface with the realm of knowledge and assess the information they receive. There was potential for an answer that shed enlightenment on the investigative process for policymakers, and would have ramifications for the provision of a fruitful and culturally safe environment for investigators.

The second question reflected the concern expressed about the way New Zealand investigators worked together within the police culture, and linked the concept of an individual investigator working within the investigative entity to the working practices of an investigative team: ‘What is the nature of teamwork within the investigative entity?’

With the third question, ‘What should be the qualities of police knowledge-management systems provided for investigators?’, I hoped to contribute to addressing a practical problem that needed to be answered by police agencies.

Because of the lack of existing knowledge, these questions were to be seen as largely exploratory.

2.2 Research design and methodology

Addressing these research questions required a research design in two main parts. The first was to flesh out my ‘investigative entity’ model, elaborating aspects of it. For this, I drew on my previous experience and study, as well as literatures in several fields. Second, I needed a way to explore the usefulness of my model and the elaborated concepts, for which I designed some empirical work with a single branch of the New Zealand Police.

There were several key areas to be explored before the research question could be refined and a theoretical framework for the thesis established:

- the need for a definition of what investigative work is;
- the need to model this process within the police environment;
- the need to examine the decision making required by the model;
- the need to establish the nature of investigative teamwork;

- the need to identify what sort of information is needed to fuel the abductive process in the initial stages of an investigation.

2.2.1 Defining the investigative procedure

The first consideration was the need for a definition of what investigative work is. I began by consulting the head of detective training at the Royal New Zealand Police College, who supplied me with information about investigative work and the current objectives for training. Next came extensive reading about investigation in the comprehensive Police library. After reading in associated fields, I finally arrived at the definition of investigative work which underlies my thesis (explicated in Chapter Four, p 69):

“It is an abductive process, both internalised and manifest, and sited within the prevailing culture, undertaken by an investigator upon the explicit, implicit and unknown facts available to him, thus creating a continuing, unselfconscious, productive interplay between the skills of one and the complexity of the other.”

2.2.2 The need to model this process within the police environment

As this definition might be thought applicable to other types of investigation, the next need was to relate this process to the police environment. As there was so little material available upon which to build, I decided to conceptualise my own model of the investigative entity as it applied to a police agency’s knowledge-management focus.

I was interested in the idea of an ‘architecture of knowledge’ and its dimensions (Polanyi, 1977, Rooney & Schneider, 2005). I particularly benefited from the work of Rooney, and my conversations with him, in establishing the parameters of the architecture of knowledge and as the beginning for my consideration of its interrogative interface.

Since I was convinced of the centrality of the investigator to the model, I needed to explain what the individual investigator started with in terms of training and personal qualities and skills, look at the opportunities and restraints he faces, reflect on the

requirements of his social milieu, cultural practices etc, and focus on how the interface of the architecture of knowledge had to be penetrated by skilful questioning and assessment of the knowledge obtained.

This was adumbrated by my review of the literature, my own observations, my lifelong studies and experience over many years as trainer, administrator, coach, counsellor, colleague and family member of police investigators.

This work came together in the development of an original *Investigative Entity model*. The elements of this were identified as:

- the centrality of the investigator and his skills;
- the specific environment for detective work and the constraints and opportunities this gave the investigator;
- the architecture of knowledge; and
- the interface of the investigator with the architecture of knowledge, particularly the questioning process.

Once the interrelationship between the elements was clarified, it was possible to depict the model in graphic form. This Investigative Entity model, which provides a theoretical foundation for the study by showing the elements and their relationships, is presented graphically and discussed in depth in Chapter Four.

To complete the theoretical framework for the study, I turned to three bodies of literature, briefly described next, and set out in more details in Chapters Five, Six and Seven.

2.2.3 The need to examine the decision making required by the model

The next aspect of elaborating the theoretical framework was the need to examine the decision making required by my model. I began by reviewing the extensive literatures in a range of disciplines bearing on the history and philosophy of decision making; the abductive process; the role of intuition; decision making; and by ruminating on what could be learnt by comparing this process with decision making by artificial intelligence. The necessity of such a wide-ranging review was the

complexity of the investigative decision making portrayed by the model and the need to examine the role of those ‘hunches’ I had identified as a point of interest. The material on decision making by artificial intelligence was to provide a contrast with my model, which focused on the skills of the investigator, and to reflect a trend in police agencies to examine the possibility of finding mechanical systems to replicate or replace the human investigator.

The culmination of this was a depiction of classic decision making as it might apply to investigators working within the investigative entity. This material is laid out in Chapter Five. Its main themes are reading the signs; the history of logic and reasoning; the abductive process; the role of intuition; and a comparison with decision making by artificial intelligence.

2.2.4 The need to establish the nature of investigative teamwork

The second review of the literature was to explore the teamwork involved in investigation.

The model centred on an individual investigator, but investigative work was often conducted by a group of investigators working as a team, so the model needed to be supplemented by including the aspect of teamwork. It was necessary to establish what an investigative team was. Extensive reading led me to consider three aspects of how a team might be designated: as a professional group, as a community of purpose, or as a community of practice. In preparation for practical work in the field I devised from the literature and my own long observation of police teamwork a list of criteria to establish the nature of an investigative team. The work on this is presented in Chapter Six.

2.2.5 The need to identify what sort of information is needed to fuel the abductive process in the initial stages of an investigation

The model and its decision making having been analysed, the next need was to identify what sort of information was needed to fuel the abductive process in the initial stages of an investigation.

Advice about police knowledge-management systems was not easy for me to find or to evaluate. The Price Waterhouse Report had pinpointed the importance of the difference between information and intelligence, and the need to define clearly what the police knowledge-management system was expected to do. While world wide there has been ample information about pragmatic matters such as procedures to be followed when investigating, wide discussion of the legal ramifications of the police task, and attempts at defining a philosophy of policing, little attention has been paid to the role of knowledge management for decision making in the investigative process. I therefore read extensively about universal knowledge management, both in theory and practice, and related the understandings to police knowledge-management systems and the requirements of the model.

There were other aspects of this theoretical material that impinged on the responsibility of governments for the provision of both policy about knowledge-management systems and knowledge resources themselves, and this material was included, as it was relevant to recommendations for action that might arise from the research.

The literature on the need for knowledge in investigative decision making is covered in Chapter Seven, with attention to the types of knowledge entailed; the legal, social and ethical aspects of police knowledge-management systems; monitoring and evaluation; selection and funding; and the nature of responsibility for the provision of knowledge-management systems discussed, with an exemplar of the responsibility for this in the New Zealand Police.

Because the reading of the literature encompassed these five different aspects of the topic, which had become integrated into the Investigative Entity model as a foundation for the thesis, it was impractical to place the usual review of the literature in a single chapter. It was therefore decided to place each element of the literature review in the chapter where it most logically belonged.

2.2.6 The need for empirical testing

To this point in my research, I had worked at the level of developing fine-grained discussions, and linking them to my description of the living investigative entity,

developing for the first time a model suited to the complicated initial investigative decision making, backed by a range of theoretical material and the assumptions and choices I made. Empirical testing was the next stage.

The National Manager, Policy and Planning accepted my definition of the parameters of the project and arranged the necessary entrée to the agency. I was granted access to staff and information sources at Police National Headquarters, where project managers gave freely of their time and took considerable interest in my progress; when it came time to interview practitioners, no restrictions were put by the District Commander on which staff I might approach, nor were my questions vetted. Though adhering strictly to the requirements of the Human Ethics Committee (HEC) of Victoria University of Wellington for the confidential conduct of interviews and use of information obtained from them, I was often urged by individuals to use their names or publish their ideas, giving me a sense that there was no concerted effort to present the police or themselves in a favourable light, but rather to aid any scholarly endeavour that might enlighten themselves and others about the work they were doing. The HEC consent, information sheet and question guide are contained in the Appendices.

The first limitation on my empirical research was the decision to focus on the individual trained detective rather than accept the truism ‘every police member is an investigator’. In the New Zealand Police, detectives had already served several years attending to general duties before undergoing training to refine their investigative skills, and it was assumed that their decision making might be more representative of investigators globally.

I needed to find out how these investigators worked individually and in teams, and how they were using the knowledge-management systems provided for them. Again I had my theoretical framework derived from the literature, my model of how investigation interfaced with the architecture of knowledge, my list of the qualities required of a police knowledge-management system, and criteria for establishing how an investigative team was working.

I considered first the option of making a quantitative study, perhaps by taking a large sample of detectives at the same level but of different years of experience, or making comparative studies of different CIB groups, or different cases. This would need a different research design and might be a natural field for follow-up studies.

However, because I had found so little material already written in my field, I chose to do a pioneer exploratory case study of an appropriate investigative group. This type of qualitative study is explained by Mauch and Birch (1998, p 119) as one where the researcher 'keeps detailed records of events heard, seen, read, felt, or otherwise noticed respecting the topic or situation under scrutiny'. They state that qualitative research tends to deal with small samples and uniqueness, and considers the context of words and events an integral part of the primary data. My training and experience in neurolinguistic programming, transactional analysis and psychodrama seemed to equip me for this kind of close study. I particularly wanted this type of richer, more intensive study so that I could gather data, reflect on it, and clarify my thoughts.

I also became convinced that since a working investigative team involved decision making by people at various levels of the detective hierarchy, and it was to be a pioneer exploratory study, I should choose for a case a group where members worked both individually on cases and collegially as part of a close-knit team, at the stage of the initial comprehension that a crime had been committed that warranted the immediate attention of the police. This would provide me with information on the decision making and management of knowledge within that environment that would impact directly on the triple strands of the research question.

If I wanted to research in depth just such a small, unique group in the New Zealand Police, the most obvious options for study were an existing specialist group (such as an arson squad or fraud squad); a CIB team engaged on a significant crime; or, ideally, a small group that was at the workplace dealing with the initial investigative process.

2.2.6.1 An existing specialist group

I could not find within my chosen locus an available squad with enough members on a permanent basis; when needed for a major enquiry, staff with the requisite skills are called in to supplement the core members.

2.2.6.2 A CIB team engaged on a significant crime

The CIB staff in my area were stretched at that time with an unusually high number of serious crimes, and my presence at the initial investigative stage would have been intrusive. I did not feel I would get the depth and richness of information I required from investigators who were facing a long process of fact-finding and resolution at court level that involved many other people beside themselves.

2.2.6.3 A small group at the workplace dealing with the initial investigative process

Enquiries revealed that such operations groups were widely established in major cities in New Zealand, and met the criterion of investigators making initial decisions in the investigation of crime that I was seeking. I decided to select such a group as my data-collection instrument.

At this point circumstances required me to move from a district where I had easy access to Police National Headquarters, a central police station and three outlying stations with which I was relatively familiar, to a larger district where I was little known. In retrospect this was fortunate – my lack of familiarity with the staff and premises meant I met them de novo, with no inbuilt expectations. This helped considerably with suppressing observer bias and supporting impartiality in the interview process.

After receiving permission from the District Commander for access to his staff, I discussed with the Policing Development Manager my criteria for the selection of a group for the case study. There was an Operations group working out of the central police station and the manager offered it for study. I was further assisted by the officer responsible for detective training, who became a resource for organisational charts, lesson notes, syllabi and clarification of terms and practices in detective work. Details of the locus and the personnel involved are laid out in Chapter Eight.

2.3 Empirical case procedures

Over the course of six months I conducted in-depth interviews with seven members associated with this group, including follow-up interviews with several. I constructed a schema for questioning that would provide both open and closed questions, and allow a measure of flexibility (Appendix 3, p 313), for I did not forget that these were people who interviewed others professionally to establish facts, and that some wariness or manipulation of the interview situation by the interviewee had to be allowed for. They were very familiar with having their conversations recorded and I perceived that my recording techniques held no terrors for them.

I began each interview by establishing rapport, then asking how they came to be a detective. The replies contained both factual information and insight into personality. Then I asked some straightforward questions on the police knowledge-management system and how they used it. I asked for the advantages and drawbacks of present systems and what extra information or systems or access they would like. Once I had this data I encouraged free comment that might lead to further detail.

Then I asked them to choose an incident where they had made decisions in the initial investigative process and tell it to me in their own words. This held interest both because of the information in each narrative, and because of my speculation as to why that particular incident had been chosen.

Finally I asked for their comments on my criteria for identifying the way police investigators worked together and asked whether there might be other aspects I needed to consider.

During the interviews I kept in mind the dimensions of my Investigative Entity model to ensure that information about their decision making at the interface of the architecture of knowledge was reflected in the material being collected; occasionally I used prompts where I needed more information.

This was supplemented by observation to see if there was disparity between their words and the information conveyed by their body language and the inflections of their voice.

In-depth analysis followed on from that:

- I teased out facts about their use of the knowledge-management systems provided for them, including comparing the reports of different participants, and using information I had from Police National Headquarters on what was available.
- I looked for information about how they worked with others in the group, by finding and separately examining such instances in the reports and looking for common themes.
- I analysed the specific incident each had chosen, looking in detail at the decisions involved.
- I looked for subtext, clues as to how they perceived the world, and revelatory metaphor.
- I reconciled what they said with their inflections and their body language clues.
For these last three I used primarily my investigative entity model, to guide me through a series of prompts of the sort of things to look for and consider, and in addition, simply to develop a coherent explanation *de novo*, in the manner of a standard explanation-building case-study method (Blaikie, 2010, pp 70-71).
- I looked to see how the rich information I had fitted with the modelling of the process as depicted in Figure 7 (p 89), The interrogative interface with the architecture of knowledge.

This empirical work is described in Chapters Eight, Nine and Ten.

From this analysis I arrived at the research outcomes described in detail in Chapter Eleven. I was further able to provide some insights about the initial investigative process and make recommendations to policy makers about the provision of police knowledge-management systems and conditions for investigative teamwork.

2.4 Limitations and risks

When conducting this research there were several aspects that needed to be taken into consideration. When researching within a police agency there is a need for discretion and confidentiality. Glimpses of police dealing with offenders, victims and witnesses may inadvertently occur when on police premises; the material in the police knowledge-management system is not intended to be shared with people outside the agency not subject to police protocols and code of conduct; the reputation of the agency is under constant threat and may be vulnerable to misinterpretations by an outsider allowed access to police premises. I appreciated the Police staff's confidence in my discretion when working openly among them as they went about their investigations.

The second is the need to strip oneself of partiality about the purpose and practices of the agency or bias concerning its way of collecting, manipulating and using information in its knowledge management systems. I was careful to manifest no overt signs of approval or disapproval of the loci in which I found myself, the people whom I met or the material being related to me.

2.5 Summary

Wide reading and ruminations about the nature of decision making in the initial investigative process resulted in a research design that incorporated three elements of the research question, 'What is required for individual and team management of knowledge for decision making in the initial investigative process?' From this, I isolated three strands to the proposed research question, these being:

- What is the nature of the investigative entity and how do individual investigators make decisions within it?
- What is the nature of teamwork within the investigative entity?
- What should be the qualities of police knowledge management systems provided for investigators?

The novelty of the topic and the lack of previous research in this area mandated extensive work with the scholarly literature and the use of exploratory case study

methodology. An intensive case study along these lines was conducted within a large New Zealand Police district. The outcomes discerned in a New Zealand operations group may not necessarily be typical of such groups in other cultures, or even of other investigative groups within the New Zealand Police. This pioneer descriptive study, however, developed an original concept and model of the investigative entity, described how individual investigators approach decision making, created a list of criteria for examining the nature of police investigative teams, and explored the qualities required of an investigative knowledge-management system.

Chapter Three

The locus for study: the New Zealand Police

Overview

To key the theoretical framework to the reality of investigative work and provide an information base for the empirical study, an understanding of the New Zealand Police organisation had to be obtained.

The first task was to examine the purpose, tasks, organisational structure and culture of its investigators. The prime source of information on the organisation and its policies was a senior manager from the Criminal Investigation Branch at Police National Headquarters. Access was gained to all relevant policy documents. Once this background information was obtained and analysed, the literature was checked to make sure that New Zealand's investigative procedures and systems were typical of overseas practices.

Next came consideration of the police knowledge-management systems currently available to members, with an emphasis on their quantitative and qualitative aspects – qualities such as sufficiency, suitability, accessibility, speediness, up-to-dateness, directionality and universality. Several in-depth interviews were conducted with the manager of the Corporate Instruments Group, the body charged with overall management of the police's knowledge-management systems. He explained in detail the parameters and progress to date of the Corporate Instruments project, aimed at modernising the way information is provided to members, and clarified how the systems are selected, maintained, evaluated, augmented or replaced, and about relevant laws, regulations and customs attached to their use.

Since the nexus between investigators and the police's knowledge-management systems is enshrined in the 'case', the overt practical manifestation of the investigative entity, there needed to be definition of what a case is, what a case management system should entail, and what difficulties there are within the environment now prevailing in the New Zealand Police. A comprehensive analysis of case management was now being undertaken by the police, and insight and information into this aspect was supplied by the project manager, a highly-qualified

detective superintendent.

3.1 The New Zealand Police

The first important consideration in selecting the New Zealand Police as a locus for study is that it is a national agency with a Police National Headquarters providing oversight of all its activities. As in most countries operating under the Western democratic model of government, the New Zealand Police is an autonomous institution presumed to be devoid of political influence in its operational choices (Palmer & Palmer, 2004). While this notion of both organisational and constabular independence is still taken to be the cornerstone of the New Zealand Police's ability to perform, recent changes in the way in which power is brokered, such as the concept of ministerial responsibility under a Mixed Member Proportional system of political representation, coupled with the increasing importance of policy makers and the administrative arm over the operational area, have led to active questioning of traditional ideas about autonomy, governance and interaction with the public.

The *Strategic Plan to 2010* (New Zealand Police, 2008) outlines a police vision of 'Safer Communities Together' through its mission 'to be a world class police service working in partnership with citizens and communities to prevent crime and road trauma, enhance public safety and maintain law and order'. The stated ideal of 'policing with confidence' expresses a concept of thorough investigations, which will be acted upon by:

- improving forensic and interviewing capability;
- developing and implementing an electronic crime strategy;
- improving the case management approach;
- case screening and prioritising processes; and
- developing effective ways to tackle organised crime (ibid, p 13).

The workload is considerable. New Zealand has a population of only 4.35 million, but each year the New Zealand Police receives 660,000 calls on the 111 emergency call system; answers 1,088,000 non-emergency calls; responds to 440,000 incidents; and investigates 420,000 crimes (figures from *New Zealand Police Statement of Intent 2008/9-2010/11*, 2008). Apart from this statistical measure of outputs, there is

a Customer Satisfaction Survey, which was introduced in 2008 as part of the Service First programme. Its stated aim is ‘monitoring how the public perceives police and the quality of service people receive when interacting with police’ (New Zealand Police, 2009). In 2009, the overall satisfaction with service delivery assessed by this survey was 79%, while 72% of respondents had a full/ quite a lot of trust and confidence in the police.

It is on the response to the annual 420,000 recorded cases of crime that this thesis is more directly focused. Yet curiously, there has never been an agreed definition of what constitutes a ‘case’, other than that ‘case’ is the level at which investigations are assigned to individuals or groups within the police. Matters have been confused by the fact that the operational definition of case is not the same as that used by the National Intelligence Applications system (NIA), which refers to the same concept as a *file*. The latest version of the *National Recording Standard* (New Zealand Police, 2008) provides an interim definition: ‘*Case* refers to the grouping of *files* for the purpose of an investigation, from receipt of call, through to final resolution. A *case* will contain one or more *files*’.

In present practice a case usually begins with a call to the Police, through a 111 emergency number for situations requiring urgent attention, and through the local police station for a non-emergency call. The content of the call is clarified, the situation assessed and the details logged on the National Intelligence Application. In some cases, the only need is for the information to be recorded on the crime-reporting line, in others there is a need to dispatch staff to the scene immediately. Thus the first assessment and prioritisation of a case is done on receipt of a call by a police dispatcher. At the end of each shift in the Communications Centre an examination is made of all cases that have come in to see if further or different action is required. While this process sounds relatively straightforward, difficulties are currently caused by a lack of links between the various communications, dispatch and recording systems. This leads to a natural human desire to persist in time-worn police procedures for recording and action when investigating, rather than trust the system. As Maguire (2000, p 331) wryly points out, there is always a necessary empirical question about intelligence-led policing as to the extent to which changes in day-to-day practice are actually observable at ground level.

The aim of the case-management project currently being undertaken is to provide a seamless process of case management, based on one identifying file number for each case, so that any information or action taken on that case can be tracked from receipt of call to preparation of documents for Court.

3.1.1 The Criminal Investigation Branch

In essence all sworn police staff are regarded as investigators, whether they receive the initial call for service, attend the scene, investigate cases and examine evidence, interview witnesses or prosecute offenders.

However, since its formation as a separate section of police fifty years ago, the Criminal Investigation Branch has been the premier investigation service for the New Zealand Police. During that time the increasing complexity of the task within the investigative entity has initiated the introduction of separate detective training and career opportunities, crime scene examiners, specialist investigators for types of crime, and close links with the Institute of Environmental Science and Research for crime scene analysis, including the use of DNA to link suspects to crimes. Most recently there has been attention to analysis of electronic data in relation to e-crime.

Investigations are undertaken by a wide range of police specialist staff, including the use of serious crime investigators, scene of crime officers (SOCOs) and crime scene attendees (CSA), photographers, fingerprint experts and by analysts employed by the government-owned Environmental and Scientific Research organisation.

The organisational structure for embedding this in the overall Police network is tri-partite, consisting of:

- the Executive, a small, close-knit group centred around the Commissioner of Police, Deputy and Assistant Commissioners, District Commanders and heads of specialist agencies, meeting regularly to discuss policy and both crime-related and administrative issues;

- a series of business groups operating at a national level, such as National Crime, National Intelligence, National Operations, Technology, Human Resources, Policy, Organisational Assurance, Prosecutions; and
- twelve police districts, functional structures under the control of area commanders and individual district commanders, with a staff of frontline investigators, crime managers, business service managers and operations managers interacting to control the day-to-day work of the CIB separate from the district's other duties. The District Crime Manager reports both to the overall District Commander and to the National Crime Manager at Police Headquarters. The capacities of the national intelligence network and the specialist squads based at Police National Headquarters are available to District Crime Managers through a National Crime Service Centre. AMCOS, a cluster of investigative agencies and services, has been formed to do work specifically for the Auckland and South Auckland area, where a third of the country's population lives.

Apart from the internal links between the Criminal Investigation Branch and the rest of the Police, the Police have external partnerships with central government, local government, non-government agencies and international partners, many of which impinge directly on investigative work.

About 10% of total New Zealand Police personnel are in the Criminal Investigation Branch, which is led by the Assistant Commissioner: Operations and the National Crime Manager. Detectives are employed within police districts, with the expectation that they will be used primarily for the investigation of serious crime, though over time their role has expanded. For major investigations, staff from any district can be called to serve where required.

There has never been a definition of just what the New Zealand Police's Criminal Investigation Branch should do. The current development framework for the branch rests on a perception that investigation is not just the traditional task of catching offenders by timely and effective responses, thorough investigations, evidence-based proactive policing and effective resolutions, but is integrated with the overall Police

strategic goal of ‘community reassurance’; that is, both improving the ways victims, witnesses and the community are dealt with, and building more strategic alliances with the government and partner agencies to support investigations. The focus on victims could perhaps be regarded as a political requirement rather than a functional one (*Development Framework for Investigative Services to 2011*). The professional intuition is that it is most productive to concentrate investigative energies on patterns of crime, re-offending, revictimisation and the burgeoning area of cyber-crime, since statistics support a case that the majority of the serious crime in New Zealand is committed by a small core of recidivist offenders.

However, the need for a strategic focus for investigations has been recognised, and a foundation document – a short, succinct ‘developmental framework’ – has been formulated to define where investigation sits strategically within the New Zealand Police.

New Zealand society has undergone changes since the institution of the Criminal Investigation Branch fifty years ago, and new patterns of crime have emerged. The latest police research has identified the main challenges for police in modern society as:

- the speed of globalisation and development of technology which increases the opportunity for crime both nationally and across international borders;
- demographic changes in the community;
- the risk from the increasing use of drugs and alcohol by the community;
- organised and serious crime;
- family violence;
- recidivism; and
- revictimisation.

The New Zealand Police has always been willing to try new models of policing, particularly those that seem to be successful in the United Kingdom. Long inured to the model of ‘community-based policing’, at the beginning of the millennium the Executive added elements of the ‘crime-orientated policing’ model, and particularly focused, since there was the impetus to develop a new computer framework, on

‘intelligence-led policing’. Maguire (2000, p 316) emphasises the following characteristics of the latter two models:

- They are strategic and future-orientated.
- They focus on the identification, analysis and management of persisting and developing problems and risks, rather than reactive investigation of individual crimes.
- They use sophisticated information gathering techniques, computer-based.
- They handle material obtained by covert means and material from questionable sources.
- They accept the cooperation or partnership of other agencies.

Maguire mentions two other aspects – that these models may lead to dealing with crime problems outside the criminal justice and penal systems (for example, the demand in New Zealand for marae-based justice might fall into this category); and that they require a formal, business-based structure for the police organisation.

Tilley (2003) confirms that intelligence-led policing rests on the fact that police already know a great deal about offending patterns, and with information technology can manipulate this knowledge to provide better prevention of crime. He calls this a practical method of policing more smartly, rather than a philosophy of policing (p 321).

The practice of intelligence-led policing arose in 1993 in the United Kingdom out of a report by the United Kingdom Audit Commission, the agency charged with reporting on efficiency and effectiveness in the public sector (John & Maguire, 2007). This document, *Helping with enquiries: tackling crime effectively*, led to the eventual development of the National Intelligence Model (NIM), outlined in the National Criminal Intelligence Service publication (NCIS, 2000). Ideas gained from this publication and extensive observation of the results of the new model influenced the New Zealand Police in the development of their NIA (National Intelligence Application) system.

Critical to success in all the areas highlighted by both the Development Framework policy paper and the Police Association survey is intelligence-gathering, and a staff

of about 400 to 500 people is devoted exclusively to this 'intel' area, and the National Intelligence Application (NIA) knowledge-management system. This is described on the Police's website as 'an in-house developed records management application and is the primary operational policing system supporting the intelligence gathering, investigation and prosecutions functions of the police.' NIA interfaces with other justice sector agencies for the transfer of information about offenders.

There is also a specific, highly secure Criminal Investigation Database (CID) for the management of complex or long-running criminal cases and special operations. Though the database chosen is a commercially available application rather than designed ab initio for the New Zealand Police, it has the virtue of sophisticated entity relationships and excellent text-management capability.

The information gathered from both systems forms a vital resource. However, it is as yet unclear to the developers of policy what their stated desire for 'intelligence-led policing' (Ratcliffe, 2009) means in terms of integrating the information on the databases with the work of the investigator or investigative team on an individual case. As Twining (2003) points out, the value of intelligence analysis lies in its ability to aid in predicting future events in a complex and constantly changing world; if this vast amplification of explicit knowledge is to be helpful to the individual investigator within the investigative entity, the conduits to it must be known, readily available, easy to use and rewarding. This has implications for knowledge-management system design as well as training, communication, leadership and involvement.

Running parallel to intelligence gathering is case management, and there is not yet a programme of work that will provide an 'end-to-end' view of managing cases from receipt of call (the public's usual access to Police services) through to final disposition. Ideally, such a programme would develop a single point of access to police services and link all dimensions of case management, including processes and systems, capability and supporting technology solutions. By avoiding duplication of effort and confusion of files and purposes, it is estimated that paperwork might be reduced to a fifth of the present cumbersome and repetitive procedures.

To do this, like many other organisations, the Police has to face the challenge of changing from the traditional paper-based files and information systems to an electronic base, with the difficulties of huge amounts of information to capture and transform and an overworked staff to be persuaded to accept change. At present there is no tracking system for files, nor any way of quickly searching for common elements or repeat offenders, that would enable patterns of crime to be established and thus lead to prioritisation of workloads. It is interesting to note that some local police areas have developed individualised, informal ways of coping with the deficiencies of the electronic recording and form-generating systems (Correspondence in *Police News*, December 2009, March 2010).

Special attention has been devoted to investigative interviewing, which research shows to be the most fruitful source of information in cases, and a specialist team under the aegis of a senior detective inspector is working on new procedures, based on the British PEACE model (explicated on p 175) and a comprehensive survey of information in this field done by Mary Schollum (Schollum, 2005).

There has for some time been a formal performance assessment scheme for individual police members, but there needed to be assessment of the working environment also. A start was made in 2007 on the first of a series of annual engagement surveys (Police News, December 2007). The survey was intended to provide a benchmark or baseline against which to measure progress over time. It can be used to plan and assess work, improve the working environment for all police staff, provide insights into how services are delivered and identify what can be done.

The current research and development in the investigative area falls under the aegis of the National Crime Manager, who is responsible for the policy, procedures and management of investigation activities. To him report the District Crime Managers, who also report to the District Commanders. Under his control are the National Crime Service Unit, which contains the forensics areas such as fingerprints and DNA, and a Policy and Projects group, with links to Interpol. There is also a National Bureau of Criminal Intelligence, a National Bureau of Investigative Support

for functions such as crime monitoring, and a Technical Support Unit for surveillance. The forensics team of scientific experts such as SOCOs and e-crime specialists is recognised to be at the leading edge of scientific support activities and perhaps the group within the police most entitled to be designated a profession. Each of these areas has total ownership: the group manages its own business, sets priorities, and competes for resources.

3.1.2 New Zealand Police knowledge management systems

There are three main aspects of police work to be covered by New Zealand Police knowledge-management systems:

- the administration of a public service;
- daily police work and special duties and operations; and
- the making, maintenance and evaluation of policy to enable these functions to be carried out.

There is therefore a need, under a system of governance which recognises both the legal obligations and boundaries for a police operating in a western democracy, and the expectations of the public they serve, to communicate orders, instructions, policies, guidelines and practices about these three functions as well as provide information pertinent to performing the task.

Until the mid eighties The New Zealand Police was a traditional police agency, with sworn police officers promoted to administrative and policy-making positions, a relatively small number of civilians in ancillary and specialist positions, and with a predominantly paper-based knowledge management system. There was a limited database on the Wanganui computer, a facility which was used in conjunction with other government departments.

By 1990 the New Zealand Police was faced with the obsolescence of their Wanganui computer, and with a growing call for the civilianisation of the administration so that more trained police could be available for operational duties. Since there were eighteen databases that needed updating or reformulation, the Police Executive Committee decided to expend considerable money on installing a system that was

uniquely suited to police needs: the Integrated National Crime Information System, or INCIS. Such a complex information system for police did not exist anywhere in the world, so a contract for designing one was given to a major computer provider, information technology experts were hired and a police liaison officer appointed. There were deep-lying problems with the project (Justice and Law Reform Committee Report, 2000; O'Keefe, 2000). In essence, the aim was aspirational, rather than realistic, since no comparable system existed. It took a long time for the designer to discover exactly what the client required, leading to costly changes to work already done; the client kept demanding that more and more features be included in the basic design, and that major architectural changes be made part way through the process. Added to this was the problem of integrating the information technology people into the police organisational structure. In spite of well-meant efforts, the primal need of the staff to know management decisions and to be able to interpret them in terms of their effect on their working conditions, both materially and emotionally, did not seem to be completely met (personal communications, 1990-1995). Consequently, although staff were keen to have better information systems, and were invited to participate in the establishment of requirements for the system, they remained aloof from the process.

The abandonment of INCIS gave an opportunity to revamp police information systems into a more manageable and user-friendly form; the reluctance of the government to supply more funds gave an aspect of make-do-and-mend to the process that encouraged ingenious solutions and ensured a very close eye was kept on progress and budget.

A need for more reform and a more integrated approach to knowledge management became apparent in the new millennium, spearheaded by a civilian Deputy Commissioner, Lyn Provost, whose previous experience with government departments gave her a grasp of what needed to be done.

A decision was made by the New Zealand Police in 2005 to call this area 'Corporate Instruments', to form a group to scope the organisation's needs in this area and devise policy and practices to ameliorate an existing system that was very dispersed, poorly integrated and incompletely understood. In particular, there was concern that

essential material and guidelines for practice disseminated to staff by the existing means were not read, were not stored accessibly, were not thoroughly comprehended, and consequently might not be being acted upon. The Corporate Instruments Group was therefore personally empowered by the new Commissioner, Howard Broad, to range widely over the existing systems, formulate policy, make decisions, establish procedures and purchase knowledge management systems. The work of the project team was based on the technology trends identified in the ICT Strategic Plan for 2005/6, which included:

- capacity would increase and unit costs decrease;
- mobile access would mature and uptake would increase;
- *information* management would move to *knowledge* management;
- information would become more secure; and
- integration and interface technologies would bring together disparate systems, with convergence of video, audio, text and numerical data.

It was initially agreed that Police training was not to be included in the project, though it is difficult to envisage a training situation where a knowledge of the department's information resources would not be an integral part of any police procedure being taught, nor any organisation's being unable to show how its personnel was being trained.

Memories of the budget blowout for INCIS generated a mandate that New Zealand Police ICT standards would be adhered to when designing, building, maintaining and replacing systems; new initiatives in the ICT area would be subject to the budget process and approved business cases; all ICT-related purchases, implementations and systems would be managed by one committee, the ITSC. Apart from this necessary eye on the expenditure, the project team was encouraged to find innovative solutions.

By making the brief so wide, the Criminal Investigation Branch's existing intranet, with its knowledge sources, procedures and records, could be subsumed under a system aimed at securing compliance with orders, policy, and guidelines for work practices. This embodiment into a more constrained and monitored milieu has wide

implications for the operation of the branch, which has enjoyed being relatively free to develop its own discrete culture and practices.

An early task for the New Zealand Police Corporate Instruments group was to define their domain and communicate their purpose to the organisation. A definition was arrived at:

Corporate instruments are: all methods used (paper and electronic) to communicate orders, instructions, policies, guidelines and practices to all staff.

The scope of the project was to develop a framework for the integration of New Zealand Police corporate instruments, to review and align General Instructions and all other New Zealand Police corporate instruments within that framework, and develop a managed process and library for all corporate instruments. There were few overseas examples of such a radical change in police knowledge-management systems, but the most successful of these had been the work of the Ontario Provincial Police, whose expertise was made available to the Corporate Instrument Group's facilitator, Inspector Wayne Rodgers.

His initial exploration of his brief found that the existing corporate instruments of the New Zealand Police were an eclectic mixture, falling roughly into two categories: law-related and policy-related.

Law-related corporate instruments relate to the governance of police activities, and are led by the pre-eminent and hallowed source of police directives, General Instructions. These are national instructions issued by the Commissioner and published in a Manual of General Instructions in accordance with section 30 of the Police Act 1958.

General Instructions must meet all of these criteria:

- they are orders or instructions that require absolute compliance and accountability by all members of the New Zealand Police;

- they deal with issues that have been identified as posing a critical risk to the New Zealand Police;
- they do not involve detailed procedures or standards but may require compliance with certain specified procedures and/or standards;
- they are used only when there are no other appropriate corporate instruments; and
- they must be consistent with the Police Act and any regulations under that Act.

These General Instructions had proliferated to an unmanageable state – 1400 were in existence at the time the project started. Most were kept in unwieldy hard copy, but it was not known whether anyone ever checked that staff knew they existed and where to find them; whether they read them, comprehended them or obeyed them.

The General Instructions were supplemented by Commissioner's Circulars, short documents concerning new policy and procedures: widely distributed, but presumably of lesser moment than General Instructions.

There were also District orders, issued by District Commanders and applying only within that district, deemed to 'have legislative elements', though these were not clearly defined.

More attuned to the worker at the interface with the public were the Manuals of Best Practice. There was no general understanding of how mandatory the practices described were, whether they impinged on the vaunted police powers of discretion, whether they had the force of law, or a similar measure of liability to disciplinary action to that implicit in disobedience to General Instructions.

These four demanding corporate instruments were supplemented by a plethora of Memoranda of Understanding; guidelines; revised policy directives; station orders (relative to good management); and Cabinet directives.

Policy-related corporate instruments were a mixed group of Headquarters circulars; policy papers from functional groups such as Human Relations; policy directives; lists of standard operating procedures; letters of agreement; policy guidelines; policy pointers and other material of this ilk.

The project group has already decided on a new structure for essential corporate instruments:

- Law;
- General Instructions, which should be whittled down to a preferred maximum of 50;
- Commissioner's circulars;
- District orders – (though the question of what are appropriate local instructions has to be defined);
- the Police manual, which would consolidate all other instruments. There would be chapters for each aspect of policing, both operational and administrative; the work of the Criminal Investigation branch would presumably be included here;
- A Memorandum of Understanding, enabling police to work with other agencies;
- Letters of agreement with other parties (eg with pawnbrokers about notification of stolen goods).

Training was to be separate from the Police manual.

Having streamlined the areas for consideration, there was to be a focus on on-line delivery. To avoid having to store hard copies, there was a need for 'tracing' software. The Information Technology staff selected the MOSS (Microsoft Office Sharepoint Services) system as a suitable vehicle for this.

More necessary was felt to be a method for stressing the importance of complying with directives, so measures for three instructional information types were evolved:

1. Mandatory compliance, where the material MUST be followed. This would apply to General Instructions, Commissioner's Circulars and District Orders

2. Advisory or general practice material which SHOULD be followed, e.g. the Police Manual of Best Practice
3. Discretionary reference information which MAY be used.

The rationale for this was that the word SHOULD keeps the power of discretion and choice and allows a defence to a charge of not following the directive given.

The work of the Corporate Instruments Group is ongoing. A host of websites and links is being devised, with an emphasis on simple expression and ease of use. There will be one publisher (the Corporate Instruments Group) for all instruments, with an electronic on-line archive enabling users to trace back to previous material and usages, and all business groups will produce their own chapters for the manual. A sign-off process will ensure that the Commissioner himself signs off General Instructions and business instructions.

Regardless of the enormous effort going into ensuring that systems are easy to use and material is well-written and up-to-date, there is still a basic anxiety that overburdened or lazy staff may not use the knowledge management system in the way envisaged. There is a strong drive (based on the Ontario practice) for electronic publishing of critical instructions and a system of testing staff on their comprehension of the content; for example, staff members must open the critical instructions within a specified time period and answer true/false questions. A failure to comprehend or comply will lead to retraining or reprisals.

The enthusiasm, competence, hard labour and goodwill of the Corporate Instrument Group cannot be denied, but a frisson is raised by contemplating the enormous power the group is gathering to itself by taking hegemony of all corporate knowledge.

3.1.3 Knowledge systems for investigative work

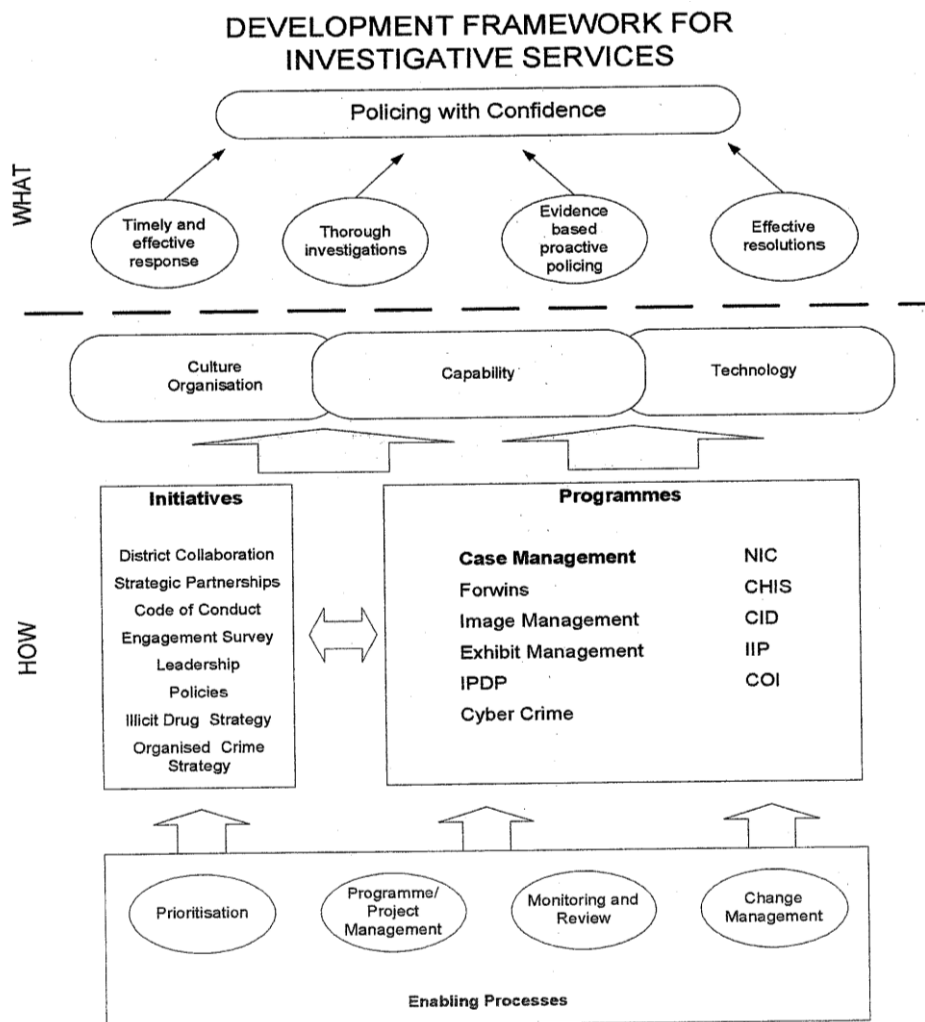
In New Zealand there was traditionally no foundation document around investigations to give a framework that describes where investigation sits within the strategic organisation which the New Zealand Police is trying to achieve. As one Headquarters policy maker says, 'We were struggling to find any documentation in

the New Zealand Police that actually described what a good investigation looked like.’

Through the exertions of the Assistant Manager: Operations and the National Manager: Crime, a *Development Framework for Investigative Services to 2011* was arrived at.

Figure 1 is taken from this policy document.

Figure 1: A development framework for investigative services



It can be seen that the four action elements crucial to Criminal Investigation Branch performance are felt to be:

- a timely and effective response;

- thorough investigations;
- evidence-based proactive policing; and
- effective resolutions.

These are held to be related to the organisational culture, its capability and its technology, which can be expanded and improved through initiatives and programmes.

This limited framework for the development of investigative services in New Zealand meshes comfortably with the Investigative Entity Model (described in Chapter Four) that underpins this thesis. Effective resolutions of crimes are the result of the individual investigator's skill at navigating the architecture of knowledge to obtain, recognise and structure the evidence he needs, and his skill at decision making. The need for timeliness and thoroughness are part of the constraints and opportunities under which he works (outlined on pp 76-79), as are the organisation's culture, its capabilities and the technology (and perhaps particularly the knowledge-management systems). Tellingly, the overall purpose of the framework is felt to be 'policing with confidence', in which the investigator's courage, experience, training and deployment as outlined in the Investigative Entity model play key roles. It is also possible to see this wish for policing with confidence as depending not only on the individual investigator's courage and competence, but on the provision of an environment which is both supportive and conducive to the use of abductive insight.

For an investigator wishing to obtain or pass on information, the police provide opportunities and systems for interfacing: line-ups or daily staff meetings where information can be exchanged; formal crime meetings; telecommunications, radio links, email, CCTV tapes, videoed interviews; special notices; occurrence sheets; national and local bullyboards where information can be transferred succinctly; and Intel reports.

There is an excellent Police intranet for enquiries through internal police systems, such as the Modus Operandi section for information on unusual crimes and methods; the armourer if a firearm is involved; Youth Aid section data if the offender is possibly a juvenile; the Surveillance Section if covert observation is required; a

Property Office to identify abandoned material; a Records Office for details of associated offences. These systems are well-maintained and multiply as a new need for specialist information is identified.

Of particular interest is the latest development from the National E-crime Research and Development group, the 'Environment for Virtualised Evidence' (EVE). This computer application resulted from the E-group's concern at the ever-increasing number of cases where access to electronic evidence and information was needed quickly. EVE is described as an 'intuitive tool' (Stringer, 2009, p 257), because it provides forensically sound electronic evidence in its original form, ready for investigators to make their own use of it, rather than waiting for the E-crime technicians to respond to requests. The development represents an understanding by the research team of what investigators want of a computer application, and the E-group's skill in ensuring the accessibility, ease of use and speed that mark good knowledge management systems. In terms of the Investigative Entity model (page 73), the provision of such an intuitive tool allows the investigator to make his interrogative interface with the architecture of knowledge through a medium that provides verified factual information upon which he can then employ his insight.

Another integral part of the information network is the Police library, from which all written material is accessible through the intranet, print media and microfiche. The Criminal Investigation Branch also has a long-standing interest in the Police Museum, which is a useful source of comparative case material.

From the earliest days of computerisation for the New Zealand Police there has been some sharing of systems with associated justice agencies, but this has been limited in scope and access. Recent discussions between the Police, Justice Department, Corrections Department and Land Transport have worked towards a collaborative model, based on operational pragmatism, a need for efficiency versus the concept of public value, thus leveraging the knowledge and innovation levels for all concerned and leading to a rationalisation of assets (O'Neill, 2008).

In 2009 the new Intercad system linked Police, Fire and Ambulance services, improving communication in emergency situations and aiming to provide a platform

for other areas of shared communication processing and capability (*Police News*, 2009). An interesting offshoot of this has been the establishment of a common 'jargon' list for the three services: previously the acronyms, code names, numbering systems and slang terms peculiar to each service have sometimes proved impenetrable.

While the Criminal Investigation Branch has contact with many international police groups, the strongest international links are with the United Kingdom police, especially in finding out what is new or better practice. In addition, there are constant links with INTERPOL as part of New Zealand's involvement with the detection and prevention of international crime. Policymakers also approve the Canadian police focus on service orientation and are anxious to incorporate this in policy and procedures; a Quality Assurance group has been functioning for a considerable time.

Behind the flurry of activity is a concern to be more efficient and effective about the way information is being used. A Headquarters policy-maker with twenty-five years in investigation sees a difference between the type of people who previously led the organisation, and how society looked then, and how things are now. He feels that members in middle management are more academically focused and have an increasing insight into the business side of policing and what changes need to be made. Beyond that, he endorses the move by the present hierarchy towards community policing and strengthening community networks and inputs into the intelligence. He has spoken to many CIB practitioners in districts around New Zealand and asked them how they manage to organise their daily work: inevitably the answer is a variation of *Well, you know, it is really busy and we do our best with what we've got in front of us. We then put it down because the next hard task is coming through the door for me to deal with it.*

He can well understand the pressure, because it is highly publicised and there are many reasons why the strain and the immediacy of too much work make it difficult for practitioners to reflect on their techniques. A survey in 2006 conducted among 258 investigators in the Auckland Metro districts by the Police Association policy analyst, Dr Anna Duncan, at the request of individuals and groups within the CIB,

identified a key factor: the problem of recruitment and retention of trained investigators. Further probing elicited some possible causes:

- heavy workloads;
- unassigned files;
- shortages of more experienced staff;
- low morale;
- dissatisfaction with pay and allowances; and
- the work-life balance. (New Zealand Police Association, 2006).

A positive aspect of the survey was that around half of the officers who responded rated the support and responses to work issues they received from their CIB management 'above average' or 'excellent'.

One Headquarters policy maker points out that heavy workloads and unassigned files are two areas of dissatisfaction that could easily be addressed through amelioration of the Police knowledge-management system. He propounds a system where a detective sergeant can find out in real time all the files that are on his staff's desks, what they mean, statistics of the suspects or offenders on them, information about the victims and the types of crime – then, since not every incident can be looked at, having a prioritisation tool, to enable work to be structured and prioritized to maximum effect.

He is particularly an advocate for a practical and commonsense approach using quite simple tools and thinking to best effect, but he does not feel the system design is there yet. He gives a graphic example:

We could have people who are constant repetitive offenders – there may be five or six thousand of them in this country – swanning around with warrants to arrest out on them – not only suspects, but with clear evidence that they could be arrested and charged on, such as DNA, all sorts of things, but you literally don't have processes in place to monitor (these people). Now, no-one else is responsible for that, WE are, so why are we not better organised around it? Fundamentally there are things going on in society and if we don't use that information and convert it into problem-solving we're not exactly achieving a lot.

3.2 The nature of executive responsibility in the New Zealand Police

The question arises as to the nature of accountability for a productive and ethical police culture surrounding the provision of effective and efficient knowledge-management systems, and whether the seriousness of the investigative task and the overwhelming importance of the knowledge-management systems to its success denote a moral responsibility more exiguous than the mere meeting of fiscal and organisational criteria (Gregory, 2007).

Somewhere between the legalistic minimal standards for accountability laid down in statutes and job descriptions, the public expectations of exemplary performance, and the demands for impeccable standards or public confessions of culpability and fallings on the sword demanded by the public through the media, lies a concept that could be called 'achievable responsibility'.

This embodies responsibility for the design and implementation of clear, intelligent policy; the creation of a supportive culture; fiscal accountability for financing, supplying and maintaining adequate knowledge-management systems; responsibility for the accuracy and fairness of the knowledge contained within them, their efficient performance and the satisfaction of those using them; personal ethics and commitment to an ideal of public service and the public good, all at a level that might be achieved by a determined and dedicated Commissioner and a skilful Minister working together under the aegis of Cabinet's collective responsibility. Palmer and Palmer detail the role of Cabinet's superordinate power as the right to:

- act as final decision maker on all matters of policy;
- approve the content of all regulations, which are laws made under the authority of statutes;
- decide the content of government bills to be introduced to Parliament;
- make decisions on Government spending;
- coordinate the administration and give orders to the public service on how to carry out administration; and to
- act in ways designed to further its own political survival (Palmer and Palmer, 2004, p 78).

However, the very nature of investigative work demands more of the Government, Cabinet and Commissioner. These are matters of life, death and aberrant behaviour; of probing into the public and private lives of victims, witnesses and criminals; of laying bare predilections and motives of which people may rightly be ashamed; of finding within oneself the courage to examine the most horrific scenes and endure the sights, sounds and smell of people in crisis. A higher level of responsibility and accountability has always been expected of serving police personnel, and this should adumbrate the accountability of their knowledge management providers.

The first factor to be considered when discussing the level of responsibility required is that in the Westminster model of government the national police agency is not a traditional ministry within the civil service. It is rather, in Palmer's terms (2004, p 96), one of those bodies which owe a close allegiance to the Crown but are not legally established as government departments or part of the public service. The basis for this autonomy is the underlying doctrine of constabular independence, developed over the centuries to ensure the separation of the enforcement arm of the law from the dominance of the government of the day and the judicial system.

The British practice has been to have no national agency, but to appoint Chief Constables for regions, allowing them independence in police activities and operations. This right has been tested in the courts and the Court of Appeal. There is a strong tradition of judicial support for the doctrine of constabular independence. The relevant case law, cited by Reiner (1991) is Lord Denning's famous judgement *ex p. Blackburn* [1968] 2 QB 118 "I hold it to be the duty of the Commissioner of Police, as it is of every Chief Constable, to enforce the law of the land...but in all these things he is not the servant of anyone, save of the law itself. No minister of the Crown can tell him that he must or must not keep observation on this place or that; or that he must not prosecute this man or that one, nor can any police authority tell him so...the responsibility for law enforcement lies on him. He is answerable to the law and to the law alone."

If, as further defined by Viscount Simmonds for the British Police, 'a policeman is an officer whose authority is original, not delegated, and exercised at his own

discretion by virtue of his office' (Oliver, 1987), then no master and servant relationship can exist between the constable and the Crown or any other local or judicial authority; his authority cannot be exercised on the responsibility of any person but himself. This raises interesting questions about how the individual is to be deployed and resourced, how and to whom he is accountable, and who should make policy about matters affecting the police, including, in this instance, the provision of knowledge management systems.

The British position has resulted in a struggle for power over policy-making between the Chief Constable, the local police authority, and the Home Office: the Chief Constable can cite his constabular independence and need to be seen as free of political pressure; the local authority has power over funds and resources for policing, and a concern for crime and disorder levels focused on the local community rather than nation-wide events; and the Home Office can threaten with both the possibility of instituting a national police under direct Home Office control if local crime fighting initiatives do not mirror the concerns of the government of the day, and with its power to create regulations, organisational structures or conditions for the governance and funding of police (Reiner, 1991; Rhodes, 1997).

As a national police agency the New Zealand Police is relatively free of this accountability to local authorities, though the lingering preference for 'community policing' impinges on the concept of localised responsibility. While the procedures for the organisation of work and the selection, purchase, maintenance, monitoring and evaluation of knowledge-management systems may be laid down for government departments throughout the world (and indeed for private businesses) in fairly stereotypical form and with a certain emphasis on constraints rather than opportunities, in New Zealand a fair measure of power over the process may still be exercised by the Minister of Police and the executive officer, the Commissioner (Palmer and Palmer, 2004, p 85).

Traditionally every member of the Police, having sworn an oath of office to the Crown, is a servant of the Crown, not of the prevailing government, but until 1989 the position of the Commissioner of Police as operationally independent of the government had not been defined in statute (Butterworth, 2005). During the

discussions preceding the passing of the seminal State Sector Act of 1988, it was decided to exclude the Police from the list of public service departments, defining the agency instead as ‘an instrument of the Crown’ (New Zealand Police, 2007). The position of Commissioner was established as exempt from some provisions of the Act, because of an assumed higher responsibility to the Crown, but in the following year, to clarify the paradox that the Police as a government-funded agency was immune from the accountability of the chief executives of other government agencies for the wise administration of their operations, personnel and resources, a Memorandum of Understanding was entered into between the Commissioner and the Minister of Police (Kay, 1996). By this agreement the two parties would negotiate outputs and performance criteria within the corporate plan, with the hope that by so doing the government’s policies on law and order might be actioned without opposition by an intransigent future commissioner, and that the police’s decisions on their spheres of operation would not be directed or suborned for political ends by a future Minister of Police.

The passing of the Public Finance Act of 1989 further brought the Commissioner’s position under scrutiny. The Act added the concept of performance accountability to the existing financial accountability of heads of Government departments. The Government was now a *purchaser* of each department’s outputs and wanted accountability for the impact on the community of the department’s use of resources in terms of value for money (Versteeg, 2005). The Minister of Police also needed to show that the outcomes of the Police’s strategies and use of financial and other resources represented value for money.

The Police Regulations Act of 1992 allowed for changes in the organisational structure of the police to manage this tension between the wish of the Minister of Police to have a tight hold over policy-making and the financial administration of the agency, and the concern of the Commissioner to retain autonomy over operations and thus also have an abiding interest in policy-making. An opinion by the Solicitor-General in 1993 confirmed that the Commissioner was ‘an independent statutory officer acting with original not ministerially delegated authority in law-enforcement decisions in a particular case’; this extended to his not being subject to policy directions concerning areas of offending or manner of enforcing the law. However,

he *was* subject to decisions of the Minister of Police in regard to resources and administrative matters outside the area of law enforcement. Regulation 3 of the Police Regulations 1992 established that the Commissioner was responsible to the minister of police both for the administration, finances and performance of the Police, and also for ensuring that members of the Police ‘discharge their duties to the government and the public satisfactorily, efficiently and effectively’ (New Zealand Police, 2007).

The compromise (if such it was) was to place under the Commissioner two deputy commissioners: one responsible for operations, the other for resource management. These three would form a Board of Commissioners responsible for the high-level leadership of the Police. The agency had always been administered at its highest levels by men who had walked the beat – now there was no longer an unarguable case that the person in charge of resource management must be a policeman. A further designation of offices saw the inauguration of various assistant commissioners:

- for crime and operations, the traditional prime area for attention by the agency;
- for international services, reflecting the wide role played by the New Zealand Police in international policing and lawkeeping;
- a general manager for human resources;
- a general manager for public affairs; and
- a general manager for Maori, Pacific and ethnic services.

Since this early attempt to separate operational responsibility from financial and resource accountabilities there have been further refinements in both organisational structure and business procedures. The latest Annual Report from the New Zealand Police (2009) reveals a slick, detailed account of the agency’s activities in proper public management terms.

The State Sector Act of 1988 included in its definition of the responsibilities of chief executives the tendering of advice to their minister, but until the passing of the new Policing Act in 2008 there was no legislative requirement for the Commissioner of Police to tender advice to the Minister of Police. As well, there had never been any

clear definition of which decisions could be made independently by the Commissioner and which could be directed by the Minister (New Zealand Police, 2007).

No consideration of responsibilities can be made without reference to the principles and functions that define a police agency. Traditional guidelines for framing the principles of policing a democratic society were established in the United Kingdom in 1829, when the first Commissioners, Rowan and Mayne, drew up aims for the new London Metropolitan Police. The first principle stated that the Police were to prevent crime and disorder, as an alternative to their repression by military force and severity of legal punishment.

This arose from the two main sources that fuelled the demand for a new type of policing. The first was public outrage at a situation where ex-servicemen from the Napoleonic Wars protesting at a public meeting about their dire conditions were fired upon by the military, because there was no other sufficient and appropriate body to control the disorder; the second source was from public recognition that the punitive laws of the land were not providing a sufficient deterrent to burgeoning crime.

The next principles gave understanding to members of the new police of what was needed from a service that was civilian and unarmed:

- To recognise always that the power of the police to fulfil their functions and duties is dependent on public approval of their existence, actions, and behaviour, and on their ability to secure and maintain public respect.
- To recognise always that to secure and maintain the respect and approval of the public means also the securing of the willing cooperation of the public in the task of securing observance of the laws.
- To recognise always that the extent to which the cooperation of the public can be secured diminishes, proportionately, the necessity of the use of physical force and compulsion for achieving police objectives.

The next principles gave wise advice as to how the foregoing principles might be achieved: by demonstrating absolutely impartial service of the law and ready offering of individual sacrifice in protecting and preserving life; by preferring persuasion to force; by maintaining the historic tradition that the police are the public and the public are the police, the police being only members of the public who are paid to give full time attention to the duties which are incumbent on every citizen, in the interests of community welfare and existence.

The members needed to be reminded about the limitations of their control:

- To recognise always the need for strict adherence to police executive functions and to refrain from even seeming to usurp the powers of the judiciary of avenging individuals or the State and of authoritatively judging guilt and punishing the guilty.

Finally, there came a way to evaluate their success or otherwise:

- To recognise always that the test of police efficiency is the absence of crime and disorder and not the visible evidence of police action in dealing with them.

These principles were designed specifically for English society, and were the distillation of a long tradition of discussion about law, liberty and the rights and responsibilities of the individual citizen and the state, going back to the Magna Carta of 1215. The New Zealand Police had a different history. For the first forty-six years after the Treaty of Waitangi, policing in the new colony had a predominantly military cast and members were heavily armed. A national civilian police was not formed until 1886, but it was under the control of senior army officers until the first Police Commissioner was appointed in 1898 (Gordon, 1986). Some reflection of this military past may still survive in the organisational structure of the general duties staff, some ceremonial rituals and the awarding of medals for service and acts of heroism.

The new Policing Act of 2008, developed after intensive discussion with interested parties, outlined the principles under which the New Zealand Police would work:

- Principled, effective, and efficient policing services are a cornerstone of a free and democratic society under the rule of law.
- Effective policing relies on a wide measure of public support and confidence.
- Policing services are provided under a national framework but also have a local community focus.
- Policing services are provided in a manner that respects human rights.
- Policing services are provided independently and impartially.
- In providing policing services, every Police employee is required to act professionally, ethically, and with integrity.

These principles reflect that nearly two centuries after Rowan and Mayne the policing of New Zealand by a civilian police agency rather than a military one is taken for granted. The need for public support and confidence is still pre-eminent and the concept of impartiality and independence is still enshrined. There is an evident focus on policing services and efficiency. The language is less warm and explanatory than the prose of Rowan and Mayne, and abstract terms such as ‘principled’, ‘ethically’, ‘professionally’ and ‘with integrity’ may require more explicit definition.

In the new Act, though, the functions of the police are set down in a model of clarity: keeping the peace; maintaining public safety; law enforcement; crime prevention; community support and reassurance; national security; participation in policing activities outside New Zealand; and emergency management. The last function is included because the New Zealand Police differ somewhat from police agencies in larger countries in being the body responsible for national security and emergency management. The requirement for providing community support and reassurance may be a mark of a culture and working relationship between the police and the public that is peculiarly New Zealand’s, and therefore forms an integral part of the background when applying the Investigative Entity model to the work of the investigator in the New Zealand Police.

These, then, are the principles and functions which define the task and philosophy of every member of the police. However, both the principles and functions outlined

were entered into the Act with the proviso that ‘nothing in the principles and functions imposes particular duties on, or gives particular powers to, the Police, the Commissioner, any Police employee, or the Minister.’ In assigning responsibilities, this may be significant.

There are distinct areas of responsibility in the New Zealand arena.

The Government and Minister of Police

Often the first resort of a political party striving to obtain a mandate to govern is to use stock catch-phrases such as ‘restore law and order’, or ‘wage war on crime’ during the election campaign. Details are not required at this stage, but after the election of a new government the police agency needs to know how it is expected to achieve this and what funds and other resources will be provided.

The first step is the appointment by the Prime Minister of a Minister of Police. This individual is party to a collective authority reposed in the Cabinet, which gives it responsibility for all the agencies of government (*New Zealand Government Cabinet Manual*, 2008). As Gregory (1995) puts it, ‘The classical doctrine of vicarious ministerial responsibility remains a pillar of the New Zealand constitution.’ In discretionary matters, therefore, whether pertaining to policy-making, in petitioning for resources, or in the use of departmental clout, the Minister of Police in New Zealand does not stand alone (Mulgan, 2004).

The Minister, who represents a parliamentary constituency or is on the list of members of Parliament selected by a political party, works in a political capacity as well as in a ministerial capacity; to this is added a personal capacity, where a conscience vote in the House may require the expression of the Minister’s own convictions. Once briefed, the Minister is responsible first for creating a productive working relationship with the Commissioner and the staff of the Police agency.

Ultimately, regardless of the balance of power and division of duties between the Minister of Police and the Commissioner, it is the Minister who is accountable to Parliament for the outputs of the Police agency and public satisfaction with its value for money.

The Police Commissioner and Executive

The Commissioner of Police's first concern is the maintenance of an effective organisation that delivers the outputs expected by the government and the wider public. The new New Zealand Policing Act of 2008 set down the areas for which the Commissioner was responsible to the Minister, and those where he was able to act independently. The list of areas where the Commissioner is not responsible to any other authority maintains his constabular independence:

The Commissioner is not responsible to, and must act independently of, any Minister of the Crown (including any person acting on the instruction of a Minister of the Crown) regarding the maintenance of order in relation to any individual or group of individuals; the enforcement of the law in relation to any individual or group of individuals; the investigation and prosecution of offences and decisions about individual Police employees.

Clearly designated in general as the list of duties and responsibilities is, to achieve them he needs to maintain or re-create an appropriate culture for the agency, where there is an over-riding consciousness of the need to act ethically as well as efficiently, where employees are valued and encouraged to perform, and where fruitful ideas and innovations are welcomed. This implies qualities of leadership as well as managerial skills; the intellectual strength to identify the need for cultural change for the organisation if required, and the drive to tackle the process.

Over recent years there have been several occasions when New Zealand Police Commissioners have shown awareness of their responsibilities beyond the standard need to bear the blame for deficiencies in operational efficiency and organisational administration.

The first example concerned the provision of adequate knowledge-management systems. By 2000 the ill-fated INCIS system had become inextricably linked to the fortunes of former Commissioner Peter Doone; when he realised that under his leadership the project could no longer be completed at an affordable cost, exacerbated perhaps by an incident involving his personal honour that received

immense media attention (Stevens, 2000), he chose to resign, thus giving all the parties concerned a chance to survey their losses and begin again.

The second example was that of Commissioner Howard Broad, who in April 2007 was required to respond to the critical Report of the Commission of Inquiry into Police Conduct presented by Dame Margaret Bazley (Bazley, 2007). The Prime Minister, Helen Clark, had already publicly stated that public confidence in the Police had been severely shaken and needed to be restored (Bridgman, 2008) and the police organisation waited in some perturbation to see how their commissioner would respond.

Broad's first response was to declare his full acceptance of the Report's findings. His second was to issue a media release that showed the measure of the man:

My role as Commissioner is to provide the leadership needed to cement this organisation's reputation for performance and integrity. That's a responsibility I am proud to accept and determined to meet.

Dame Margaret Bazley had recommended four practical steps that might be taken to change police culture:

- positive leadership delivering clear and consistent messages;
- giving high priority to the recruitment and retention of women and minority groups, to give a better reflection of the culture and values of New Zealand society;
- a periodic external audit of police culture; and
- the development of whistle-blower mechanisms that would protect the informant.

Broad and his senior staff surveyed the 48 recommendations made in the report and established where responsibility for implementing them might be assigned. The Police were already working on changes to the Policing Act (passed 2008); the design of a Code of Conduct for Sworn Police was given priority (New Zealand Police, 2009). Where a recommendation fitted with the duties of a business unit, the manager of the business unit was given responsibility for its implementation.

The leadership of the Commissioner and the effort put into the endeavours by senior staff led to a satisfactory first external audit by the Auditor-General on their response to date (Controller and Auditor-General, 2009).

In apportioning responsibility for supplying investigators with effective knowledge management systems, the Commissioner's share rests on his responsibility to: understand the nature of the investigative entity and the need for knowledge that underpins it; understand the qualities, cognitive skills and needs of the individual investigator at the heart of the investigative entity; foster an organisational climate where good use is made of information systems and intuitive thinking and innovation are supported; manage policy-making and fiscal accountability so that funds are available for knowledge resources; and advise and perhaps teach the Minister about investigative knowledge management.

As part of the policy-making and fiscal management arrangements between the Minister and the Commissioner, above the level of departmental management decisions, there needs to be clarification of what provision will be made for investigative knowledge-management systems, and later, what policies and provisos will pertain to the selection, purchase, maintenance and evaluation processes of any new system envisaged.

The question of responsibility for knowledge-management systems is not confined to the upper echelons of the police agency. Every person in the police organisation has clear responsibilities for the productive and ethical use of the systems.

3.3 Summary

This chapter shed light on the New Zealand Police: its guiding policy, its functions, its organisation and its knowledge-management systems. Two main areas of concern were shown to be the need for change in the organisation's culture and the need to provide knowledge-management systems to sustain an 'intelligence-led' model of policing.

The agency has shown itself willing to consider changes to the way in which the organisation is structured, to examine problem areas identified by both its own policy makers and outside agencies, and to provide computer systems for intelligence work. Project teams have been formed to cover the previous lack of definition of what investigation and case management are, so that financial and organisational guidelines for their utilisation can be laid down.

From the interviews and observations it was clear that much thought and effort about corporate instruments had gone on in Headquarters, but there was concern about whether members knew the extent of the new systems and the information now available to them, and were making effective use of it. There was also concern about the environment provided specifically for investigators.

With understandings about the locus firmly in mind, the first step in undertaking the research was the creation of a standpoint from which the initial investigative process could be viewed, a new model of the 'investigative entity'. This forms the basis of the next chapter.

Chapter Four

The investigative entity: development of a comprehensive model

Overview

Once the three strands of the research design had been isolated and the locus established, the next task was to conceptualise a model, an ‘investigative entity’, to create a standpoint for further discussion of the investigation of crime. This entailed concentration on several aspects of scholarship, the reading and reflections on which form the basis for the next three chapters, and underpin the empirical study laid out in Chapters Eight, Nine and Ten.

This chapter begins with the actual task of investigation: what is required of investigators, the environment within which they work, the qualities and skills they need, the factors that affect their performance, and how the interface between the individual investigator and the architecture of knowledge is achieved. When this is done a model of the many-layered ‘investigative entity’ is articulated, borrowing from a complex array of literature in the fields of policing, and the philosophy and philology of knowledge and knowledge management systems, to guide further discussion of the initial investigative process.

Attention is paid to certain key elements, the first four of which are descriptive in nature:

- the investigator;
- the investigative environment, from the immediate to the widest possible delineation;
- the siting of the investigator within the environment; and
- the concept of an architecture of knowledge.

The fifth element, while founded in description, begins to articulate a theoretically fruitful ‘new look’ at the core design principles of knowledge-management systems that will be of use to an investigator, whether working as an individual or sited within an investigative team:

- the interface between the investigator and the architecture of knowledge, interrogative in nature, leading to a discussion of the role of knowledge

management systems as conduits between the investigator and the architecture of knowledge.

4.1 The investigative entity

The investigation of crime is rooted in the ‘hue and cry’ of English tradition, where every citizen had a responsibility to the community to identify and track down offenders against the common weal, so that they could be brought to judgement. Eventually the duty of providing for a country’s safety from crime devolved upon the government, and though there are many and varied agencies and partnerships through which this can be actioned, all seem to include a specialist group of investigators, often called detectives.

There are few decisions which are as crucial to success in a final outcome as those which detectives make in the initial stages of the police investigative process. While the customary actions to be taken in an investigation may be known, codified and drilled into practitioners, the initial identification of the presenting event as a matter for police intervention and the first sparks of understanding of its likely causes and progression involve subtle and complex decision making. There will be material evidence and often witnesses, but the main source of success in the initial stage will lie in the investigators themselves: their professional skills, their ways of perceiving the world and the power of their thought processes and imagination. In the initial stages, too, lies the highest potential for error, for choosing the wrong elements of evidence to focus on or the wrong path to take in navigating the investigation.

Investigation of crime can be both mundane in its procedural requirements and challenging to the spirit. In its simplest form, in which the designation ‘crime’ is unhesitatingly given to an incident and the search for and speedy apprehension of the perpetrator is the primary focus, the investigative process may be described as in this summary by Weston and Wells:

A crime is reported, discovered or detected.

Police officers respond.

A search is conducted for the perpetrator of the crime. It may be either a ‘hot’ search of the crime scene, a ‘warm’ search in the general vicinity of the

crime or a 'cold' investigative search.

Throughout the search, suspects appear and have to be checked out.

If the search is successful, evidence to support a charge is assembled, and the suspect is apprehended (1990, p3).

In such a simple process, when an incident comes to the attention of the police, the first decision is whether the matter is one that the police are warranted to attend, or capable of dealing with. The investigator has to find out what has happened: when, where and how it happened, and who are involved. After obtaining a basic grasp of the relevant facts, he then has to decide whether the incident contains the elements of a crime, offence, misdemeanour or breach of the peace, and if so, under what Act and section of the Act it should be dealt with. This decision has a profound effect upon the forthcoming action able to be taken, for the legislation contains the authority by which the investigator receives his powers to intervene and to select the appropriate police procedures to be followed.

Once the incident has been designated a police matter, the investigator must decide what practical action to take. Can he handle the incident alone, or should there be a call for help and resources? Then there is the choice of what communications to make, from interviewing witnesses to reassuring victims; from briefing colleagues to following routine police requirements for information about his whereabouts and activities. There are police procedures to be followed, records that must be made throughout the proceedings, safety precautions that need to be taken. At every stage an investigator may worry about the quantity and quality of the work he is doing, and wondering whether there is alternative action that might be taken.

Eventually, if all goes well, he will have identified and apprehended an offender and collected the evidence and documents needed to lay a successful charge in court.

But this is merely the investigative procedure carried out throughout the world every day, based on stock routines that have been found to be practicable by police authorities everywhere (Geberth, 1996; Swanson, Chamelin et al, 2003). These detective procedures, police administrative routines, and legal requirements are admirable in assuring that there is a template for action and nothing is forgotten to

ensure a successful court prosecution if an offender and sufficient evidence is found. Their greatest drawback is that they focus on the *doing* part of the process rather than on the thinking that underlies it.

A more complex model of the investigative process is needed, for each investigation is not a mere series of routines. Each pre-eminently requires an abductive process, both internalized and manifest, and sited within the prevailing culture, undertaken by an investigator upon the explicit, implicit and unknown facts available to him, thus creating a continuing, unselfconscious, productive interplay between the skills of one and the complexity of the other. An initial definition of the abductive process is what Eco (1984, p 40) describes as ‘the tentative and hazardous tracing of a system of signification rules which will allow a sign to acquire its meaning’. In particular, the process abjures a hard and fast patterning of absolute facts as they come to light in favour of creating a mesh where established facts are interwoven through pathways that may be based on speculation or intuition, to be confirmed later. It is dealing with this element of uncertainty, of intuitive pattern-making ahead of verification, which must be added to any discussion of investigation.

In many respects the abductive process involved in problem-solving in the first stages of a criminal investigation can be likened to an angler setting out to catch a trout.

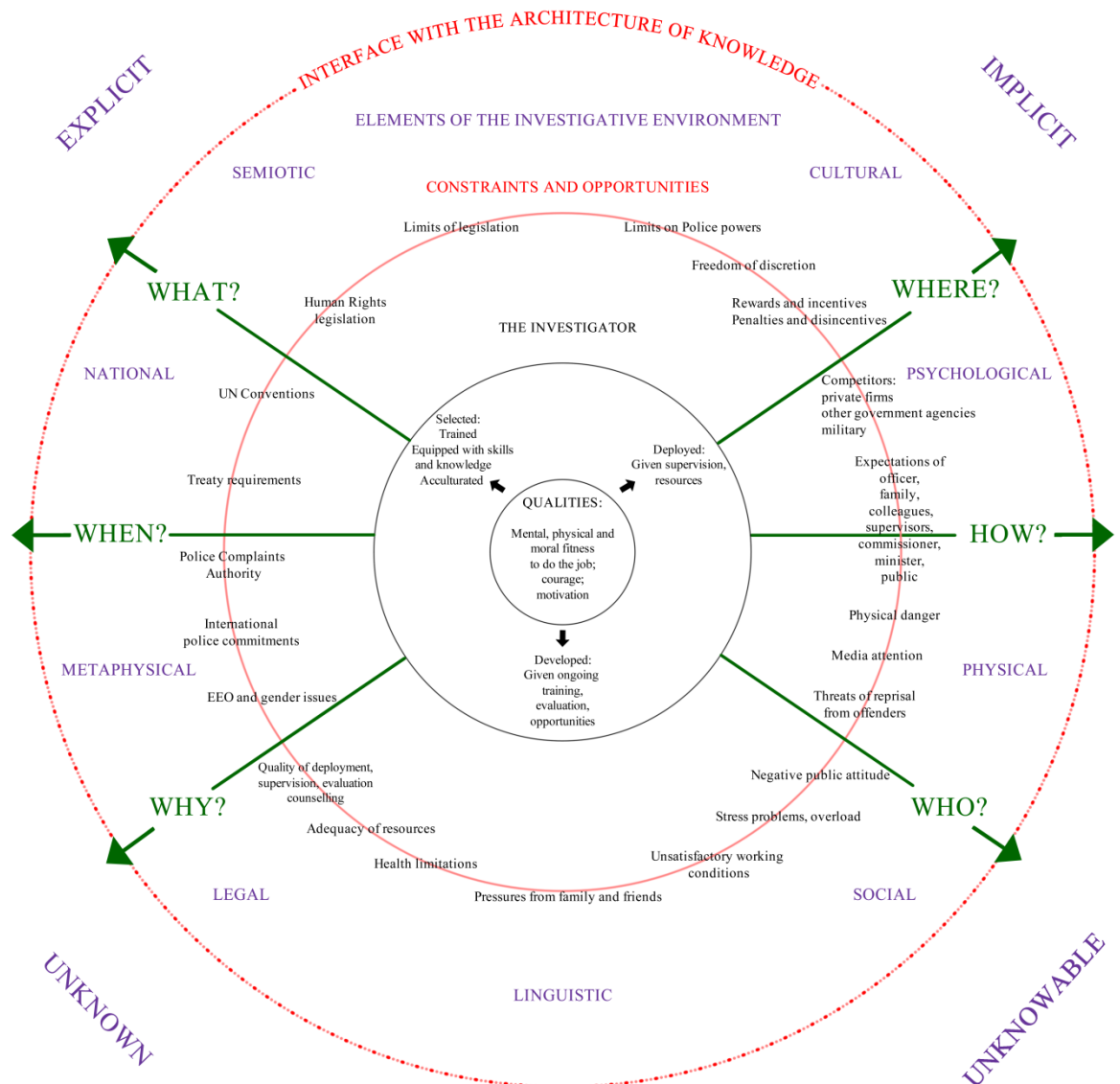
First, the angler has an idea, solidifying into an intent to go fishing. Then come the practicalities: considerations of the weather, possible localities, access, river conditions, the right tackle, the regulations relative to the taking of trout, time available, safety precautions and similar requirements. Many of these preparations will require information such as a call to the weather station, a conversation with local fishermen, discussion at the tackle shop, or a glance at the Angler’s Guide.

Armed with the information, having made an assessment of the likely success of the enterprise relative to the time and effort required for making the attempt, the angler will complete all preparations and set forth to fish.

Experience will suggest the likely places in the stream where a trout may lie, but the consummate angler adds to this an element of the uncanny – a sudden conviction that a minor swirl or eddy, contrary to expectation, is hiding a monster trout – and is very often proved right. The combination of information, skills, experience and willingness to act on intuition which has suggested a certainty of success ahead of its verification constitutes an abductive process.

Like angling, the investigative process, with the investigator's own information, skills, experience and perhaps willingness to act on intuition, takes place within a much subtler and more profound environment than routine procedure suggests. In essence, in examining the investigator's task of decision making, in addition to noting his routines there needs to be consideration of a multilayered and complex model, which I am denoting my 'Investigative Entity Model'. A compact version of this is printed on the following page as Figure 2.

Figure 2: The Investigative Entity Model



The present work is an exploration of this Investigative Entity model, with a particular focus on its use in clarifying the management of knowledge that such an entity demands of both organisation and practitioner.

The Investigative Entity model represents in concrete form a universe of ‘signs’, containing the spoor of the actions that shape it, the thoughts that inform it, the language that expresses it, the culture that bounds it, and the emotions that colour it. Like a modern-day angler, the investigator can learn to follow the signs, but true

interpretative skill demands that powers of logic, creative imagination and skilful management of knowledge all be brought to bear on them. This management of knowledge is both internalised and manifest – it uses the processes of thought that have been developed by the individual investigator, but its results are able to be expressed verbally, communicated to others and recorded on systems. Interpretative skill is particularly crucial in the initial stages of the investigative process, when information is at its freshest, where the first inklings of the trail to be followed begin to present themselves and the probing mind is at its most free to speculate. It is also the stage where erroneous decision making may lead to wasted pursuit of information, lost time, warped procedures and possible miscarriages of justice. With this caveat in mind, the research focuses more on what could be called the ‘successful’ side of interpretative skill in investigation, where the accuracy of decision making is confirmed by the court process, or by the confession of the accused wrong-doer.

The investigator, and investigative team, moves into a world of facts that need to be woven into hypotheses and proved to the satisfaction of a court of law, which is a world constrained by the limitations of the judicial system, approved practice, the conventional vocabulary to be used, social mores and the investigator himself. This world of facts is supported by a multi-partite knowledge-management system.

Although individual reasoning and decision making is crucial in the process, the investigator does not always work alone. Investigations may involve teams of detectives, forensic experts and support staff, working intensively together. The detective section of a station, or even the national body of detectives sited within the police organisation, may be a group of investigators working not just collegially but with such involvement and common cause that they might well be called a ‘community of practice’ (Wenger, 1998). For such a designation to be apt, a group must have more than mere expertise in a common task, common access to sources of information, or sharing aspects of a task within a common investigation. A community of practice has an emphasis on sharing of knowledge, on learning as a group, on growth and innovation, and on professionalism (Wenger, McDermott & Snyder, 2002; Andriessen & Fahlbruch, 2004; Barton & Tusting, 2005; Ritzen et al, 2005).

Throughout this research, therefore, there is a focus on the interplay between investigators, investigative teams, the investigative entity, and police knowledge-management systems. Chapter Six looks at the nature of investigative teams, while in Chapters Eight, Nine and Ten, case studies of individual investigators provide a descriptive understanding of how the relationship plays out in a large district within the New Zealand Police.

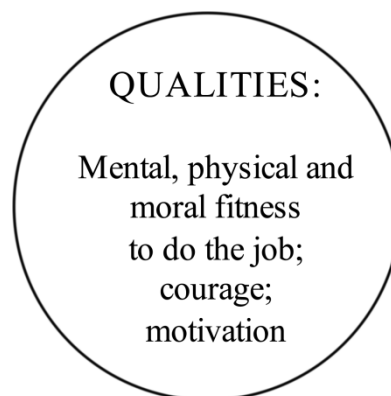
It is, however, the initial abductive process, that first instinctive reaching for a pattern that will enlighten the event, that first consideration of what knowledge will be needed and where it may be obtained, that is the main focus of this thesis.

4.2 Elements of the investigative entity model

4.2.1 The investigator

Central to the investigative entity model is the investigator. While this title may be applied with some credibility to any sworn member of a police service, generally there is a designated section of the force devoted to investigative work, with staff who have been selected as having the mental, physical and moral fitness, the courage and the motivation to do the job, as depicted in Figure 3.

Figure 3: Qualities of the investigator

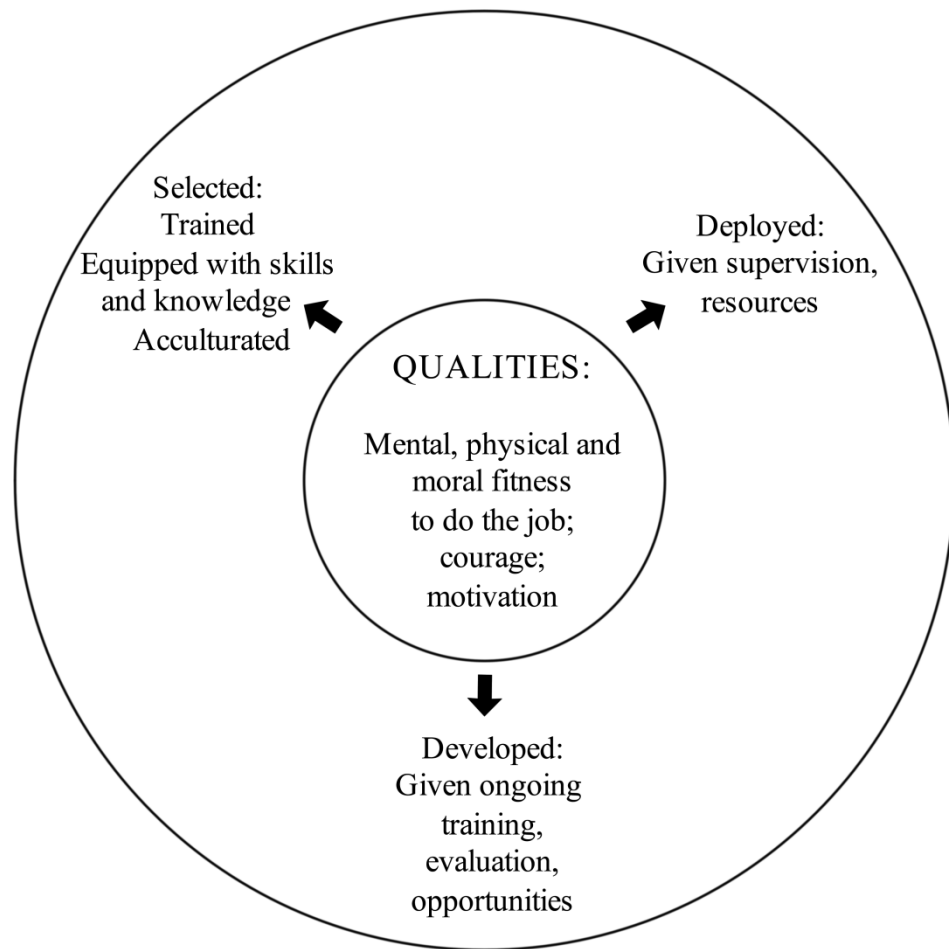


In many jurisdictions the investigator has already been in the police service for some years before being selected for detective training (Stephens, 1997). In others, the successful completion of a battery of aptitude tests, a check of background and referees' assessments enables direct entry to detective training.

Once selected, the investigator is trained: equipped with skills and knowledge, and acculturated so that he may benefit from being acceptable to others in the working environment. He is deployed at the level of his competence. Over time he becomes recognised, is given further training, and offered opportunities to develop (see Figure 4). In modern policing agencies there is a new emphasis on performance development reviews to underpin this process (Neyroud & Disley, 2007). With wise supervision the investigator will acquire a carapace of competence and experience that provides a measure of protection against the exigencies of the task.

The nature, length, particularity, quality and acceptability of initial and on-the-job training varies widely throughout the world, many practitioners preferring to dwell on the tutelary power of experience rather than on the trainee's being given abstract teaching before he understands the practical and emotional dimensions of the task. Universally training is presumed to equip investigators with the skills and knowledge they need to perform (Croxford, 1999; Morgan, 1990), given that they are deployed, supervised and resourced adequately. The training process, if undertaken in a group situation rather than as self-paced individual learning, performs an even more important function by acculturating the individual to the detective persona (Gordon, 1986). It imbues a feeling not just for what detectives must do, but how to do it to gain the support and satisfaction of their fellows. This hidden curriculum may initially have strong coercive power in shaping the investigator's performance of the task. With time will come the mellowing of attitudes, increased speed and subtlety of skills, and the confidence to trust the instinctive response to a situation variously called 'a nose for the job', 'flair', 'gut-feeling', 'hunch', or more specifically, 'intuition'.

Figure 4: The preparation of the investigator for the task

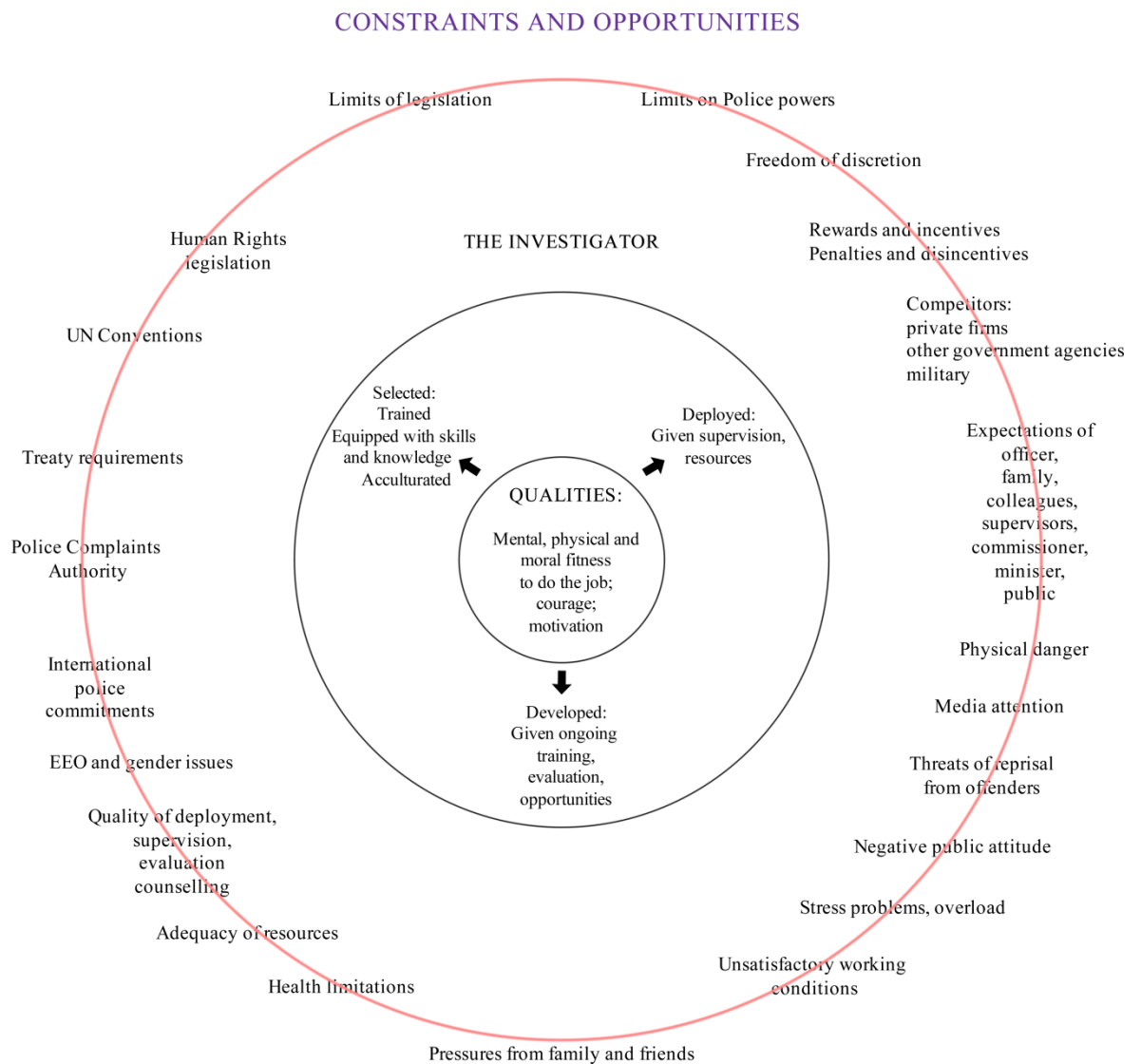


Success in the detective task comes from the appointed detective officer's ability to manage the vast, varied knowledge input each case brings, to formulate a hypothesis and choose the inputs of information, both formal and informal, to support it. This productive knowledge management is an internal process, founded in his innate abilities and lifelong successful experiences of problem-solving; but further underpinning success for the individual officer may be his understanding of traditional training, methods and procedures; an ability to comprehend the legal, political and sociological climate within which he operates and the restraints imposed by these; and personal skills and imagination to grapple with the problem. An ascription to a detective of 'flair' (or recognisable skill in formulating and speedily confirming an hypothesis), often accredited to inborn genius, may as easily be the result of good internal knowledge management.

4.2.2 The investigative environment

An expert detective, working with dedication, expertise and moral courage upon his unlovely task, is both constrained and empowered by the environment in which he lives. Some of these constraints and opportunities are modelled in Figure 5 below; in general, as they are multifarious and the weightings given to them by both the investigator and society are subject to change, the terms constraint and opportunity are used only as guidelines to the limitations on courage, individuality, innovation and possible action implied therein.

Figure 5: Constraints and opportunities in the investigative environment



The limitations upon his performance most obvious to the general public are the legal restrictions placed upon actions. Sourced in the traditions of common law are the rights to search, to question, to enter premises, to restrain, to arrest, to bring before the court. Investigators' powers are clearly and specifically set down in acts and statutes, in departmental codes of conduct and manuals of best practice; in many jurisdictions the oath of office itself sets the firmest of guidelines for their conduct. The greatest gift in investigators' control is often the power of discretion, to choose when, how and whether to act in a given circumstance (Kay, 1996).

Set against the power of discretion is the necessity to defend their decisions to higher authorities, to have their conduct subjected to scrutiny by a Police Complaints Authority, an Inspectorate of Constabulary, a Senate subcommittee or others of that ilk. In many countries the investigator must walk the minefield of equal opportunity, gender, race, religious and sexual orientation issues, and work under the umbrella of United Nations Conventions and Human Rights legislation. However, much of this may rather liberate the investigator from past accepted practices than constrain his options for action in the present; it helps to assure a global perspective on the investigative task.

Closer to home are the constraints that arise in the course of work. There is the issue of the quality of their deployment on tasks well fitted to their skills and experience, the abundance or paucity of the rewards and incentives that accrue from successful performance. In many cases the supervisory skills of their immediate superiors are crucial to their comfort in the tasks set them (Smith & Flanagan, 2000; Newburn, Williamson & Wright, 2007); access to acceptable counselling may also be essential. Militating against satisfactory progress and outcomes may be the lack of resources, money, equipment, staff, patience and courtesy endemic to many detective departments.

Of quintessential importance may be the amount of time available in which to make decisions (Smith & Flanagan, 2000; Innes, 2003). The investigative entity exists within chronological time, and is a living entity. The constraints of time upon it take two main forms: the first is the need for a rapid response in order to take advantage of the initial 'information burst' described by Innes (p 85 herein). If an investigation

is prolonged, or even if slow to start after its initial discovery, scenes change, clues disintegrate, memories fade, so that information is no longer available in pristine form.

The second concern is the time pressure on the investigator from other tasks competing for his attention, statutes of limitations within which he must present his case, set court dates on which he must give evidence. However, constraints of time are not invariably present, and there may be incidents where flexible time gives the opportunity for better recall by witnesses, more thorough investigation of material clues, even more time for cogitation by the investigator.

Most investigators work under constant media scrutiny and demands from superiors and governments for speedy resolution of crimes. The investigator has to meet the expectations of colleagues, supervisors and Commissioner or Chief Constable in the police, the ruling political party's need for visible success in the war against crime and the public's desire for a tranquil and crime-free existence for which they may feel they need take no action or responsibility. There is always the threat to his continued employment posed by alternative sources for crime control – private investigators, other government or quasi-governmental agencies and the military.

At a more personal level are the issues of personal health, menaced by the investigator's desire to abjure rest and adequate nutrition in the haste to identify the malefactor and resolve the case. There is often pressure from family and friends to work shorter hours, or to leave the occupation because of its perceived riskiness; or untenable suggestions to demand from the employer more resources or remuneration. Family demands, coupled with negative public attitudes, can create problems of stress and overload (New Zealand Police Association Survey, 2006).

The nature of any investigative team to which is he assigned will make further calls on the investigator's ability to function productively. There are issues of loyalty and the danger to his individuality of 'group-think' or pressure to conform to existing group culture (Hirschman, 1970).

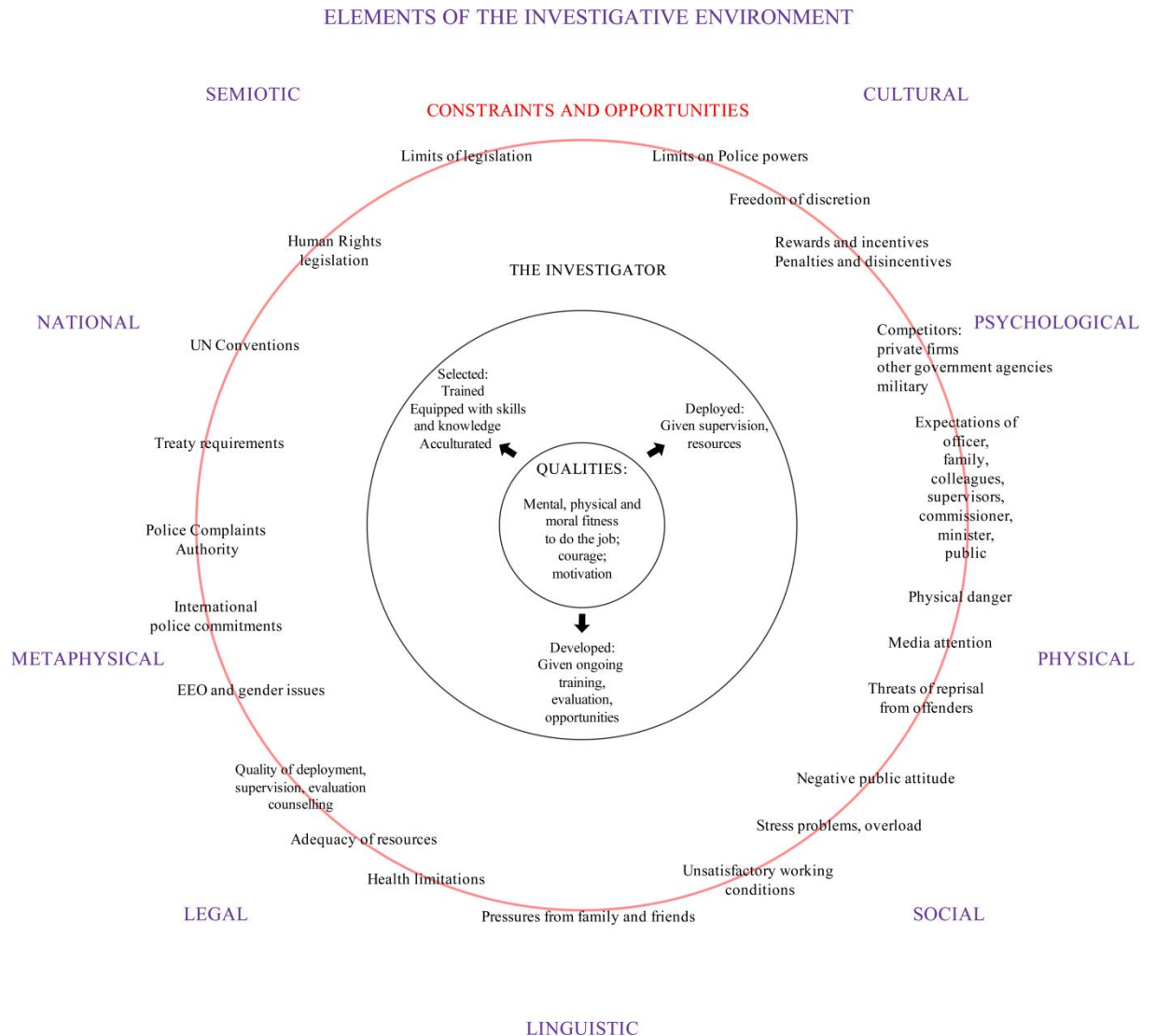
Nevertheless, given its relative isolation from other branches of police activity, its lack of uniforms, its heroic task and its perceived mystique, if the investigative unit in any police organisation is working in the nature of a community of practice, it is likely to be staffed by dedicated, skilled, caring and not impossibly, happy, investigators.

4.2.3 The investigator in his wider environment

Beyond the immediate sphere in which investigators work, with its concomitant constraints and opportunities, lies the whole environment of their country and the rest of the world. They cannot work in isolation from the contiguous and contemporaneous activities of other people and agencies; communication brings contagion from the acts and ethos of those others and may engender a reluctant need to compromise. Figure 6 depicts this wider environment.

They face first the limitations of their physical world, the inconvenience of many loci in which they have to work, the lack of time, of formal resources, of energy sources, of human strength. Allied to this are the restrictions of the social milieu in which they live, the amount of cooperation and acceptance they receive, the level of recognition accorded to the task they perform.

Figure 6: The working environment of the investigator



They are not independent of their culture and their own background and upbringing: their selection has been made by superiors with their own perceptions of the type of person needed in the job. This presumably makes the task more difficult where there is a lively multicultural society with conflicting views of the police role or where there is a deeply entrenched class system. There may also be a conscious national pride in the way the police task is conducted and reluctance on the part of the government to change traditional ways: this can be observed in the controversy in some countries over whether police should now be armed or whether traffic duties should still be the prerogative of uniformed police. Differences may be highlighted

when police from one country are employed on duties in another, often as part of a multinational police team restoring order after civil unrest.

There are certainly organisational differences among jurisdictions around the world. Some heads of police have security of tenure, some are elected by the public, some appointed by the government or chosen from within their own organisation by an impartial board of selection. Another recordable difference is whether each police service has a military or quasi-military role. In each country, and often each major city, the place of the investigative unit within the police hierarchy and its relative autonomy or dependence is important for cooperation in the field and the sharing of information and resources.

More difficult to quantify is the psychological and metaphysical environment in which, for some investigators, police work in tracking crime has the connotation of doing God's work, or 'working for the good of society'; whether this concept in the mind of the investigator is based on altruism, or a need to perform some task recognised by others as useful and worthy, or on a Calvinist work ethic that lauds the performance of difficult tasks in distasteful circumstances, it is a factor in the investigative entity and may be of more than minor importance.

4.2.4 The investigator at the task

The necessary qualities for success in the initial crime scene assessment have been identified as the rapid and successful assimilation of information from the scene and the ability to create the conditions most conducive to the solution of the crime by critical control of the timing, procedures and people needed (Smith & Flanagan, 2000). The present study is concerned with the first element – the rapid and successful assimilation of information. The investigator needs specific knowledge in the very first stages of the task, and must have it, or be supplied with it. The speed in defining the putative parameters of the presenting event, a ready understanding of the sources for what information he must have, coupled with the ability to find and organise them, initiates success in the investigative task.

The first level of information lies in any clues left at the scene, so the first instinct as

to the nature of the event will be backed by evidence from skilled scene examiners, forensic staff and the police pathologist in the case of crimes against the person. Some of this information will take time to produce and must be allowed for as the investigator moves on. He must be able to rely on the integrity and competence of the specialists he works with to preserve and evaluate the evidence and communicate it to him in a form that both the investigator can understand and the courts can accept (Diaz, 2006)

For many investigators the most useable source of information is direct communication with witnesses, victims, malefactors, informants and experts who may be able to supply them with the grist for their ruminations, so managing oral information is a key tool at the outset of an investigation (Ord, Shaw & Green, 2004).

An investigator's ability in this area will be based on acuity of actual hearing and a manner that will encourage the flow of information. He will know how to listen for key words that indicate areas of the verbalizing that have relevance for the task; will be able to filter out extraneous material and, where time is of the essence, judge the prolixity of the informant against the value of the information offered. He will assess neurolinguistic clues in the vocabulary used and determine whether his interpretation of semantic meanings marches with that of the conversationalist. Undoubtedly an investigator will have good questioning skills and mastery of reading cues in demeanour and gestures. The information he hears has to be categorised and stored in memory according to its possible place in the case he is constructing. His assistants will be waiting for shrewd summaries of verbal material gleaned from witnesses and informants and will expect him to receive their opinions as valuable support for theirs.

There are pitfalls in dealing with oral information. Underpinning all the management of verbal input should be the recognition of any preoccupations and predilections of his own that might make for selective and unreliable listening. It is also important for an investigator to recognise social factors that might make members of the general public reluctant to involve themselves in police enquiries, and find methods and manner that overcome their perceived difficulties (Madinger, 1999).

The cognitive skills required to deal successfully with written material evidence are various. Perhaps most important in dealing with bulky texts is the ability to skim the words quickly and isolate keywords that will confirm that the material is useful, saving hours of laborious effort reading every word. This ability is a *mélange* of visual acuity and pattern perception: the speedy leap from the eye to the memory and word recognition area of the brain, followed by the perception of relevance (a more complex process), the confidence to make quick decisions and the courage to omit material. If the investigator has been taught and has organisational skills in skimming, reading in context, using indexes, summaries and chapters of contents, there will be an easy competence with written material. This does not always happen.

Allied to this is the ability to comprehend material presented pictorially – to read graphs, diagrams, photographs and tabulated data. If the knowledge is computer-based, the investigator needs to be able to manage the technology and to frame questions that will enable him to get the relevant answer from the widest possible network of sources (Weick, 2001).

Some English research indicates that these skills in information gathering must be coupled with a mastery of timing (Smith & Flanagan, 2000), so that evidence does not perish, the scene become contaminated and memories fade: the creation of ‘slow time’ within which to work is an essential tool of the investigator. Innes (2003) refers to the initial frantic information-gathering period of an investigation as the ‘information burst’, but it must not be forgotten that although speed and rapid assimilation of knowledge are considered essential in the early stages of an enquiry, the investigator’s task requires attention to the minutest details. In many cases it takes months of trawling through data variously obtained from physical clues and verbal and written statements before the last evidence is teased from the plethora of material. Decisive consideration of the ‘information burst’ lays the groundwork for the solid pursuit of the right lines of enquiry.

Given that the investigator has been trained in police procedures for the investigation of crime, has the cognitive skills to deal with material presented to him, can manage the contributions of others and possesses the courage and confidence to undertake

the process, what further factors may bear on the initial decision making?

One factor may be the range, level and intensity of the desired skills. As early as 1906, in one of the earliest manuals for selecting and training investigators, Hans Gross opined, ‘...an investigator should be endowed with all those qualities which every man should desire to possess, indefatigable zeal and application, self denial and perseverance, swiftness in reading men and a thorough knowledge of human nature, education and an agreeable manner, an iron constitution and encyclopaedic knowledge’ (Morgan, 1990). In the same era the legendary American police chief and innovator, August Vollmer, wryly acknowledged, ‘The modern policeman requires the wisdom of Solomon, the courage of David, the strength of Samson, the patience of Job, the leadership of Moses, the kindness of the good Samaritan, the strategical training of Alexander, the faith of Daniel, the diplomacy of Lincoln, the tolerance of the carpenter of Nazareth and an intimate knowledge of every branch of the natural, biological and social sciences’ (Leonard, 1980). There is no evidence that these pious requirements were ever used as a basis for formal detective selection procedures, a clean record, physical strength and a willingness to serve appearing to be the only criteria for many years.

Weston and Wells consider that the investigator’s qualifications should be nothing less than outstanding and they focus on five personal attributes that contribute to a successful career in the detection of crime:

- an unusual capability for observation, objective perception and recall;
- the power of deliberation and deduction – unhurried, rational thinking;
- an extensive knowledge of criminal law, rules of evidence, investigative concepts and techniques, scientific aids and laboratory services, and knowledge about the people who commit crimes and of their modus operandi;
- the power of an intellectually controlled constructive imagination or some ‘native’ awareness of the mental processes of criminals and – sometimes – of their victims; and
- a working knowledge of social psychology (1990).

It is interesting to note that Weston and Wells link in their fourth category the

somewhat different concepts of a constructive imagination and a native awareness of the mental processes of other people. The third attribute, job knowledge, rather than being an innate skill, is one that can be taught in detective school, acquired through experience or provided by libraries, computer systems and police records; perhaps the attribute should be called the ability to manage knowledge, rather than the knowledge itself. The last category, too, is somewhat nebulous. While social psychology is a recognised discipline, there is a possibility that in this instance it may refer to an investigator's need to be aware of the people around him and how they behave individually or in groups; alternatively, the phrase may represent a groping after the concept of an investigative entity entailing more elements than an investigation based on mere procedures.

A similar classification of skills informs the work of Swanson, Chamelin and Territo (2001). They give primacy to the investigator's ability 'to converse equally well with a wide range of people', followed by practical skills concerned with the collecting and recording of evidence, and familiarity with the law and the court system. They acknowledge, however, that these elements are not enough: they prefer to emphasise the clarity with which the investigator sees the relationship between knowing and doing and his ability in decision making.

Dean, Fahsing and Gottschalk (2007), while in essence placing emphasis on abilities similar to those vouchsafed by Weston, identify three styles of thinking about investigative processes that augment procedural skills:

- the challenge style, which recognizes the detective's motivation to succeed as a driving force;
- the skills style, focused on superior communication; and
- the risk style, which involves creativity in obtaining and using information.

Some authorities (Shelton, 1999; Nordin & Pauleen, 2005) base their ideas on quantum mechanics, a discipline centred on the unpredictable movement of subatomic particles in the wave, or energy pattern, of time and space. The abductive process of investigation can therefore be seen as a series of quantum leaps in understanding, mirroring the relationship of the particle to the wave. Further, by

analogy with the subjectivity of observations at quantum level, Shelton claims that past experiences, assumptions and beliefs shape our perceptions of behaviour in the ordinary world.

Nordin and Pauleen consider that the skills of an investigator, even more than in other professions, must be at quantum level in seven main dimensions: thinking, seeing, feeling, knowing, acting, trusting and being in a relationship. In essence, the investigator must be supremely human, with its implications for empathy with others, for feeling comfortable with oneself and at home in the physical, social and metaphysical environment, and perhaps for accepting the possibility of fallibility in one's decision making in both the personal and public arena. Acting at a quantum level in trusting and being in a relationship seems to describe the more than ordinary level of trust and communication required in a community of practice. However, while the quantum concept may be useful in identifying the wider dimensions of the task and prescribing a level of performance, in the light of the courts' requirements for proof, the public's demands for fair treatment and unassailable evidence, and the normal working pressures of an investigative agency, to demand quantum skills of investigators may be stressful and unrealistic.

Innes (2003) portrays the investigative process as a 'craft' with dramaturgical elements, but informed by a 'scientific' style of rationality, and its practitioners as combining intuitive perceptual skills with procedural knowledge. Many sources to some extent blur the boundaries between the investigator's more rational powers of decision making and the ephemeral and less easily delineated characteristics of intuition. The public is perhaps conditioned by reading of detective novels or watching television programmes to expect the investigator to perform miracles of deduction derived from the sketchiest of clues and the incorporation of elements of popular psychology, leaping to improbable conclusions as a result of hunches before confronting the alleged perpetrator with accusations that lead to an acknowledgement of guilt. This public perception of his methods creates a tension in the real-life investigator between what he is trying to achieve by meticulous analysis and synthesis derived from evidential clues, and what appears unbidden in his mind as a type of innate understanding or insight, providing ingenious hypotheses whose origin and authenticity he may perhaps find suspect.

Yet this flair, so recognisable in a practitioner, but so hard to quantify, may be his most useful tool in massaging vast quantities of evidence derived from every source to produce a speedy solution to a complicated problem.

4.2.5 The investigative entity and its interface with the architecture of knowledge

The investigative entity is situated within an environment that has elements of the semiotic, the linguistic, the physical, the social/cultural, the legal, the political, the psychological and the metaphysical, all of which impinge on the actual investigative process. However, the investigator is also centred in a much more complex environment, the world of knowledge.

This world contains all that is known, whether of objects or of relationships or of processes or of experiences. This *explicit* knowledge is stored in libraries, museums, computer systems, audio and video systems, and in human memories. However, vast quantities of this ‘knowledge’ may be inaccurate in detail or totally wrong; biased; obsolete, or ill-conceived in its present form.

A second component of the architecture of knowledge is *implicit* or *tacit* knowledge. This comprises knowledge that is specific to individuals – tricks of the trade, shortcuts or improvements in procedures, inherited information, cultural understandings and esoteric secrets. How or whether this implicit knowledge is transmitted to others is the prerogative of its possessor, and once it is written down there may be little control over its distribution: a cherished craft procedure or family secret has entered the explicit domain.

The world of knowledge encompasses also all the information which is not yet known, but the possibility of whose existence may be entertained, the *unknown* information. To realise the existence of these potential gaps in his information, and to plan strategies to fill them, is the particular challenge that the investigator must face, and there are serious handicaps to his coming to grips with it. In few other occupations are there so many deliberate lies, half-truths, evasions, concealments, diversionary statements, ‘notings’, aspersions, rumours, innuendoes, locker-room gossip, malicious underminings and misapprehensions as in establishing the

narrative of a crime. Fortunately, though human beings may feel they have a constitutional right to lie to the police, the police are under no obligation to believe them.

A fourth category of knowledge, information not only not yet known, but also not yet able to be envisaged, is currently peripheral to the architecture of knowledge constructed for the investigative entity model, and will not form a part of the present work, though it poses interesting philosophical points for later consideration.

All knowledge, whatever its source, lacks utility until it is accessed, evaluated and deployed to good effect. The investigator's interface with the architecture of knowledge is a two-way process of engagement, where the initial questions must be thoughtfully framed to find information as accurately and speedily as possible. The answers must be filtered and evaluated by the investigator, leading perhaps to different or more specific questions. Figure 7 on the following page depicts this process.

The diagram is a circular model with a central circle labeled "The investigator". Surrounding this center are three concentric rings. The innermost ring is labeled "Constraints and opportunities" in red. The middle ring is labeled "Elements of the investigative environment" in purple. The outermost ring is labeled "INTERFACE WITH THE ARCHITECTURE OF KNOWLEDGE" in green. The diagram is divided into four quadrants by a vertical and a horizontal axis. The quadrants are labeled: "WHO" (top), "WHEN" (right), "HOW" (bottom), and "WHAT" (left). The vertical axis is labeled "Explicit" at the top and "Implicit" at the bottom. The horizontal axis is labeled "Known" on the left and "Unknown" on the right. The diagram is surrounded by a green, jagged, sawtooth-like border.

The processes that underlie the brain's manipulation of knowledge have been categorised by Bloom into a taxonomy of skills in the cognitive domain (Anderson & Sosniak, 1994). Each higher level of knowledge in Bloom's taxonomy both builds onto and adds more rules for processing than its forerunner. Understanding such a taxonomy, originally intended for educators but proven of worth in many other domains, can be of value to the investigator when considering evidence and framing the level and complexity of the questions he must ask.

The first level is the effort of memory and recall. While this is a relatively simple level of cortical function, it is essential to the higher processes by receiving information from the senses, storing it and assigning keys to retrieving it, some of which will be linguistic labels and others more visceral recognitions. This cognitive memory concerned with storage and retrieval is ranked by Eccles as the summit of the human memory processes (1984, p 208).

Bloom places comprehension, by which he means literally translating, interpreting and extrapolating the meaning of the information, at the second level of cognitive skill. The next level, application, requires more abstract and independent thought than comprehension, and the application of theories and principles to situations. Above these levels of thought lies the ability to analyse material and to synthesise information into a new theory or explanation.

The final level is evaluation, considered by Anderson and Sosniak to represent both the highest level in the cognitive domain and the link level with understanding in the emotive domain (1994, p 25), and thence a stepping-stone to prediction of outcomes. This dichotomy between the domains reflects only Bloom's specific purpose for creating the hierarchy, which focused on learning objectives and outcomes rather than presenting a philosophy of knowledge. The taxonomy may be of more practical value than Nordin and Pauleen's quantum skills (2005), however, when contemplating the skills and tasks of the investigator at the centre of the Investigative Entity.

Dean and Gottschalk (2007) have constructed a similar taxonomy to that of Bloom, to express the hierarchy of police knowledge. They portray a 'knowledge ladder' in

which raw data becomes information; is validated and becomes intelligence (in the police sense); then is transformed into knowledge by the individual recipient's prior knowledge and experience. They postulate a continuum that reflects the level of interpretation entailed, from low at the level of raw data reception to high when assessment and insight turns it into knowledge.

Other writers take a more holistic view of knowledge. Polanyi (1967) emphasises the importance of the tacit dimension of knowledge, defining it as those facts, sensations and processes that we know without perhaps ever consciously putting into words. His theme is that *we can know more than we can tell....* and he coins the word 'subception' for knowing something without knowing that one knows it. For Polanyi, pursuing knowledge means actively shaping and integrating experience, comprehending by indwelling. Dean and Gottschalk (2007, p 9) encapsulate this concept of tacit knowledge as 'the knowledge people carry around in their heads as mental models and experiential learning'.

The philosopher Popper's great contribution to the architecture of knowledge was his theory of three worlds: the first world contains all that is material in the cosmos, including mankind; the second world is the world of conscious experience, of sensation, thoughts, memories and visions for the future; the third world is the world of objective knowledge, its theories, arguments and linguistic expression (1972). This third world of knowledge, based on culture, is primarily stored and transmitted through the spoken and written word and it is in this world that the investigator mainly moves as he assembles his evidence into a case to answer.

Rooney, too, while postulating one undivided universe of explicit and tacit knowledge, acknowledges that knowing is a social and cultural process both fraught with fallibility and offering the prospect of creativity (2005). Creativity, too, is a focus for Dean, Fahsing and Gottschalk (2007).

The investigator's task is to forge an interface between the events that called him and the infinite world of material clues, signs, thoughts, language, sensory perceptions, rules and intuitions. The effort is expected to be productive, with knowledge inspiring the investigator to useful action and to predicting successful outcomes, or

at the very least, preventing him from wasting his time and resources or endangering himself and his inquiry.

The interface is an interrogative one, underpinned by the expectation that skilful questioning of evidence and people will be fruitful. The initial questions are of the simplest kind, usually prefaced by an interrogative pronoun: what, when, where, how, why, who? To answer them requires asking much the same sort of questions of the world of knowledge: What do I know already? What tacit and explicit knowledge is there to help me in my task? Where do I obtain it? From whom do I obtain it, to whom do I relay it? How do I evaluate and use it? How do I predicate that there is more knowledge, as yet unknown, that is of importance to me? Knowledge-management systems can therefore be categorised as the conduits for the investigator through the interface with the architecture of knowledge.

In this interrogative world the investigator's tools are his cognitive skills, sharpened by training and acculturation to the task, and his ability to recall, comprehend and use his previous experiences. He needs also competence in the use of the police knowledge-management systems provided for him, confidence in his own ability to evaluate and select the material he needs from a plethora of competing information, a willingness to acknowledge what he does not know, an open and non-judgemental mind to unusual or distressing information, and courage to make and defend decisions.

Linked to this is his ability to work in teams, and to communicate his knowledge and his chain of reasoning to others.

4.3 Summary

To establish a model of the investigative entity, crucial key elements were identified:

- the centrality of the individual investigator and the power of his cognitive skills;
- the importance of the environment within which he works, with its opportunities and constraints derived from time, working conditions and the law;

- the subtle influences of the society he serves, and the wider environment of human existence and culture that influences his efforts;
- the nature of the universe of knowledge, its ‘architecture’; and
- the interface between the practitioner and the architecture of knowledge, where knowledge is sought and transformed.

It is this transformation and manipulation of knowledge for investigative decision making that must next be studied.

Chapter Five

Decision making and the abductive process: a literature review

'He did not arrive at this conclusion by the decent process of quiet, logical deduction, nor yet by the blinding flash of glorious intuition, but by the shoddy, untidy process half-way between the two by which one usually gets to know things.'

Margery Allingham, *Death of a Ghost*¹

Overview

Within the investigative entity the investigative process relies for its authority on the investigator's ability to use logic and reasoning to establish a narrative of the possible progression of a crime, supported by a carefully chosen and defensible chain of evidential proof. Even before the reasoning process begins the investigator must 'read the signs' and develop a feeling for possible areas where his work may take him. He must then plan the putative progress of his investigation, consider the number and type of staff he will involve, assess the time he will take and the resources he will need, and defend to his superiors his plan for action.

Once the process starts he will have an overwhelming need to acquire knowledge, apply scientific reasoning and logic to the material he gathers, consider the promptings of his intuition, consider legal and social implications of his actions, perhaps use computer analysis systems to clarify aspects of his reasoning, and ultimately make decisions. But first, he must read the signs.

5.1 Reading the signs

The sign is one of the oldest concepts through which humans have tried to make sense of their world. We can postulate that awareness of signs and attempts to understand and codify them existed long before spoken or written language: is there even the quirky possibility that assigning sounds and later symbols to individual signs made the interpretative process more complicated rather than easier, by adding an intervening layer, which also had to be understood?

This primacy of the sign is underlined by the variety of phenomena which can be called signs. The *Oxford English Dictionary* gives pre-eminence to the definition, 'a gesture or motion of the head, hand, etc., serving to convey an intimation or to

communicate some idea', followed by 'a mark or device having some special meaning or import attached to it, or serving to distinguish the thing on which it is put'; their next category is 'a token or indication, visible or otherwise, of some fact, quality, etc', 'a trace or indication of something, a vestige', or 'a mere semblance of something'. Then, too, signs can be found in many other formats, such as mathematical symbols that convey abstract relationships, or icons making diagrams of information rather than sentences, or codified hand movements for the deaf or Braille dots conveying sense to the blind. And this is even before considering spoor, seals, omens, divine messages, astrological devices, mathematical cues and boards outside public houses – the list goes on.

Eco amalgamates these finicky definitions into his definition of a sign as 'a manifest indication from which inferences can be made about something latent', given that in ordinary usage the intent of a sign is to communicate information from one to another (Eco, 1984, p 15). Regardless of the nature of the sign, it is its perceptibility, universality of interpretation and potential to evoke creative thought that defines its quality.

Nor is the importance of the sign and its interpretation a new concept in philosophy and science. Ginzburg (1988) points out the importance of signs to primitive hunters in their search for prey: from the clues they recognised, they could envisage the type of animal that had left them, the direction in which it had moved, its size and weight, and often its age and state of health. Later they could tell the story of the hunt on the walls of caves through the medium of paint and the use of symbols, so that the metaphor could be understood by all.

This is the period when the brain size and intellectual capacity of humans was increasing three-fold: the era when the enlarging cortex could deal with more linguistic detail than the grunts of primitive man and grapple with group relationships and cultural developments (Eccles, 1984).

The second stage of sophistication in reading the signs came when they were used not just for immediate practical purposes in hunting and in protecting the group, or to relate and record past history, but were examined carefully in an attempt to foresee

the future and make predictions about where animals might be or what weather the signs foretold. (Ginzburg, 1988). As civilisations developed and more formal social structures prevailed, the use of divination became ritualised as an aid to governance, and the practitioners established their own specialist niche in the hierarchy. They built up categories of signs based on observations and classification of results, but their uncertainty of the truth of their predictions, and the dire consequences of being wrong, developed into a new method of expression, ambiguity, in itself an ingenious solution to a semantic problem. The ambiguous answer made a metaphor of the situation that offered alternative interpretations: it required of the petitioner great lucidity in framing the question to be asked and the ability to go back after the outcome of the problem was known to the language used, to see how accurately the prognostication of the diviner fitted the circumstances.

From the vaguely realistic representation of thoughts and perceptions in paint, clay and stone the sign took a further shape – the cuneiform, pictographic or hieroglyphic symbol. To read and interpret the hieroglyph required more than the ability to perceive and make inferences generated by the realistic depictions, it demanded the capacity for abstract thought. No longer could knowledge (as represented by the sign) be universal in the sense of cognitively accessible to all, for some in the community would have no skill in reading the hieroglyph and translating its metaphorical meaning, just as today a difference in competence is felt between the literate and non-literate members of the community.

For those fortunate enough to be comfortable with an abstract depiction of knowledge, skill in reading and recording the signs led to areas of expertise, particularly in defining knowledge about the natural world and in medicine. By observation of symptoms in many cases of a similar kind, looking for common elements, analysing these, combining them, classifying and writing down the results, the early Greek and Egyptian physicians could build up a picture of diseases and measure each new patient's symptoms against a criterion (Ginzburg, 1988). This practice of inductive and deductive skills may have led to an interest in the nature, quality and reliability of these processes, and hence into how proof of truth was to be obtained.

A further advancement in reading the signs was the advent of printing, with a rigid alphabet giving interpretative help only in the shape of the characters as a guide to reading the words, not in interpreting the abstract thoughts behind them. Similarly, the most abstract concepts in mathematics and logic could eventually be laid out in pared-down symbolic form: the sign as pure symbol, devoid of linguistic and cultural taint.

The question of the nature of the sign and how it should be interpreted has exercised philosophers throughout history. For the ancient Greeks there were two elements, explained by Eco (1984) as signification, where signs are interpreted in words selected to denote *what* a thing is, and reference, where one says *that* a thing is. Both elements are the core of the deeply embedded cognitive process, environmentally and culturally conditioned, that perceives signs and infers meaning from them.

In the fourteenth century, at the end of a dark period when the study of signs was limited by a belief in the sign as primarily an indicator of divine communication, William of Ockham and his contemporaries became interested in how ideas were formed from environmental stimuli on the organism, especially ideas which diverged from the normal awareness of objects into thoughts about the unreal and intangible (Deely, 1982).

According to Deely (1982), perhaps his most influential successor was Petrus Fonseca, whose *Institutionum Dialecticarum Libri Octo* in 1564 divided signs into 'formal' and 'instrumental', with the former referring to the structures within the mind that structured experience and the latter being the sensory stimulus or word that triggered ideas. In 1615 Bosserel further divided signs, placing the formal and instrumental aspects into one group, and supplementing this with a distinction between natural and conventional signs. Poinsett's treatise on the *Peri Hermeneias* of Aristotle, published in 1632, evinced that interpretation of signs was possible other than by using formal logic, and a new science, semiotics, was born. Poinsett's insight into the nature and purpose of the sign was that it was more than a sensory perception which could be identified and labelled – it was a generator of ideas and connections in the mind, and therefore making distinctions between the

representation and signification, between the *ens reale* and the *ens rationis*, was impractical and unnecessary (Deely, 1982).

It was acknowledged by these early writers that the ability to recognise and assign meaning to sensory signs could be common among the higher levels of creation, not just man, but scholars lacked any ability or desire to probe the animal world for signs of abstract thinking or metaphysical beliefs. The attention of the philosophers of semiosis therefore focused on the role of language as sign and, inevitably, on semantics in logic (Deely, 1982).

Very little material on semiotics has survived from the two centuries after the great output from Fonseca, Bossierel and Poinot. Perhaps too much attention was being expended on other aspects of philosophy – it was, after all, the great period of expansion and change in scientific methods, mirroring the new interest in the relationship between the people and the state, between the state and the church, between religion and science – or was it simply that the study was unfashionable or unrewarded?

However, by the mid-nineteenth century the battle lines were being drawn between the followers of Darwin and the apologists for the Victorian church in the philosophical discussions about nature, God and man, and the foundations of mathematical logic had also been laid. It was left to the American philosopher Peirce to develop the science of semiotics and through his practical experience of detective work and the great sweep of his thought give due weight to the power of signs in the arena of hypothesis and proof.

Within the world of signs, the process of semiosis was defined by Peirce (Peirce, 1960) as ‘an action or influence which is, or involves, an operation of three subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into an action between pairs’. Peirce says further that a sign is something by knowing which we know something more, thus engendering the notion of an endless progression of interpretation, where one fact upon examination yields the possibility of further ideas, stretching and challenging the thinker.

In Eco's explication of semiotics (1984), human beings are seen as 'signifying animals', gifted not only with the capacity to send and receive signs, but also to lay them up in memory, to compare them against previous usages, to allot actual and symbolic meaning to them, and on the level of higher cognitive skill, to use the signs and their interpretation to predict outcomes.

Eco's concept is peculiarly applicable to the investigative process, where the piecing together of one tiny bit of evidence with another, the reflection upon its place in the jigsaw and the weighing of alternative interpretations is woven into a dense tissue of thought, which, while never complete, can nevertheless fulfil the requirements of a potential prosecution.

For the investigator the first step of the reading of signs may well be the identification and labelling of material clues – 'this looks like blood', 'this chair is out of place', 'the back door is open'. In each of these examples the spontaneous thought in the investigator's mind arises from his comparison of what his entrenched learning and experience has told him 'ought to be' and what his senses tell him about the elements before him. Normally blood stays within the veins: if it is spilt, there must be some causal factor – disease, injury, intent – and he has a set routine to find out from whence it came; only then will he decide whether it is of importance to him. Similarly, 'a chair stands upright unless it is deliberately or inadvertently knocked over, whereupon it is righted....' and 'prudent people always have back doors shut'.

Such simple labelling of objects and comparison with past, equally basic, experiences is at the lowest level of reading the signs. Of more difficulty is deciding between alternative explanations and attaching the appropriate weight to the observation; more profound still is making an imaginative leap as to meaning, without conscious attention to the cognitive process. The 'clue' may be far more than a dissociated object which brings itself to the notice of the investigator, it may contain a complex cluster of significations, all of which have to be identified and assigned their value.

Nor are all clues material in kind, for information comes to the investigator by every sense, and an odour or a cough, a nervous tic or a sweaty handshake may exist as signs to be read. Indeed, some of the earliest accounts of successful police work involve skill in interpreting through more than one sense. The great Bow Street Runner of the 1750s, Sampson Wright, was feared by criminals for his purported ability to read the signs of guilt through extraordinary sensory perceptions; the magistrate at Bow Street, the ‘Blind Beak’ John Fielding, was said to be able to differentiate five thousand London criminals who had previously appeared before him by their distinctive smells. Victorian times saw attempts by Lombroso to classify the bodily characteristics of imprisoned criminals as a clue to identifying potential offenders, the Bertillon system measured precise physical details, and the use of fingerprints by Indian magistrates was refined and adopted by the English authorities as a valid means of identification. The recording of corneal patterns and then individual DNA was initiated in the twentieth century, but of more interest in the field of signs was criminal profiling, developed by the former Behavioural Science Unit (now the Investigative Support Unit) of the Federal Bureau of Investigation in the United States in an endeavour to isolate the signs that marked serial killers and use these both to identify offenders and to predict behaviour. All these attempts, from Lombroso to the FBI, are based on the belief that, if codified, signs may be universally understood.

There is another side to detecting the presence of clues, and that is the ability to detect their absence, to perceive not just what is there that could be expected, but what is not. Part of this devolves from the process whereby an investigator constructs a narrative of how the incident seems to have progressed, and searches for evidence to support his hypothesis (Reissman, 1993; Josselson, 2007). However, this sense that all has not been seen or told can also result from a sudden and inexplicable creative insight long before a careful comparison of assembled evidence can be made.

As always within the investigative entity, the investigator’s spontaneous labelling of items and actions is a product of his skill in understanding the messages received by his senses, such as in distinguishing differences and nuances (Ginzburg, 1988); of his competence with language; in his ability to select the appropriate word of

reference from his existing vocabulary or to devise a new one on valid semantic principles; and of the colouration (if not the definite bias) imposed on his cognition by his background and culture (Irving & Dunnighan, 1993).

There is also the corollary to the successful following from an hypothesis to the construction of a provable narrative of past events: the possibility that the investigator has followed a faulty path, using the same signs to create an alternative narrative that is alluring and plausible, but wrong. It requires a deep level of self-knowledge, confidence and courage to recognise when one is wrong and abandon the hope, time and effort expended on the false conjecture.

Thus the ability to read the signs is essential in investigative work, but is just the beginning of a more structured process of decision making in which interpretation of evidence, the forming of hypotheses, screening for bias, reasoning and logic lead to a level of proof that will carry conviction in court.

5.2 Logic and reasoning – the history and philosophy of decision making

To understand the elements and process of decision making, it is helpful to follow the thoughts of the greatest philosophers and logicians of the past and present, reading again many of the classical works encountered in my early years of study, and enjoying recent works on philosophical logic. The history and philosophy of decision making has been a long, earnest, fierce and incessant searching for truth; to find a way of proving beyond all doubt, so that decision making could be informed by a sure sense of procedural order, completeness, correctness, and perhaps conformity to a divine plan for the universe. The search has led through dialectics, formal systems of logic, the devising of mathematical formulae, the examination of semantics, the consideration of semiotics and the pursuit of artificial intelligence.

The earliest records show that for the ancients the establishing of truth was a process of debate, mind clashing on mind to hammer out a conclusion between the assertions of both protagonists. Socratic dialogue gave formality to the process with a technique of questioning – the *reductio ad absurdum* – that forced the proponent to

follow the ramifications of his arguments and establish an irrefutable chain of reasoning if he wished to claim truth.

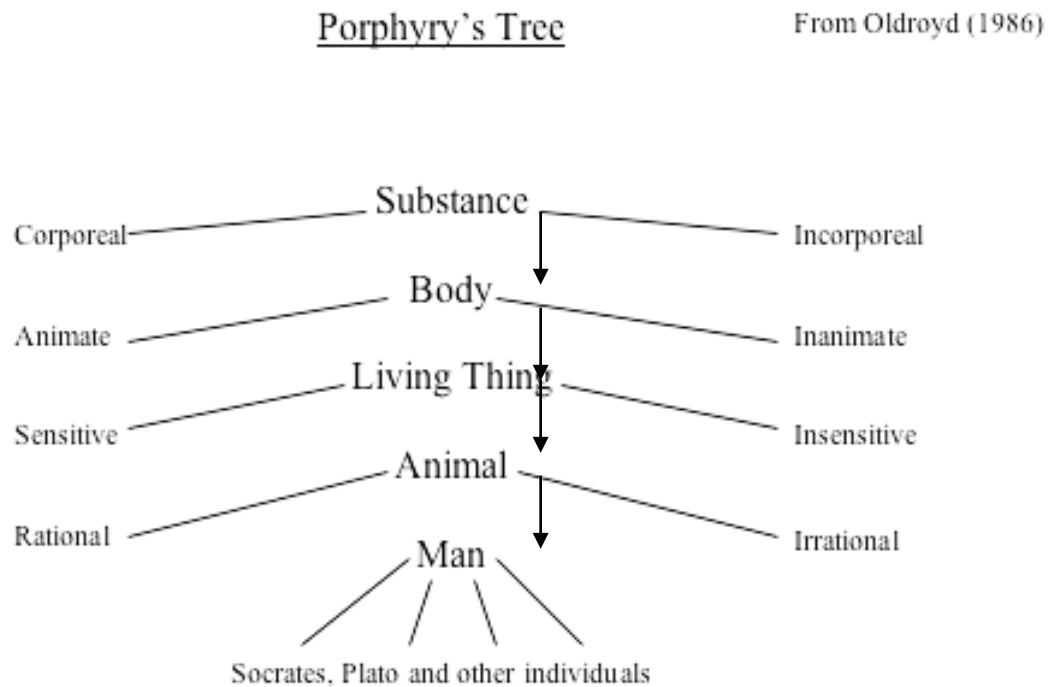
While the ability to debate and sustain an argument required a finely nuanced vocabulary and skills in communicating and convincing others, it was perhaps too personal in nature and more suited to legists than philosophers. Though it remained for centuries the prime method of advancing theories, the search began for a science of mathematical proof that could be stripped of human errors in reasoning.

Aristotle's treatise, *Posterior Analytics*, (Mure, 2008) marks the earliest known attempt to outline a demonstrative science in which arguments as to truth are deduced from premises established by proofs. This deduction is neither intuitive nor creative: it is a statement of how things are, properly categorised into four predications – truths that are universal and affirmed; or universal and denied; or particular and affirmed; or particular and denied. If a thing could be demonstrated, it could be proven. The logic of the method and the emphasis on proof underpinned philosophical argument for centuries.

Plato dwelt not only on the theory (or perhaps science) of how to establish the grounds for knowledge but also on its correspondence with levels of 'being' (Buchanan, 1977, Oldroyd, 1986). He foresaw that the process could develop into an endless regression of justifications if there were no mechanism to halt it, and that lacking such a mechanism, man must rely on an innate feeling for when the truth had been sufficiently proven. Thus, a glimmer of the notion of 'intuition' was expressed, as a practical way to forestall further argument.

Even more practical in guiding deduction from the general to the particular was the Tree of Porphyry (see Figure 8), a third-century predecessor of 'Twenty Questions' and computer systemology, which provided a pathway for making decisions on the nature of material by making choices at increasingly more specific levels from the general to the particular.

Figure 8: Porphyry's Tree



On the surface the Tree of Porphyry was a simple and useful tool using the questioner's previous experience and understandings to make comparisons with present examples and arrive at approximate decisions about them. This method of analysing material, making choices, allotting designations and devising more complicated questions occupied thinkers for a number of centuries until a state of stultification was reached.

One of the first to take a new approach was Francis Bacon, an empiricist who concluded in his *Novum Organum* in 1620 that 'the search for causes is the proper role for the scientific investigator' (Smeaton, 1962; Oldroyd, 1986). Focusing on nature, he opined that understanding could only be obtained by observation of the widest possible range of data. The observer was free to design instruments to check his understanding, for without knowing the cause, the effect could not be produced.

Thus began an emphasis on the process of induction, where the accumulation of sufficient data from empirical observations could lead to the development of low-level principles, thence to higher-level principles and perhaps, if there were enough observations, to the proposing of a general law about the matter. This law would

then give a framework for further deduction. Hooke (1635-1702), the author of *Micrographica*, expounded on these ideas, seeking a symmetry between the ‘synthetick’ method and the ‘analytick’ method, so that a series of hypotheses could be put to the test until a general proposition for the most certain knowledge was obtained. This search for a balance between induction and deduction in the search for truth occupied contemporary scientists and philosophers, with disputes in the scientific world both about experiments and their results, and about the methods by which discoveries should be made (Oldroyd, 1986).

One major school of thought followed the French philosopher Descartes in placing the emphasis on deduction. Descartes postulated that an individual knew he was thinking, however imperfectly (“cogito, ergo sum”), and therefore had a capacity for judgement against a criterion of perfection, which could only be God. With such a yardstick he could formulate and test ideas in a scientific manner and arrive at deductions about the nature of things (Tiles, 2002).

However, there was already the possibility that God could be left out of the equation and some other criterion used to establish truth. The answer was sought first in scientific methods where the criterion was not God but a watertight system of demonstrable truth, and in mathematical logic, where the use of symbols could clarify arguments and avoid the linguistic and cultural elements of semantics that clouded debate when only words were used. Examples of how these might be done can be drawn from the work of Herschel and Bolzano (Jacquette, 2002).

In 1830 Herschel published his *Preliminary Discourse on Natural Philosophy*, in which he separated scientific discovery from its verification. He followed Bacon in suggesting that discovery was a process of induction from basic facts to general laws; if an hypothesis were made, it must be verified from experiments, for the speculation inherent in an hypothesis might be fiction, rather than a ‘true cause’. He proposed a scientific method where complex empirical phenomena were analysed for relevant aspects; by methods of induction such as looking for agreement, difference, concomitant variations and residues, and by hypotheses, a putative law of nature might be devised. This could then be checked by deduction. Similarly, the law

of nature itself might by induction and hypothesis suggest a theory, which could be verified by deduction to predicted facts.

In *The Theory of Science* (1837), Bolzano developed the semantic concepts of logic, seeking to define and explain a valid deductive argument as one where the conclusion flows of necessity from the premises. To facilitate this, he used the mathematical technique of substitution on variables, which gave more fluidity and clarity to the process (Jacquette, 2002).

A gap began to emerge between the philosophers who were searching for a scientific, logical method of ascertaining truth based on mathematical formulae and those who still preferred the criterion of a perfect God and a process of intuition. This was exemplified by the distinctions between the work of Leibniz and Kant. Leibniz sought complete concepts in which all ideas relating to the concept were woven into an increasingly more specific combination of predicates or their denials, an *infimum species* under which nothing further could fall (Posy, 2002). Only when wholeness was achieved, with every aspect and concept accounted for, could any assertion be made about the truth or falseness of the object. God, of course, could always see every matter completely, both synchronically and diachronically, but man was limited both by his inability to grasp all perspectives of an object and by the shortness of his lifespan.

Ultimately, for Leibniz the source of human knowledge was perception by the senses, rather than by a form of intuition welling up from the mind or spirit. Kant, on the other hand, divided cognition into two categories, intuitions and concepts, with intuition being a singular representation and a concept a general or reflected presentation (Sher, 2002). In his *Critique of Pure Reason* Kant states, 'In whatever manner and by whatever means a cognition may relate to objects, *intuition* is that through which it is in immediate relation to them, and to which all thought as a means is directed. But intuition takes place only insofar as the object is given to us' (Kant, 1781). Kant isolates three marks of human intuition: there is singularity, there is immediacy, and there is the 'object-givingness'. Posy suggests that Kant took Leibniz's notion of an all-knowing divine intuition and replaced it with the notion of human perception, tailoring the arguments to fit the new focus (Posy, 2002). This

suggestion is reinforced by Jacquette (2002), who points out that Kant said that pure logic derived nothing from psychology; that it was general in nature; that there was no universal method of discovery, and that, furthermore, logic itself was twofold in nature, with a practical skill in reasoning underpinning the proper logic of theoretical inquiry (Posy, 2002).

Brandom maintains that Kant's theories changed the direction of philosophical attempts to establish methods for ascertaining truth from a concept of certainty to that of necessity, by which he means 'in accord with a rule', and that for Kant, human perceptions are always legitimate intuitions, not concepts (Brandom, 1994). Thus Leibniz attempts to derive a logical methodology from a need to measure up to the omniscience of God, and Kant elevates the empirical project over the mathematical through his respect for human intuition.

Frege (1848–1925), the German mathematician, was another philosopher who refused to bring psychology into logic: he felt that the meaning of sentences lay in the language used, not the mental state of the speaker. He stressed the deductive method, where claims must be accompanied by proof; his emphasis was on the language used for doing this, and he sought to replace traditional methods of analysing sentences with one based on functions, creating a sentential logic. By demonstrating the difference between 'sense' and 'reference', creating a principle of 'substitutivity' and inventing useful quantifier symbols, Frege was able to cope with opaque contexts where the claim is not a bald statement but is obfuscated by a prefatory 'X believes/says/is sure that...'.

While many philosophers of the age were content to expand further on the work of their predecessors, a different view of deduction was being expressed by Mill. In his *System of Logic*, published in 1843, he opposed the existing view of deduction's primacy and usefulness. He preferred to take a holistic view of the process of reasoning, finding that the logic of the syllogism was interpretative and consistent when used in a deductive context, but added nothing to the inferential process. Instead, he proposed five canons of induction for coping with empirical phenomena: the method of agreement; the method of difference; the joint method of agreement and difference; the method of residues; and the method of concomitant variations.

Where it proved not possible to observe and experiment with phenomena, Mill allowed a hypothetico-deductive method in three stages: using the canons of induction to ascertain laws relevant to those phenomena, deducing conclusions from the laws, then using experiments and observation to test the deductions (Oldroyd, 1986).

The focus shifted to phenomena that could not be experienced directly through the senses and yet could easily exist as a concept. Just as earlier generations had the faculty to envisage phlogiston theory, the philosopher's stone, the miracles of the saints and Eldorado, the author of *The Philosophy of the Inductive Sciences*, William Whewell (1794–1866), looking for examples of phenomena of this kind, evinced 'force' and 'light wave' as familiar concepts (Thagard, 1988).

Other philosophers followed the mathematical bent. Notable among these was Russell, whose *Principia Mathematica*, promulgated between 1910 and 1913, provided a useful universal language for expressing ideas clearly (Jacquette, 2002). Discussion flowered in the work of the Vienna Circle of philosophers in the 1920s; in the construction of truth tables, a method by which Wittgenstein could validate proofs semantically; in Einstein's focus on the creativity of the scientist (Oldroyd, 1986) and in Tarski's metalogical essay, *The Concept of Truth in Formalised Languages* (Sher, 2002).

A new slant to theory making was provided by Popper, who turned the focus of enquiry from attempting to prove truth into disproving it, since no theory can be verified once and for all (Oldroyd, 1986; Caprettini, 1988). His thoughts on problem solving within his three worlds (explicated on p 91) in some ways reflect the task of the investigator within the investigative entity.

Theories of decision making and the search for truth continue to be propounded. At no time have metaphysicians, mathematicians, logicians and philosophers faltered in their belief that it is possible to demonstrate truth, even though some chose to approach it through symbols and some through semantics, some by focusing on deductive methods and others by dwelling on induction.

The last word of this aspect of the search for truth is probably Einstein's, 'I hold it true that pure thought can grasp reality, as the ancients dreamed'.

5.3 The Abductive Process

Neither deduction or induction can ever add the smallest item to the data of perception and mere precepts do not constitute any knowledge applicable to any practical or theoretical use. All that makes knowledge applicable comes to us via abduction.

Charles S Peirce²

However much from earliest times the search for adducing truth from observations centred around the processes to be followed with facts already observed, there was another strand to philosophical thought which looked at the signs that constituted the seeds of data and how they were to be interpreted. It is in this work that much of relevance to the investigative process is to be found.

When considering hypotheses, scientists from Francis Bacon onwards favoured the method of induction, where the data from a series of many observations was compared for similarities until a point was reached where a general law was able to be framed that would allow for predictions about future observations of like material. Then from that general law deductions could be made. Over the succeeding centuries philosophers and scientists swung their attention from one process to the other, singularly, or in conjunction (as Hooke suggested), as their explorations demanded. Proponents of induction or deduction did not seem to understand that their chosen methods did not encourage spontaneity or allow for intuitive and innovative solutions to problems, because they focused on explicit knowledge and disregarded tacit knowledge and intuition.

It was the genius of the logician Peirce (1839–1914) that he saw the necessity of a third process, which he called abduction, to explore creative thought and the assigning of meaning to singular or ambiguous signs. In this he returned to the ideas expressed so much earlier by Aristotle in *Posterior Analytics* (Mure, 2008). For Peirce, deduction was the step by which the necessary and probable experiential consequences of an hypothesis are traced; the experimental testing of the hypothesis

is induction (Eco, 1988): but he saw that for useful problem-solving these two concepts were not enough.

Peirce's detective background had furnished him with many occasions when a notion of truth had blossomed in the mind of the investigator without his being able to say from whence it arose. He thought of this as 'an act of insight' (Eco & Sebeok, 1988), and as a valid human capacity. It remained to define the cognitive process that led to such insights, for he could not find any similar relation to creativity in the processes of induction and deduction. He began with the consideration of sensory stimuli, or 'sensation', which he regarded as the lowest level to which he could grant the status of hypothesis, though arbitrary in kind because the reaction to sensory stimuli arose from an individual's nature (Bonfantini & Proni, 1988). From there he examined the way the mind dealt with these signs, both in recognising the known and making conjectures about the unknown. He called this instinctual, a first step in scientific reasoning, where perceptions are subliminally measured against existing knowledge and new and often surprising connections made (Eco & Sebeok, 1988; Tomas, 1957). He was able to demonstrate this abductive process in his famous example marking the differences between the three methods. His demonstration reduced the concepts to their simplest explanation, by using bags of white beans to show how clear the difference in methods was.

He first drew a series of beans out of the unlabelled bag. By showing that they were unvaryingly white, he was able to propose that the bag was a bag of white beans, and that the method he used was induction, viz

Induction	<i>Case:</i>	These beans are from this bag
	<i>Result:</i>	These beans are white
∴	<i>Rule:</i>	All the beans in this bag are white

Next he showed that some beans he held in his hand, being white, could be proved by comparison to have come from the bag known to contain white beans: this was deduction.

Deduction:	<i>Rule:</i>	All the beans in this bag are white
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	<i>Case:</i>	The beans are from this bag
∴	<i>Result:</i>	These beans are white

The last demonstration was the most interesting – holding some white beans, he theorised that they must have come from a certain bag, which probably contained white beans. Only by opening the bag and discovering that it did indeed contain white beans that matched his sample, could he have proof of his hunch. He called this backwards process of making an hypothesis and then confirming it *retroduction*, and later *abduction*.

Abduction	<i>Rule:</i>	All the beans in this bag are white
	<i>Result:</i>	These beans are white
∴	<i>Case:</i>	These beans are from this bag

Peirce felt that this process of instinctual abduction was marked by its ‘groundlessness, its ubiquity, and its trustworthiness’: Ms 692 (Robin, 1967). He was concerned that the hypotheses derived from this method be of practical use (Schum, 2001). If the probability of a deductive conclusion is 1, states Tomas, following Peirce, the probability of an inductive or abductive conclusion is less than 1, but significantly greater than chance (Tomas, 1957). Abduction, therefore, allows for a prediction to be made, with some (but not absolute) certainty of success. Its use in investigation is pragmatic, for it allows for economy in the use of time and resources: an hypothesis can be postulated by an experienced and confident investigator from fewer clues. In fact, Peirce considered abduction was possible from a single fact which perplexed the investigator; from the discomfort of trying to fit it into his postulated narrative of the incident the investigator might derive a new hypothesis which could be tested against the whole conception.

Peirce was careful to dissociate the abductive process from ‘belief without proof’ arising from an individual’s ingrained opinions and thinking processes: he believed there were real yardsticks by which reasoning could be measured without resorting to human or divine inspiration (Tomas, 1957).

An investigator, confronted by an enigmatic object, situation or behaviour, may instinctively believe it is of interest to him in his task, though unable to define why this should be. He is encouraged not to ignore it, but to muse on it until he can form a preliminary hypothesis – in Peirce's terms, 'entertain it interrogatively'. By this Peirce means a process of comparing the present situation with similar experiences or knowledge the investigator has had in the past, deriving a probability of truth from that, then using inductive methods to confirm his belief. This is common scientific method, but true abduction results where the result of the thinking process is a combination of ideas or a principle that is totally new, unforeseen by the investigator but bursting on his mind with the certitude of truth.

Abduction is not necessarily a general process. According to Eco (1984), who opines that 'abduction is the tentative and hazardous tracing of a system of signification rules which will allow a sign to acquire its meaning', there are three types of abduction.

He first identifies the overcoded abduction, where the clues provided are recognised without much inferential effort as the Case of a particular Rule. A second category is the undercoded abduction, where several Rules may apply and a selection must be made, with no certainty that the Rule selected is the only correct one (Thagard, 1988). In both these types the level of inferential difficulty is not extreme, because examples of the Rules and their successful application are already known and connections require little imaginative effort.

The most interesting category is the creative abduction, where the Rule itself by which the Case is to be judged has to be invented *de novo*, with no certainty as yet that any explanation derived from it is valid. The thinker is convinced viscerally that his postulated explanation of the circumstances is correct, but he has to find ways in which to verify his hypothesis and confirm to his own satisfaction that his leap in faith is justified. For the investigator this requirement has strong legal and ethical implications.

The facts in an investigation can never be totally known, nor can verification ever be absolute. The abductive process allows the investigator to make a mesh of the facts

available, hoping to find an approximation of whole cloth from the sinuous interweaving of details. Like the angler visited with the certainty that a trout awaits him in a situation that contradicts all angling lore, the investigator's abduction marries knowledge, experience, personal skills and intuition to create his hypothesis.

Developing the role in law of this creative abduction, Schum (2001) examines a fourth level of abduction, meta-abduction, based on the work of Eco (1984, 1988) and Thagard (1998) in the fields of semiotics and scientific creativity, where the basic elements of the evidence may lead intuitively to a choice of abductions, rather than one sole outcome. Eco identifies, too, that there are instances where a creative abduction is made, but the creator cannot verify the intermediate stages between reading the sign and asserting its truth: the outcome is therefore less useful to an investigator, whose narrative of a crime must be provable in court.

Thagard refers to meta-abduction as rule-forming abduction. A theory is a collection of rules, combining simple, existential and analogical abductions into a higher level of complexity. Schum points out that meta-abduction is of particular use to lawyers and investigators, for the preparation of a court case, its prosecution and its defence hangs initially upon a series of creative hunches about the nature of a crime and the involvement of its perpetrators, with a chain of reasoning often unable to be fully verified. In view of courtroom dialectics there is also the need to examine alternative explanations of criminal phenomena and assess the linguistic weight of the language to be used in describing events. Creative abduction or meta-abduction do not militate against the construction of a case; on the contrary, they can focus the attention of the jurist on those aspects of his brief which are most questionable, most nebulous and most inspired by his knowledge of human behaviour.

The force of abductive thought and its use to the investigator can be seen in two main areas of his task: in his flair or intuition, and in his reasoning processes.

5.4 The role of intuition

Intuition is a product of accepted psycho-physiological processes of thought and behaviour that occur under particular conditions of personality, environment and experience.

Tony Bastick³

There comes a heady moment in the course of detective work when the detective is seized with the powerful conviction that the circumstances which face him have all the elements of a crime. To the average citizen this notion is called a hunch; to members of the police it may be referred to as a gut feeling, but to philosophers and logicians it has been known for centuries as intuition.

This feeling does not arise out of the ether, nor is it devoid of provenance. The experienced detective has had years developing his cognitive skills in ways that can help him shortcut the investigative process: he has selected himself for the task by certain predilections, habits of thought, musings and meditation, by supplementing his natural bent for investigation with training, consultation with others, practice, communication with the wider world and a shrewd understanding of what his legal and social boundaries are. He is deeply entrenched within the investigative entity, understanding, though sometimes imperfectly, that the ramifications of his task extend beyond the practical and political. Used as he is to considering and recording concrete physical evidence, and establishing the correct content and meaning of verbal and written evidence, he has also to internalise a way of dealing with the thoughts that swim uninvited into his head, the raising of the hairs on his neck or the frisson in his gut that indicate his senses are receiving, and his subconscious mind interpreting, the signs, even before he can apply the logical processes of ratiocination to them.

Though investigators may be distrustful or scornful of the hunch, the general tenor of police lore is that intuition does exist, since many credible examples of what appear to be flashes of investigative insight are known to them. However, without routine investigation and proof of the probability raised by the hunch (which may be precluded by time and resource considerations), few investigators will trust their intuition to override the set routines and careful collection and assessment of

evidence laid down by authors such as Weston and Wells (1990) that mark the initial stage of an investigation.

Whatever their unwillingness to give initial credence to their hunches, a major research project (Fall, 2002) identified that detectives, experienced uniformed officers and even police cadets were significantly more intuitive than control groups selected from the general population.

Perhaps one of the strangest aspects of intuition is how unsure scholars still are as to the source, nature and reliability of intuition. Plato saw it as a fall-back position: when all the powers of observation, logic and dialectic failed to establish proof completely, there could be an appeal to a form of intuition, an innate understanding that enough had been done to provide a fair similitude of truth. It was accredited existence, therefore, as a terminal authority in the normal process of logical reasoning.

However, over the centuries of the Dark Ages, the definition of intuition was muddled with the concepts of divine inspiration, prophetic utterances and extra-sensory perception, and accorded credence or otherwise in line with its supposed source: demonic influence or heavenly revelation, depending on the social status and acceptability of the person evincing intuitive powers. Later, with the evolution of scientific method, the focus centred on observations that could be treated empirically; for most scientists intuition was illogical, unnecessary and even embarrassing.

It was many centuries before the semiotic tradition offered validity to the role of creativity in interpreting signs and laid an emphasis on subliminal cognitive powers, restoring respectability to the notion of intuition virtually missing since the days of Aristotle.

When the scientists of the twentieth century began to concern themselves with behaviour, their first concerns were with the differences in source and mental processing between intuition and analytical thought (Patton, 2003; Myers, 2002). The latter involved rules, careful comparisons, exactitude in definitions, a logical

syntax, and verification of every step. By comparison, intuition was spontaneous, often speedy, uncertain in origin, unsusceptible to rules and offering no certainty of being correct. The one factor upon which theorists such as B F Skinner and Egon Brunswik seemed to agree was that intuition had a high emotional content and was based on a welter of simultaneous perceptions, feelings and experiences (Bastick, 1982).

The work of the early behaviourists was supplemented in the nineteen seventies and eighties by social psychologists such as Duval and Wicklund (1972) and Carver and Scheier (1988), who brought a focus on the nature of self-awareness and its consequences, particularly the importance of self-focus to the intensity of affective experience (Carver & Scheier, 2004). They suspected that it was not the experiences themselves that laid the foundation for intuitive skills, though useful information from them might have been stored in memory: it was the emotional set instilled in the individual by his feelings about events at the time, the significance he accorded them and his willingness to let them be manoeuvred by his subconscious mind in the act of cognitive creation.

Bastick sees intuition as an interaction of emotional states and cognitive processes, using the skills of recognition, acceptance, judgements, memories, associations, analogies, recentring and learning to generate a possible solution to a problem that is stressing the organism (Bastick, 1982). Its difference from other methods of processing data and experiences is that it is a preconscious process, both in the perception of evidence and in the processing of it (Bastick, 1982, p.139). Bastick cites Jung's definition: 'Intuition is also an irrational function: it is a perception of realities which are not known to consciousness, a perception, therefore, which comes by way of the unconscious'.

Myers considers that there are two ways of knowing: the automatic way, taking place in the unconscious mind, and the controlled way, where the mind is consciously at work (Myers, 2002). Epstein also identifies two ways of knowing, but designates them as experiential and rational, where experiential knowing is underpinned by an emotional attuning and the slower process of rational knowing is supported by logic and evidence (Epstein, 1990). For Rooney and Schneider,

intuition is encompassed in the idea of tacit knowledge, a vast reservoir of thoughts and emotions forming a basis for the individual's concept and comprehension of reality, and thus more powerful than any declarative or explicit knowledge (Rooney & Schneider, 2005).

The role of stress in engendering intuition is an interesting one. The relief of being able to explain a situation or dilemma, even if the explanation is unlikely or false, gives rise to the 'Eureka!' moment of breakthrough, and like that sudden abductive insight of Archimedes, is so enjoyable that the subconscious mind becomes more open to risking leaps in understanding in the future (Lehrer, 2009). If this theory is substantiated it could lead to the concept of a learning, or evolving, faculty of intuitive thought, based on success, or on failures which are not threatening to the individual's emotional set.

Current neuropsychological research into left brain/ right brain abilities could form part of understanding the nature and source of intuition. The research argues that the left and right lobes of the brain have different capabilities, the left brain housing primarily the areas that deal with language, analytical functions and reasoning, and the right brain mediating areas of creativity. Neuroscientist LeDoux's work on the architecture of the brain, and in particular the function of the amygdala, is cited by Pinizotto, Davis et al (2004) as offering a cerebral explanation of intuitive perceptions in police work, especially in the perception of danger.

Further research into brain function in pursuit of the notion of self-awareness, for example, the work of Stuss and his associates, cited in Carver (2003), focuses on the function of the frontal cortex. This is postulated to be primarily the organisation and management of information. A second function seems to relate to solving the problem of reaching goals when faced with an unfamiliar or challenging situation, in other words, an abductive process; the third function is labelled as consciousness, a concept of self-awareness much as Descartes predicated it to be. The chemical explanation is that high levels of dopamine in the cerebral cortex in the frontal lobes of the brain stimulate the areas controlling recall in the back of the brain, enabling more synaptic connections to be made and enhancing creativity, but what galvanises the body to raise the dopamine levels is less perfectly understood.

Laughlin (1997) takes the view that intuition is the product of cognitive processes occurring while disentrained from the neural network producing consciousness, and conjectures that these processes are genetically determined. The work of Sheldrake also supports a genetic basis to behaviour (1981). Research is ongoing into whether the frisson in the hairs on the neck, 'gut-feeling' or similar physical reaction during a moment of intuition is the result of perception by bodily organs through their own sensory response systems, rather than a purely cerebral function.

There are also insights from quantum theory. The neuroscientist Eccles and the philosopher Popper took the analogy of the particle and the wave from quantum physics in their joint work elucidating the roles of the self and the brain (Popper & Eccles, 1977). Eccles felt that the more subtle activities of the brain may result from an intensity of response to multiple simultaneous stimuli through the sensitivity of specific kinds of synapses, paralleling the known response of retinal cells to such stimuli.

Whether or not intuition is genetic in origin, or sourced in left or right lobes, or in a rare interlinkage between the two, or the result of chemical imbalance, it is possible that the ability is just a product of certain individuals' capacity for mental multi-tasking. Where the normal thinker can proceed from one thought or sensory perception to another following an engrained cognitive track, the intuitive thinker may be able to process many perceptions and emotions simultaneously. This ability to multi-task, to receive, analyse and evaluate information speedily and simultaneously, may be the source of detective flair. Weick considers that intuition is 'compressed expertise' (2001), presumably a type of rapid abduction. An analogy might be made between the diligent reader following a text along the lines from left to right and the superb reader 'photographing' the page as a whole and extracting key words, both to make sense of the information in the text and to answer her underlying question about how much of the page needs to be dwelt on more fully.

Allied to mental multi-tasking in intuitive people may be the ability to pick up and evaluate an individual's behaviour from unusually small pieces of information. First demonstrated by Ekman's isolation in a videorecorded interview of an infinitesimal

blink by a subject that proved later to have been an accurate predictor of behaviour, it has been described by Ambady and Rosenthal in their research on expressive behaviour as 'reading thin slices' (2003). They comment that the ability to make speedy judgements on very small pieces of evidential behaviour may be necessary for survival and adaptation to the environment; their in-depth search of 44 studies showed that such judgements have a predictive validity greater than chance.

Rapid abduction, however, requires more than speedy or multiple powers of processing information – it demands the ability to make links in the chain of reasoning using very small, tenuous, ambiguous or even non-existent pieces of information, and to do this extremely fast.

Whether the intuition proceeds from differences in the speed, scope, source or style of the investigator's preconscious mental processing, it must be acknowledged as having existence and be given creditability as a useful instrument in his evaluative task.

5.5 Decision making

For investigators, the decision-making process starts with the judgement that the elements existing within that particular investigative entity denote it as worthy of attention by the police. This is informed by the investigator's conscious assessment of the material evidence, communications and behaviour presented to him, coupled perhaps with a preconscious commitment fuelled by his intuition. It is the first milestone in a far-reaching chain of decisions that will need to be made as the case develops, but even this first judgement will reflect the investigator's experience, expectations, knowledge of his environment and confidence in his own powers. Once the decision that the incident requires investigation has been made, the first decisions relative to a plan of attack need to be made – how to create a pathway to prove the initial hypothesis, and the practical considerations of time, staff, resources, oversight and information all have to be settled. This constitutes the natural field of decision making in the initial investigative process.

There is a further practical consideration. Investigators usually work in a collegial manner, often in a tightly run team with both general and specific tasks organised in a familiar routine, so decisions made in the initial investigative process must be able to be communicated clearly and persuasively.

Because the possibility of error looms, decisions must be both legal and rational. Brown opines that rational decisions should have the qualities of universality, necessity and the existence of rules (1988). By universality he means the classical definition of the logicians: the decision conforms to a set of criteria which apply invariably. An unshakeable connection between the premises and the conclusion, so that the inevitability of their linking cannot be denied, provides the necessity. The rationality is further cemented by the decision's conformity to known rules.

Brown, however, makes a distinction between rational decision making and judgement (1980, p 139 et seq). Judgement is not necessarily made by following rules, but by the appropriate use of the available relevant information; it is a fallible process because it depends very much on the quantity and quality of the information and the thinker's ability to make sense of it. Because of this, judgement may not conform to scientific requirements for algorithms and proof, but its usefulness and power cannot be denied in human problems such as those faced by the investigator.

Dreyfus and Dreyfus, discarding the primacy of analytic thought, also underline the notion of human expertise as the key quality in decision making (1986). They see the expert as having progressed through stages of learning to an almost unconscious or automatic use of any separate or combined problem solving skill, independent of calculative rules when necessary.

Rooney and Schneider reinforce this with the notion that decision making should require a balance between wisdom and knowledge and should not just be founded on data, but should be deeply imbued with an appreciation of the knowledge's social, cultural and environmental sources and implications, a 'richness of reality matched with a richness of data' (Rooney & Schneider, 2005).

This perception may particularly be needed by those who see police decision making solely as part of a criminal justice system based on common law, statute, precedents and the protection of the community from the predations of the antisocial, rather than as part of an investigative entity within the universe of knowledge and problem solving. In Manning's terms, such a police-oriented view would require a criterial focus on four facets of decision making: degree of generality; visibility; complexity of the task and consequentiality (1977, p.141). While the first three considerations apply at any level to both case to case situations and general police policy making, the notion of consequentiality is vital to the stage of investigation where an offender has been identified, for it emphasises the importance for the suspect of the police decision whether or not to prosecute. In practical terms, the resources of the criminal justice system are limited by time, court space and personnel constraints, leading to demands for innovative ways to curtail proceedings. It might well be that when the first inklings of suspicion that the elements facing him suggest a narrative of crime are entertained by a basic investigator or policeman on the beat, his reaction is tempered by the need also to judge whether this is an incident deserving his attention and resources, whether it should be merely recorded and put aside, or whether it merits the specialist attention of a team of detectives. Probably some conscious evaluation of effort and expense versus the value of the expected outcome should be ongoing throughout the investigation, though in practice it appears that once a determination is made that the case should be thoroughly explored, considerations of expense are not allowed to shackle the work being done. Because the budget of any police department is not limitless, some shrewd assessment of probability of success between one potential prosecution and another will inevitably need to be made.

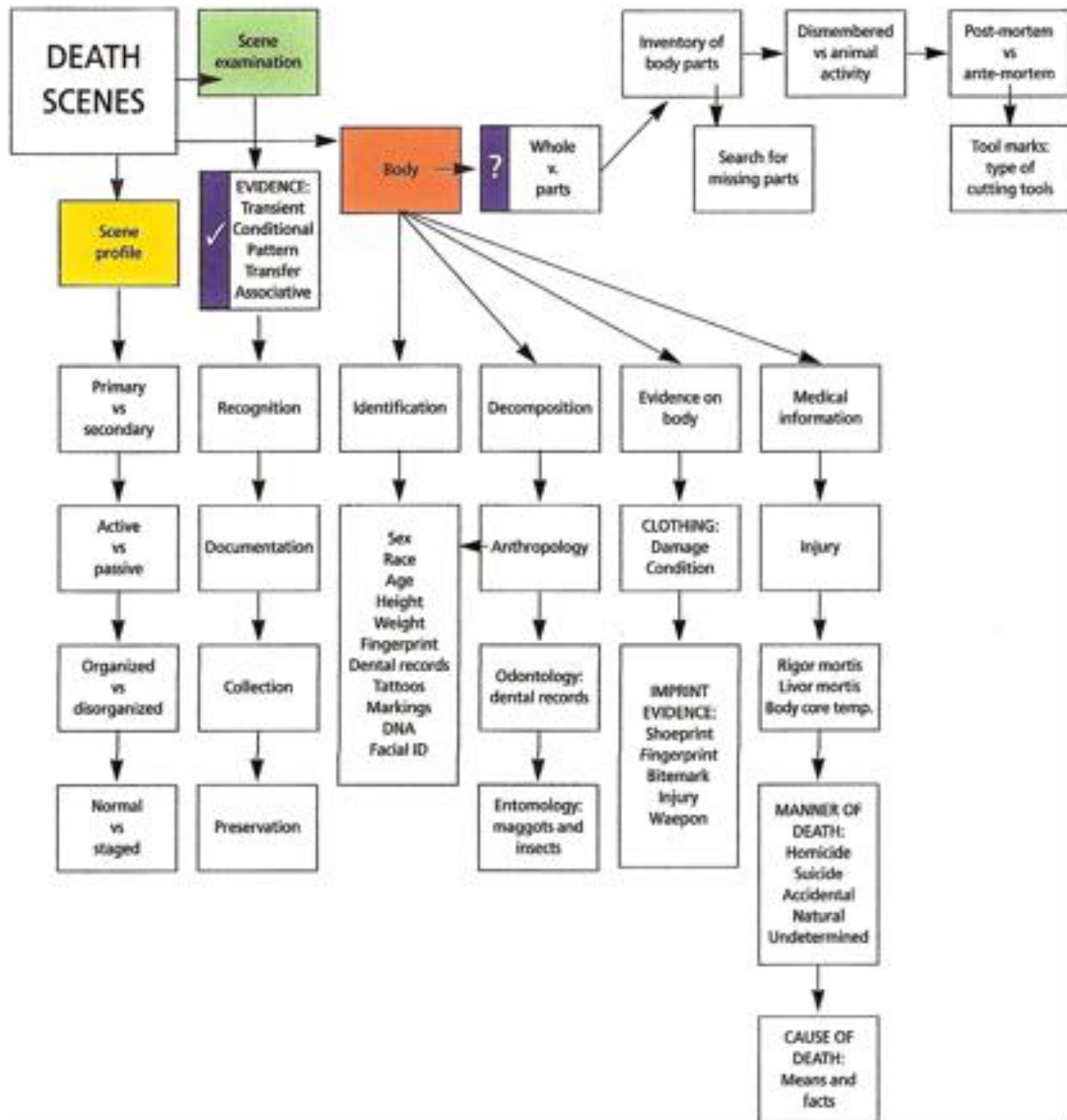
The nature of the problem to be solved is also relevant. Some investigative decisions are simple problem solving, involving the testing of initial hypotheses by deduction based on known rules, given confirmation by the detective's experience (Black, 1946) and possibly enlightened by intuition. Tuthill (1994) and Huber (1959) explain the role of scientific method in investigation as consisting merely of analysis, comparison and evaluation of evidence, with perhaps a further element of verification. They describe their forensic problem solving as working from the unknown to the known; this process concurs with the popular conception of investigative work delineated in detective stories: as Truzzi points out, the three

elements in the Sherlock Holmes stories, the first consistent series of short stories in the genre, are the detective's need for knowledge, observation and deduction (1988), surely showing a dependence on scientific method rather than abductive flair.

Other decisions are more taxing, requiring more, or more labyrinthine, information and higher levels of thinking skills than mere recall, comprehension, analysis and synthesis of data. Irving adds to the list the practical assessment of probabilities, costs and benefits of outcomes in the given situation (1993), much as suggested by Manning and Hawkins (1989). Tuthill (1994) considers verification to be of equal importance to analysis, comparison and evaluation in criminalistics.

Sometimes the initial investigative decision making process can be elucidated by the use of a 'logic tree' (Lee, 2005). This is a diagrammatic representation based on searching for evidence, considering it, and making choices for subsequent actions. This method is particularly helpful in ensuring all aspects of the scene have been considered and that no evidential data has been overlooked. Figure 9 shows a logic tree devised by Dr Henry Lee, a leading forensic scientist, to be used at a death scene where no presumption of the cause of death has been made: practical courses to follow are suggested and a useful scene profile is eventually created. The logic tree is very specific in its purpose, which is to wrest all the information that is available out of the scene – it aids decisions about activities, to provide data as a basis for ratiocination, but nothing more.

Figure 9: Logic tree for examining a death scene
(Taken from Henry Lee's *Crime Scene Handbook*, 2005)



More subtle, and potentially more useful to the investigator, is the method outlined by Hammond, Keeney and Raffia (1999). Their first requirement is clarity in defining the problem to be explored and a firm focus on the objectives to be sought. In investigative terms, this is helpful in envisaging the scope of the enquiry and the staff, time and resources that will be needed. They expound a method of making tradeoffs when time and resources are low, being creative when pondering alternatives for action and dealing with uncertainty. In particular, they provide valuable advice on how to weigh alternatives; how to get down to bedrock; how to assign values to possibilities and how to link current and future decisions.

The most difficult decision making is where the information is suspect or lacking and few precedents for action exist, but a decision cannot be avoided or postponed. Agor's massive study of 3000 managers (1986) showed that this is the moment when an intuition or gut feeling for a possible solution is most helpful, particularly if the manager has the confidence to act on the intuition. Agor suggests that it is possible to nourish and develop intuitive decision making skills, but the process possibly takes more time and commitment than a busy investigator can spare. Where Agor is confident of the efficacy of intuition in decision making, Myers (2002) is more cautious, citing many faults of human nature in too readily accepting, distorting or misinterpreting intuitions. These difficulties are robustly underlined by Bonabeau, whose contention is that intuition should not be trusted in making business decisions (2003).

There are other connotations of fallibility in the decision-making process. In police work, when a dearth of information leads to a stalemate, it would be fortuitous if the investigator were visited by a flash of intuition that enabled a sturdy hypothesis to be entertained; under normal circumstances, with a pragmatic detective, what Dreyfus and Dreyfus (1986) call 'deliberative rationality' is more likely to appeal as a productive path to follow. By this they mean an economy of effort where the thinker does not attempt consciously to analyse the separate elements of the context and dwell on them at length in isolation, but accepts the intuition as a whole and tests it as a unified hypothesis worthy of deliberation. Mirroring Polanyi's theory of the importance of the tacit dimension of thought (1967), this approach recognises and embodies the tacit dimension in the testing process.

Recent research by Lehrer (2009) emphasises the role of the orbitofrontal cortex in integrating visceral emotions into the decision making process (p 24); he claims it to be the only brain region able to take an abstract principle and apply it in an unfamiliar context to come up with an entirely original solution (p 127). Where there is an overwhelming amount of data to be sorted (and this would be typical of a thorough police investigation), the limitations of the biological brain make rational analysis difficult and engender fears (p 131). Therefore humans must generate decisions more spontaneously by using the problem-solving abilities of the prefrontal cortex in conjunction with the working memory.

For an investigator, the outcome of intuition, reasoning, verifying and decision making must be proof that will hold up in court. Schum (2001) proffers three major credentials of the evidence upon which proof rests – its relevance, its credibility and its probative force – none of which precludes the use of abductive thought in the initial investigative process.

For the investigator working systematically at the interface between the case in hand and the infinite world of knowledge, the preferred decision making process may well be a reliance on tried methods of induction and deduction, conforming to validated police procedures and tempered by the availability and speed of access of known sources of data. When dealing with lacunae in the narrative of the case he is constructing, his preparedness to make imaginative speculations from ambiguous data or to accept his gut feelings may depend upon previous successful experiences, on how such intuitions are received by his fellow investigators, and his confidence in his own judgement.

5.6 Problem solving by artificial intelligence

So far it has been presumed that the figure at the centre of the investigative entity is a human investigator, trained but fallible. Moves are afoot, however, to see whether this person could be supplemented or supplanted by a system of artificial intelligence.

There are advantages to be perceived in the putative system of artificial intelligence. Presumably it could be a system largely stripped of those linguistic, cultural and value-specific elements that deny universality to human systems. The human brain grows tired and the human body needs nourishment and rest; its psychological and metaphysical demands are not clearly understood and there is always the prospect of inconvenient breakdown if the workload is too high. Humans have a touching but probably erroneous belief that machines are sturdier and less vulnerable to problems than they.

In the early days of the development of artificial intelligence, when it was the hope of the logical-positivist school of scientists that validity might be given to scientific theories by processes devoid of human subjectivity, some philosophers expressed a distaste for allowing machines to make decisions that had always been expected to arise from rational human thought, enlightened by scientific knowledge and the application of an ethical values system.

Turing opined long ago that if the qualities that were thought to make man superior to a computer were carefully delineated, it would be perfectly possible to replicate them in a computer (1950). Popper, on the other hand, predicted that it would prove impossible to build an electronic computer with conscious subjective experience, to carry out the function of the brain in guiding and balancing an organism and helping it to stay alive (Popper & Eccles, 1977, p 208). In this he was supported by the neurophysiologist Eccles, whose studies of the human cerebral cortex revealed the immense and possibly unmatchable complexity, subtlety and power of its neuronal activity (Popper & Eccles, 1977; Eccles, 1984).

The doubts expressed by Popper and Eccles seemed to be confirmed by the unsuccessful attempts of the ingenious Japanese computer industry to build an artificial brain, abandoned in the nineteen-nineties after heroic and costly efforts. As Sveiby (1997) points out, the relationship between a computer and its inputs of information does not mirror that between a human brain and human knowledge.

Undaunted by their task, inventors continued to build increasingly more complex and diversified computers, from simple robotics and process automation to artificial

intelligence systems of colossal sweep and strength, resulting in the definition of a new science, information technology, with its accompanying retinue of philosophers, creators, practitioners, believers, sceptics and Luddites.

Their task is not intrinsically difficult. In general, problem solving by artificial intelligence, as described by Wos and Fitelson, involves preferring general statements over less general, avoiding person-oriented reasoning and involving no instantiation reasoning. They list the basic elements of automated reasoning as

- a language for presenting the problem under study;
- types of reasoning (inference rules) for drawing conclusions, some of which are adjoined to the supplied information;
- strategies for controlling the reasoning;
- a means for simplifying and canonising information;
- a means of purging types of redundant information; and
- a means for determining assignment completion (proof finding) (Wos & Fitelson, 2002, p 712).

Using these criteria, setting up a computer-based problem solving system for investigative work would not be impossible. Already during the course of an investigation most data is entered on the police computer and use is made of information previously gathered, for analysis and comparison. The part supposedly played by the investigator's intuition might be mimicked also. The work done by theorists such as Zadeh (Grandy, 2002) in identifying 'fuzzy logic', based on the human use of fuzzy approximations in perception, means that programs could be devised to parallel the human abductive process in hypothesising with incomplete or ambiguous data. Already a robot has been devised that is aware of itself, can generate hypotheses and select a solution to its difficulties (O'Brien, 2008). In general, attitudes among the public seem to be somewhat ambivalent: some may feel that the essence of artificial intelligence is that should be independent of the human body; however, other people may wish to establish limits between using computer systems to assist their own decision making and letting the computer provide the decision for them.

Police history shows that the need for faster, more accurate and more accessible recording of data has long been recognised. A Committee on Uniform Crime Records was formed by the International Association of Chiefs of Police in 1927; in the United States some years later legislation was passed to authorise the Federal Bureau of Investigation to act as a clearing house for all data. It soon became obvious that the mere collection of data did not resolve the central problem of how to structure, access, use and communicate the material gathered. Many law enforcement agencies became slaves to information accumulation without gaining much practical utility from the effort required to obtain it (Cameron, 1990, p 36).

By 1985 microcomputers were routinely used by many agencies for relatively humdrum tasks involving comparisons, such as fingerprints, photo identifications and modus operandi, and for management functions. As the hardware became cheaper and the software more sophisticated, many police departments became devoted to the development of computer systems, expecting to save time on routine tasks, thus releasing experienced investigators to problem solve. It took further time before the idea of using the machine to replicate the work of the investigator in problem solving was conceived.

Progress has been slow. It was the mid eighties before the first Criminal Investigative Analysis system was devised in the United States of America to collect data, compare and offer probabilities on behavioural aspects of crime, particularly in connection with homicide (Stephens, 1997). This was soon followed by the Canadian system ViCLAS, a programme on the same lines but peculiarly applicable to Canadian crime patterns involving a wider range of crimes.

In 1990 the Australian Bureau of Crime Investigation sent two officers to train in crime investigation analysis, leading to the establishment in 1995, under ABCI jurisdiction, of the Australian Violent Crime Analysis Centre. Its initial role was to undertake threat analysis, but it was able to offer Criminal Investigation Analysis support to forces throughout Australia, as well as more mundane databases such as missing persons information.

The United Kingdom was dilatory in creating the HOLMES police database late last century, a lag ascribed to the multiplicity of local police forces, the financial outlay required and the resistance of police themselves. A system called Crimelink was launched in 2004, but was limited by its need for the selection of search areas to be made by a human operator (Graham-Rowe, 2004). Unlike the demand for computer analysis systems elsewhere, which was primarily initiated by police agencies themselves, in Great Britain the programmes were driven by the universities, whose ground-breaking research in information technology and strength in the social sciences led to the development of courses in investigative psychology (Stephens, 1997).

In the 21st century in the United States there have been two major programs in the crime resolution area. The first is the COPLINK program, developed by the University of Arizona's Artificial Intelligence Laboratory in association with the Tucson and Phoenix Police Departments (Chen, Schroeder et al, February 2003). This system has two components: COPLINK Connect, for the facile sharing of information between various police departments, and COPLINK Detect, where associations are engendered from diverse data from a variety of sources to reveal criminal links. Indications are that the program is easy to operate and has a pleasing level of success in making helpful associations (Chen, Zeng et al, January 2003).

The second program is the CSSCP – the Classification System for Serial Criminal Patterns – devised computer scientists at DePaul University in Chicago. They studied the techniques of six senior detectives and designed pattern-recognition software to replicate their skills. The underlying concept was that criminals were creatures of habit and that serial offenders could be traced from speedy analysis of information from multiple sources, which their software, which uses a Kohonen neural network, was admirably equipped to do (Jones, 2005). In essence, a Kohonen neural network is a computer system that can simulate the functioning of the human brain; its characteristics include:

- information can be retrieved even if some neural nodes fail;
- stored data can be modified quickly when new information is input;
- relationships and trends can be discovered in a large database; and

- there is the ability to solve complex problems for which all information is not present (Stair & Reynolds, 2003).

By using the Kohonen neural network for the CSSCP, the system can search for patterns in the data without the help of a human programmer or computer operator, an element which sets CSSCP apart from the United Kingdom's Crimelink and the American COPNET and its imitators (Graham-Rowe, 2004).

Thus the current examples of electronic systems for investigative problem solving range from simple recording and manipulation of forensic data to attempts to replicate the decision making process. The best of them attempt to verify the forensic soundness of information, as a tool for further intuition by the investigator using them. In no way can there yet be said to be the electronic equivalent of human intuitive flair.

5.7 Summary

Decision making is the central function of the Investigative Entity model. The first aspect of the process considered was the investigator's skills in accumulating information, and it was posited that he manages knowledge by reading the signs he obtains, both materially and intuitively, through his interrogative interface with the architecture of knowledge.

The second aspect of the process was how the information's signification and value in building a cohesive case could be assessed. This entailed discussion of how material was to be verified, and logical application made of it, in constructing a narrative of events devoid of flaws of reasoning. An account of the historical search for ideal methods of verification offered enlightenment on this process.

The third necessity was to consider the role of intuition, and the importance of abductive insight in investigative work. Linked to this was the quantity, quality and variety of individual investigator's tacit knowledge, as representing knowledge that may not have been captured and made available in formal police knowledge-management systems.

The Investigative Entity model focuses on the work of investigation being performed by humans working as individuals or in teams. However, in the future their monopoly on the task may be challenged by forms of artificial intelligence created to do the same accumulation, verification and manipulation of knowledge, so the chapter ends with a brief exploration of this sub-topic, especially as it relates to the intuitive insight that is still almost uniquely a human prerogative.

Chapter Six

Teamwork within the investigative entity: review of the literature and development of criteria for an investigative team

Overview

While at the core of some investigations there may be a lone investigator, the size and complexity of many cases presenting themselves for solution will require the efforts of a team of investigators. It is postulated that there are several ways of viewing this investigative team. In this chapter the first task was to relate the nature of investigative teamwork within the Investigative Entity model to concepts in the literature.

The first possibility is that the investigative task has the recognised importance, and its practitioners the autonomy, expertise and dedication that mark the work of a profession, rather than a service.

The second option is to view the team as a ‘community of purpose’, dedicated to solving each incident through routine procedures, attention to detail, careful verification of facts and perhaps a certain element of abductive enlightenment that might be designated intuition.

The third possibility is that the ‘community of purpose’ may more tellingly be described as a ‘community of practice’, colleagues whose work together provides not only resolution of the task but other distinguishable outcomes, such as learning and innovation, that confirm this definition.

The nature of each type of community will influence the way in which knowledge is communicated, shared and managed to make decisions. This chapter contains an appraisal and understanding of the wide and complex interaction between members of an investigative team, composed of individual investigators, sharing a common training, but each with his own strengths, skills and experiences, engaged on a common task. In the process it may be possible to discern sharing practices, learning outcomes and innovation that could mark the eventual focus group as differing from

a profession, exhibiting more commitment to group-identity than a community of purpose, and perhaps qualifying to be an investigative community of practice.

6.1 Criminal investigation as a profession

A police agency is de facto a service, but the members of an investigative team might well be regarded as forming part of a profession.

A useful yardstick for measuring whether a group is a profession is provided by the list of characteristics devised by Cheetham and Chivers (2005, p 7). They suggest that a profession:

- confers status within society;
- is organised into some sort of professional body;
- is learned – requires prolonged and specialised training and education;
- is altruistic – oriented towards service rather than profit;
- offers autonomy within job role;
- is informed by an ethical code of some kind;
- is non-commercial;
- has collective influence within society;
- is self-regulating;
- is collegial; and
- is client-focused.

It would be difficult to deny that a criminal investigation agency to some extent fulfils these criteria. Essentially, each investigator, having undergone the same prolonged training, testing and equipping for the task as his colleagues, may be regarded as equally capable of performing it, just as members of the acknowledged professions are similarly qualified compared with each other. The autonomy characteristic of traditional professions is reflected in the investigative group by the power of discretionary decision making enjoyed by police agents (Kay, 1996).

A profession is marked first by its skill in interpreting its area of expertise, and by the careful and exclusive demarcations it makes as a consequence of this. While a substantial body of theory may underlie their task, the explicit knowledge within it

may be freely available to all, and it may be the group's tacit knowledge and power of interpretation in individual cases that secures its status (Schön,1995).

To keep the exclusivity, a profession typically demands of its aspirants a stiff recruitment process, long study and formal accreditation. From this derives a code of practice, professional ethics and methods to deal with members who fail to meet its standards. Once the aspirant has met the requirements, been tested and found worthy, the rewards are shared in a far more relaxed atmosphere of trust, respect and pride in performance.

It is also possible that there is a difference in working conditions between a service and a profession. Since each accredited professional has met the same criteria, and there are procedures in place for dealing with recalcitrants, there may be less need for oversight and hierarchic management. The profession has set its own limits and constraints, which may mitigate the force of constraints set by the outside world upon its members. In this respect the established parameters of a profession may vary from the opportunities and constraints experienced by either a service agency or an investigative team working as a community of practice.

It should be able to be taken for granted in a profession that members will be eager to learn, to share explicit knowledge and its sources with each other. If there is a strong spirit of professionalism there should be an imperative to share this knowledge openly with the world also, the proviso being that it is understood that it is the specialised skill of the members in manipulating that knowledge that creates their professionalism (Cheetham & Chivers, 2005).

Efforts to transform police agencies into a profession have begun by focusing on improving the status of police credentials by providing more training and more opportunities for individual members to develop sophisticated skills and relevant university qualifications. This has been matched by changes in police organisational structures, with better pay and conditions to raise perceived social status (Smith & Lanyon, 2008).

The second stage has been to create a university discipline, derived from law, political science and social sciences, to provide a body of theory, to inculcate habits of research and reflection, and to interweave the practice of investigative skills into the architecture of knowledge at a maximal level.

A major effort by practitioners to professionalise police agencies in the Pacific area has been the founding of the Australasian Institute of Policing, with the aim of gaining recognition as a profession by promoting qualifications, standards, research, ethics and certification of practitioners (Smith & Lanyon, 2008).

However, though there is now a quantity of research into their area of expertise and many reflective practitioners among investigative teams, the hierarchical nature of many police agencies and the reality that their task takes place in a justice environment teeming with practitioners of the longer-standing professions of law and forensic science, makes acceptance of investigation as a distinct profession hard to achieve. While an interesting matter for speculation, the concept of an investigative team as members of a profession cannot yet be entertained; therefore, in this research the option of denoting the practice of investigation as a profession is not further explored.

6.2 Investigative teamwork

If the investigative team may not yet exhibit all the characteristics of a profession, its performance may still show integrity and excellence. While truly there may be no 'typical' investigative team, there are elements which pertain universally to police investigations and provide a regular basis for the team's interaction. These include functional matters such as the division of tasks and the following of standard procedures by which the work is done. Many of these matters are amenable to formulaic solutions; for example, Bizzack (1991) cites an example where the Florida chapter of the Association of Police Planning and Research developed a formula which enables investigative time needed per case to be efficiently predicted; but it would be expected that these solutions are subject to regular administrative review, even though procedural changes may be difficult or unwelcome to the organisation.

There are also the routine channels for communication about ongoing investigations: meetings, briefings, memoranda, worksheets, computer links and the like; probably informal channels for communication, such as the grapevine and locker room gossip, are also found established, recognised and used by police everywhere.

Because of their central importance, Dance (1977) has attempted to isolate the conceptual concepts in this communication within groups. His list includes symbols/verbal/speech; understanding; interaction/relationship/social process; reduction of uncertainty; process; transfer/transmission/interchange/linking/binding; commonality; channel/carrier/means/route; replicating memories; discriminative response/behaviour modifying/response/change; stimuli; intentional; time/situation; and power. In some respects, his list mirrors elements of the wider environment portrayed in the Investigative Entity model (Chapter Four), though his focus is on group communication in general rather than the communication specific to the investigative process.

The primacy of communication as the enabler of co-ordinated activity is also stressed by Postmes (2003). He points out the advantages of accommodating one's content and style of communication in order to present oneself as proto-typical of the in-group: this can be done by choice and intensity of topic and language, by varying speech rates and response latency, by turn duration, and even by accent mobility. It is interesting that these communicative behaviours, so powerful in creating rapport during interviews with victims, witnesses and suspects, are suggested here as tools to becoming accepted into the investigative team. Postmes sees this bending to the usages of the in-group as including protective colouration such as clothing similar to that of others; this could perhaps be extended to 'regular' appearance and grooming, reflective gestures, even to standardised accoutrements.

This group-identification theory of communication is extended from the proximal world into the world of computer-mediated communication by Lea, Spears and Rogers (2003). Their contention is that computer-mediated communication overcomes the disadvantages of space, time and collocation restrictions for working groups, and encourages a wider range of involvement and opinion. They warn,

however, that trust and accountability may be reduced, and that it is difficult to impart subtle norms and desirable behaviour without face-to-face contact.

Of more interest are the less easily quantifiable aspects of the investigative environment – the assessment of resultant value for time and resources expended; the way short-term pressure, long-term stress, friction and rivalries are handled; the amount and quality of intra-group communication; the perception that the group is developing, learning and innovating; and job satisfaction. Within the last category come the investigators' satisfaction with the way they are deployed, the quality of their supervision, the opportunities they are provided, the level of autonomy each has, the fairness of the division of tasks and resources, their ease of access to information. This is mirrored by the level of satisfaction with their performance of those who employ them, from their immediate supervisor to the Commissioner or Chief of Police, the Minister of Police or Home Secretary, and ultimately the public they serve.

There is a possibility that within a criminal investigation department there are two types of team. The first is a fluid group of general practitioners, available when needed, and with interchangeable skills. Within this group there may be investigators with specific known strengths, who are called into teams to fill a particular role and are thus employed sequentially in different teams; there may also be a core group of experienced staff who usually work together, adding experts to their numbers as needed. For many of these core teams, the type of group is defined by the geographical size of the area they cover, the number and complexity of the incidents with which they deal, and the number of permanent detectives that can be funded.

The second type of team is where a selected group of investigators has been welded into a section working in a specific area, such as anti-terrorism, homicide or child abuse. The remit given to this group will theoretically be wider: it may entail input into policy, the development of new procedures and a more speculative approach to knowledge. The composition of the group may extend over a long period of time and be relatively settled, and while the team does not necessarily need geographical co-location, it may have a separate budget and a more autonomous place in the chain of command than regular investigative teams in the same agency.

There may come a point at which the two types of team cannot be regarded as merely versions of a conventional homogeneous investigative working group, but must be seen as separate communities, fired by the same motives and task, but widely varying in interaction, communication, identity, focus and the amount of learning and innovation they create.

6.2.1 Communities of purpose

Any investigative team may well be called a community of *purpose*.

This suggests that goals are well understood by members of the team, and that there is general consent to the routines and procedures expected of them in managing investigations and achieving results. When an investigation is initiated, there is understanding of how the tasks will be allocated; how the time, personnel and resources available will be appraised and apportioned; how health and safety concerns will be dealt with; what communication and records will be required (and the systems for handling them); and what levels of courage, ethical behaviour and commitment will be demanded.

This community of purpose will be influenced also by the type of police organisation within which it is embedded. Langworthy (1986) analyses types of police organisations and compares their structures with those postulated by standard theories of organisational structure. While taking the approach that the size of the agency is a determining variable, since without a certain level of personnel there is no scope for specialisation or complex hierarchies, he nevertheless feels that the focus should be on the way the agency carries out its prescribed function – its congruity of task, structure and technology, and that this relationship to the environment is crucial.

His work builds on Wilson's seminal theory (1968) that police agencies are categorised according to the way they perform their basic tasks of law and order: Wilson calls his three types the watchman agency, the legalistic and the service-oriented. In his view the watchman agencies reflect the concept of wise and

experienced generalist policemen on the beat maintaining law and order, with considerable discretion over the action to be taken at each incident; this generalist approach is diametrically opposite to agencies where there is an elaborate service-orientated hierarchy and a division of tasks into specialised sections. The generalist approach is also in direct contrast to legalistic agencies, whose members treat breaches by strict adherence to the law, and little power of discretion is considered necessary. A service agency by definition tackles order maintenance and law enforcement, but in many jurisdictions is also the default agency for non-legal matters.

No police agency may be completely homogeneous. De Laat and Broer (2004), using the Dutch police example, consider that within the police there are no fewer than three occupational subcultures: street cops, management cops and policy cops (presumably investigators fall within the category of 'street cop'). Only with the emergence of network tools has it been possible in this agency to make crossovers between subcultures.

On the surface an investigative team working as a community of purpose can be viewed from the 'functional perspective' outlined by Cummings and Ancona (2005). Their principles can be amplified as:

- Shared goals, which remain constant, though membership, numbers, structure, and task timeframes may be changed;
- Group membership is based on expertise, tasks are shared fairly, there is a sense of commitment;
- There are set routines, and some norms for behaviour;
- The group is responsive to the external environment and the demands of its managers and clients; it understands the sources, funding and limits of its resources.

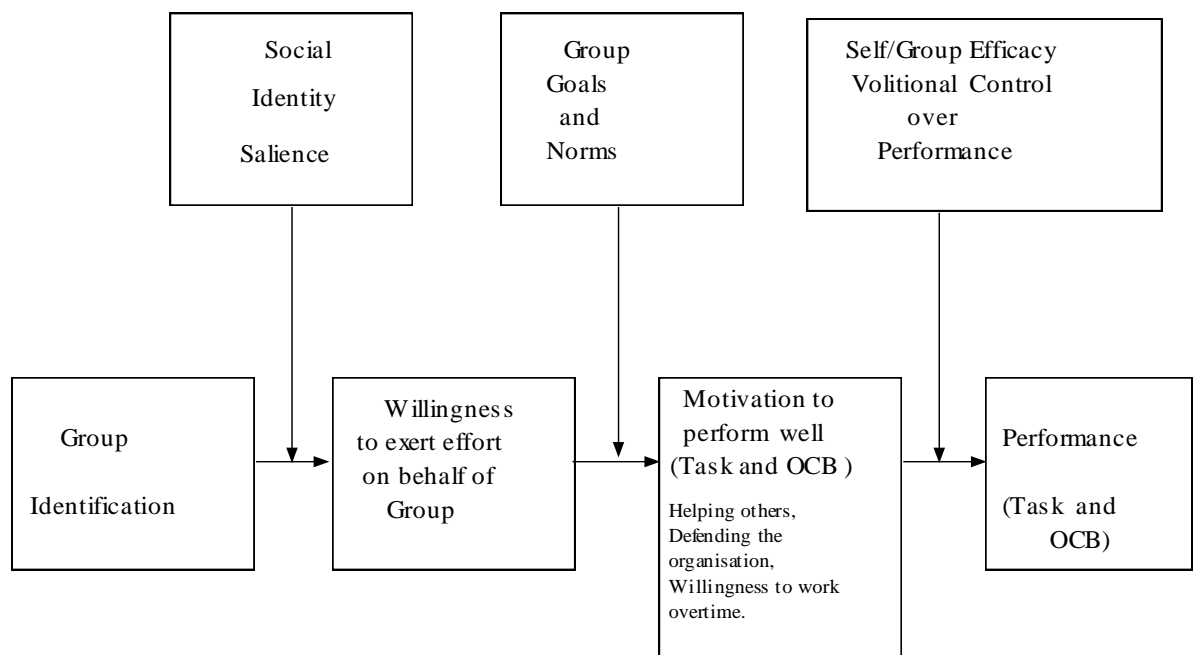
By precluding consideration of intra-group dynamics, personal aspects and social concerns, the functional perspective allows a somewhat blinkered focus on work inputs and outputs, perhaps appropriate to a community of purpose.

A converse view is expressed by Armelius and Armelius (2000). They consider the task to be a motivating force that generates feelings and puts pressure on the group to

act in certain ways; in this concept the group culture is dependent on the task the group is working with. Where the tasks are dangerous or distasteful (as must often pervade in investigative work), the authors would expect the group to develop strategies to enable them to manage the feelings engendered so that the task could be accomplished. Some of these strategies might be supportive, others defensive, but they would allow anxiety to be reduced without individuals having to use more direct outlets for stress than the group's machismo would be comfortable with. This is consistent with the Freudian tenet that a well-led group can moderate the functioning of an individual's ego and super-ego, so that the group can behave more rationally.

Van Knippenberg and Ellemers (2003) provide a useful model of how group identification affects performance of tasks [Figure 10].

Figure 10: A social identity model of group performance



A Social Identity Model of Group Performance. (Van Knippenberg, 2001)

This model interprets how an individual's strong need for social identity leads to his willingness to exert effort on behalf of the group, and then to perform extremely well on its behalf.

The authors point out that there are pitfalls in becoming too deeply acculturated to the group, drawing attention to the difference between working with the group through perceived self-interest and working through a general pro-social benevolence. They fear that too great a wish for conformity within the group will stultify decision making and innovation; and that if a group becomes too highly identifying, members may make too great sacrifices of their time, health and other opportunities for its sake.

Wheelan (2005) reinforces this view. She points out the powerful effect exercised by group membership on members' actions, thoughts and feelings, and the negative outfall of defensiveness, anxiety, competitiveness and 'social loafing' that may ensue. In the wider organisational environment, the group itself can be affected in its functioning and productivity by the lack of necessary resources and support. As Wheelan says, 'Groups have less control over their environment than the members might like' (p 127). For an investigative team there are the hazards of too tight a control from the hierarchy, particularly that of the overarching police agency, and consequent lack of freedom to innovate; too great oversight of its activities from interest groups and the media; and pressure from politicians and the public for speedy solutions to individual cases.

If the investigative team is considered to be working as a community of purpose, there will be certain elements that need to be covered. The first will be the numbers required for each investigation, and whether each member is expected to slot in as required, or has some area of recognised expertise or utility. The second is whether each member has a degree of ownership of the performance of the task, or is regarded as interchangeable with others. From this devolve issues of flexibility, communication and coordination; the constraints and opportunities for the individual working in the team, and the type, amount and quality of leadership. None of these elements should impinge on the basic concept of an individual investigator at the centre of the investigative entity.

The success of the investigative team starts with the selection and training processes. In most jurisdictions where there is a designated criminal investigation branch, the investigators will have undergone a special training for the task and will enjoy a differentiation in pay and conditions. In some agencies there is direct entry to the detective service without previous experience as a general duties police member. In the United States, for example, many federal and local agencies recruit applicants who have passed law enforcement courses at colleges before applying and train them either on the job or at their associated training academies (United States Bureau of Labour, 2010). It is difficult to proclaim whether there is more cachet in having been selected from the ranks of uniformed police to undergo detective training or having had direct entry from a university, profession or other service.

After acquiring the basic knowledge, skills and attitudes that equip him to undertake the task, the new investigator will be deployed and developed, gradually acquiring working knowledge through a framework for evaluating and incorporating new experiences and information that is described by Davenport and Prusak (1998, p 5) as a 'fluid mix of framed experiences, values, conceptual information and expert insight'. Rooney and Schneider (2005, pp 25-31) underscore the powerful role played by intuition in this.

Concomitant with gaining working knowledge is learning how to work in the team. Reinharz (2005, p 432) sees the process of socialisation into a group (such as an investigative team) as a system of reciprocal impact between the parent culture and the novice, which changes both partners. Smith and Flanagan (2000) cite the responsibilities of the detective team leader in creating the climate for this.

Whatever the conditions for selection into the investigative team, any newcomer has to gain acceptance from the existing members. Some of this will come from social interaction, negotiation of formal and informal hierarchies and acculturation, but most will come from the process of task-oriented learning. Lave and Wenger (1991) predicate that this apprenticeship period should be viewed not from the cognitive and conceptual aspects within it, but from the social engagements that enable learning to take place. They dub this process of learning on the job legitimate peripheral

participation. As the learner becomes more adept, advancing from acolyte to competent practitioner to expert, the degree of peripherality diminishes.

The intensity and depth of the experiences and mentoring offered to the newcomer by existing team members influences his commitment to the group and is an important pointer to whether the group is a smoothly-running community of purpose or that more sociable (in Lave and Wenger's terms) entity, a community of practice.

Just as the individual learns to manage the knowledge required by the task, so too does the group. A community of purpose shares explicit knowledge as a matter of course. The systems for accessing this are universally known, though some investigators will be more skilled, better trained, luckier or more favoured by the gatekeepers than others. There is often no guarantee that the explicit knowledge recorded in knowledge-management systems is accurate or even sufficient for the task: investigators work around what they have, rather than what would be ideal.

Whatever the knowledge sources and management systems in an agency may be, introducing new members to them may require rituals of acceptance, include an element of acculturation, or even, since this is a transmission, dilution or alteration of power within the group, an overt demonstration of subservience to the gatekeepers.

There are more complex issues when assessing the handling of tacit knowledge held by members of the team. If there is implicit knowledge relating to the purpose of the group, such as efficient shortcuts, secret sources of information, or which ancillary staff are helpful, known only to individual members, the person joining the group is initially peripheral, perhaps in an 'apprentice' role, being informally tried and evaluated before the implicit knowledge is shared (Lave & Wenger, 1991).

The sharing of implicit knowledge or techniques by individuals is gradual and marked by testing of the knowledge seeker to establish worthiness of being entrusted with the knowledge. Otherwise, transmission of information and techniques may be based solely on a pragmatic 'need to know' on the part of the investigator having the knowledge imparted to him. Knowledge that derives from informants may be the

hardest to share, as the greater number of individuals aware of the identity of the informant increases the possibility of a leak and the danger of reprisals to the informant. In some agencies, too, the possession of exclusive information may be regarded as a key to power, if not advancement (Busch & Richards, 2004).

Once members of a community of purpose see that powerful individuals in the group are prepared to share implicit knowledge with a newcomer, there is a degree of acculturation and eventual acceptance into the group for that individual (Lave & Wenger, 1991).

Huysman (2004), however, warns that knowledge sharing cannot be forced: as a general rule, people will share knowledge only when there is a powerful reason to do so, yet for a knowledge-management system to be effective, to the electronic sharing of information held in a common repository available to all must be added material conveyed by personal and social networks. Adler and Kwon (2002) feel that the social capital created by these networks nurtures a willingness among intellectual humans to connect with others, for there are significant benefits from doing so: they cite market relations, hierarchical relations and social relations as the areas in which the most intense benefits can be derived. For an investigative team working on a case, the pooling of explicit knowledge and its dissemination among the group is crucial to a speedy resolution; the sharing of tacit knowledge is a sign of trust in the other members of the group and dedication to the group's joint success.

To the degree that explicit and tacit knowledge are shared ungrudgingly to expedite the investigative task, the investigative team can be called a community of purpose.

6.2.2 Communities of practice

When observing an investigative team engaged in decision-making in the initial investigative process, can the researcher entertain the premise that the team is not merely acting as a community of purpose, but as a community of *practice*? This term implies a much more complex involvement by its members in the group's interaction and activities than the common carrying-out of tasks that characterises a community of purpose. It implies also that the team has a focus on discourse, collegial problem-

solving, learning and innovation in an atmosphere of cooperation and trust that may not be envisaged by an investigative team working as a community of purpose. It does not, however, require that the focus of such a community of practice be on theoretical knowledge rather than on strategies for achieving practical outcomes to organisational tasks (Wenger, 1998).

In describing a typical community of practice, Wenger (1998) postulates a theory of learning that marries the concept of people as essentially social beings with a definition of knowing and meaning as active engagement with the world to find meaning in experiences within it, and so to learn. This theory makes it possible for him to isolate the elements of practice that turn individuals into a community:

- the explicit and tacit knowledge available in many forms to the group;
- semiotic and linguistic conventions;
- rules, roles and procedures for group engagement; and
- the finer nuances of communication and understanding that build a world view for members to share.

An inalienable element is not theorising, but commonsense, and reification (the process of consolidating and processing experience into definable outputs) is its tool. Thus the community of practice is marked by its cohesion, its collegiality, and its ability and willingness to learn. For Wenger, this does not imply homogeneity: he emphasises that participation in a community of practice does not mandate ‘group-think’, but permits the expression of difference, disagreement or challenges.

In cultivating a community of practice, Wenger, McDermott and Snyder (2002) recognise the utility of explicit knowledge about the task, but consider that tacit knowledge, that well of expertise that may be made available by and to its members, is a more valuable asset of the group. It is impossible to share tacit knowledge without interactive processes that bolster group communication, unity, trust and learning.

For a community of practice, the need to share knowledge easily and compatibly is an important aspect of the suitability of any knowledge-management system. In the

model of a community of practice devised by Ritzen et al (2005), attention is directed to the difference between such simple information sharing and the process of knowledge creation within the group; to the difference access to information makes to whether membership of the group is open or closed; and to the essential differences between mono-modal and multi-modal types of communication in sharing knowledge.

A further yardstick for the denomination of an investigative team as a community of practice is whether it is a learning organisation. There are nuances in this definition, since learning may be a way of dealing with information per se, or a process of change and growth in the nature of the group and its culture and tasks. Wenger (1998, p 86) opines that communities of practice are ‘shared histories of learning: remembering and forgetting, continuity and discontinuity’. He sees their consolidation as an evolutionary process, with experimentation in forms of mutual engagement leading to a fine-tuned enterprise with its own repertoire and style.

Bielaczyc and Collins (2006) particularise the process of creating such a knowledge-creating community by isolating seven characteristics:

- transforming ideas by sharing them;
- using the different backgrounds of participants to create multiple perspectives;
- experimenting and reconfiguring;
- sharing the expertise of specialists in the group;
- arguing ideas in an atmosphere of trust;
- reflecting upon, and evaluating, what is happening in the group; and
- finding solutions by synthesising ideas from every source, rather than choosing between hard-line alternatives.

This way of viewing a community of practice is amplified by Brown and Duguid (2000). In order to design ways for computer programmes to handle information they were forced to examine the ways in which humans negotiate behaviour, and found aspects of negotiation that were not readily transferable to the computer world. A human faced with a technical problem will try to share ideas and talk out the

problem with others, experiment and improvise, and a community of practice provides an ideal environment for this collaboration, narration and improvisation. In a successful community of practice the barriers of rank, location and the wider organisational culture may be successfully blurred, negotiated or abandoned to allow input from anyone in the group into possible solutions for problems encountered. Thus the way a group solves problems – the involvement of any or all members, the amount of cooperation and communication among them, the way ideas are entertained, the suppression of hierarchical roles – may be a clear indication of its right to be called a community of practice.

The situated learning resulting from this style of problem solving, and the influence of participating in a community of practice, are considered by Barton and Tusting (2005) to be the fundamental process of learning. To them, the major virtue of this type of learning, by problem solving within a knowledgeable, congenial group, is that it mirrors real life and is seen to apply in any region or culture. This resonates with Wenger's (1998, p 149) concept of identity as negotiated experience, community membership, a learning trajectory, a nexus of membership, and the further element of the relationship (and perhaps reconciliation) between the local and the global that enables the illimitable broadening of experience.

Barton and Tusting (2005) suggest that it is the dynamics of the community of practice, rather than the task, which present a better framework for describing it. For members to work collegially in a supportive, learning and innovative environment, attention must be paid to semiotics, to group idiom, to literacy, discourse and power relationships. For an investigative team, all these aspects have to be negotiated, with rites of apprenticeship, acculturation and acceptance into the group.

A further issue is how an individual member of an investigative team or a community of practice handles a disagreement with the group's opinions or practices. Hirschman (1970) considers there are two options: *exit* and *voice* – to leave the group, or to speak out in an attempt to change the group's opinions. For a member of an investigative team working as a community of purpose the opportunities for eventual exit from an uncomfortable situation or posting are usually relatively easily accomplished without much need for explanation or face-saving.

However, in a community of practice, with its selective entry, initiation rituals and encouragement of sharing, one might expect a deeper emotional commitment to the group and consequently a more painful loyalty and reluctance to exit. A community of practice, therefore, might further be delineated by how conflict is handled, and what the consequences are for dissent.

There are further considerations for how a community of practice might be developed. Ritzen et al (2005) look for the following qualities:

- the degree of formality of the group; on whose needs its orientation is focused;
- the factors that impel it;
- how the focus changes over process;
- the amount of information sharing and knowledge creation;
- whether membership is open or closed; and
- issues of duration, size and modes of communication.

They add a further dimension which is of interest in analysing investigative teams and their use of knowledge management systems: whether a community of practice is 'tool-driven', that is, the suggestion that interaction can be strongly driven by the nature of the tools being used. Presumably, an official information system that supplies intuitive tools for practitioners to use at their discretion is thought to differ from one that asks for more specific or limited data to be manipulated and shared mechanically.

Andriessen, Huis in't Veld and Soekijad (2004) see a community of practice through a lens of purpose, formalisation, size, boundaries, virtuality (and the sharing of knowledge) to clarify three functions: the production of results; the development of group vitality in terms of trust, cohesiveness and motivation; and member support.

The concept of a police investigative team as a community of practice has not yet been rigorously explored. In speaking of the Dutch police experience with communities of practice, which appear to have developed not spontaneously, nor by evolution, but by direction from the Police Knowledge and Education Centre, de

Laat and Broer (2004, p 67) refer to the resultant hybrid network being 'a relevant player in managing knowledge by critically questioning, innovating and assimilating corporate knowledge in a fast-changing working context.' They point out that police officers typically have a well-developed solidarity with each other, and that this can be harnessed to validate and standardise knowledge. The Dutch authorities have created an intranet with three elements: a Police Knowledge Net, a Police Discussion Net, and an E-campus for police education. While the sharing and discussion of new knowledge is an essential element of a community of practice, it may well be that this pragmatic Dutch example does not fulfil the more metaphysical expectations of such a community.

In a supporting study of the exchange of knowledge on drugs issues through networks and discussion (2006), de Laat uses concepts from Wenger and Lave to identify the features of voluntary engagement, existence of the network through time, and realisation of a shared practice to denote the members of the team a community of practice. It is hoped that the sharing of information and development of a habit of discourse will eventually produce ways of testing and developing new applications for the police knowledge-management system.

This example marks a genuine attempt to transmute a working team, used to performing well-understood tasks under pressure, into a community of practice, by providing communication facilities. The aim was the better processing and disseminating of explicit information and the enhancement of skills, in which the project succeeded.

However, the depth and efficacy of a community of practice, as opposed to a community of purpose such as an investigative team, is marked by the degree to which implicit knowledge is shared (the learning process for both individuals and the group), whether the sharing is perceived by the initiate as part of inclusiveness within the group or as a directive for his actions within the team, what use the initiate makes of the knowledge, whether he attributes it to its source in future or blazons it as his own. On these points the Dutch study seems to be inconclusive.

6.3 The essential differences between the two communities

The essential differences between the two investigative communities (of purpose and of practice) may well lie in the way unknown knowledge is tackled.

This is especially true about the trust with which unknown knowledge is discussed: whether speculations and intuitions can be brought freely to the group; whether they are taken seriously during discussions; whether the lucubrations of the group determine whether or to what degree this unknown knowledge can be accepted as implicit or explicit knowledge (i.e. whether there will be group entertainment and verification of hunches).

The very nature of the ‘knowledge’ handled by a police investigative team creates both opportunities and difficulties. Perhaps no other agency has to deal with so much questionable information – the deliberate lies, evasions, partial truths, diversions and allegations that litter the path of an investigation and have to be assigned their true place (Binder & Bergman, 1984). There is also the presumption in many jurisdictions that a subject is innocent until proved guilty, and a host of human rights and legal procedures that must be taken into account. Within an investigative team there is enormous individual expertise and experience in verifying such material; ideally there would be willing sharing of techniques for reducing doubt about the quality and reliability of material input into, or retrieved from, a knowledge-management system.

In essence, a community of purpose focuses on a task; it wants a speedy resolution of any anomalies or deficiencies in knowledge, and it uses standard procedures to process the unknown. A community of practice encourages unfettered speculation about the unknown, confidently expecting that because of their combined efforts and professional skills, time spent on ‘musement’ (Peirce’s term for free pondering on an abductive topic) will not slow the successful progress of a task, but lead to new understandings and more enlightened decision making. The outcome may be learning or innovation; it may be productive of new rules and new procedures for the investigative task itself. As Peirce says, ‘Neither deduction or induction can ever add the smallest item to the data of perception and mere precepts do not constitute any

knowledge applicable to any practical or theoretical use. All that makes knowledge applicable comes to us via abduction' (Peirce, 1960, Ms 692). Therefore the way the team handles abductive ideas is crucial to the development of new theories, new rules and procedures, and marks it as a true community of practice.

6.4 Elements of investigative teamwork

To judge whether an investigative team is effectively a community of *purpose* could almost be ascertained solely from standard police measures of outputs and ministerial satisfaction with outcomes, coupled with some testing of levels of public satisfaction with the service it provides.

However, to judge whether an investigative team is a community of *practice*, specific criteria, derived from the literature of communities of practice, might also be employed. There should be sufficient of these criteria to enable an overall picture of the group as a working community to be obtained, while distinguishing those elements that would delineate it as a community of practice.

6.4.1 A professional approach

The first criterion should reflect the way the investigator and the investigative team approach their task. In police policy-maker terms, an investigator's professional approach is based on having followed a systematic training programme and achieved competence through early monitored practice and later satisfactory performance of duties within firm procedural and ethical guidelines (personal communication in 2008 from a Headquarters policy maker), but any discussion of the approach should also include the following factors that impinge on the investigator's role:

- within an organisation that already selects its practitioners based on ethics and fitness to serve, to be an investigator entails further selectivity of entry, specialist training and monitored practice; while all police are investigators, there is an element of exclusivity in the detective role;
- there is an expectation of a deeper understanding, perhaps a philosophy, of investigation;
- the power of discretionary decision making (Kay, 1996) may need to be exercised in more critical situations;

- the collegiality (Cheetham & Chivers, 2005) of an investigative police community of practice has already been instilled in the members by the tight-knit nature of the police environment in which they served before they were selected;
- having shared goals (Cummings & Ancona, 2005) is important to the group, as is the altruistic, client-focused nature of the service they provide (Cheetham & Chivers, 2005);
- the ethics of the group may be more particularised, extensive or complex to cover both the work situations tackled and group dynamics variables (Hurley, 2004);
- because the investigative team has traditionally had a service orientation, this must be professionalised by attention to qualifications, standards and research (Smith & Lanyon, 2008); and
- to obtain recognition of the status of the group and its individual practitioners, its competence must be promulgated (Cummings & Ancona, 2005); in Schon's terms (1995), it may be the group's tacit knowledge and power of interpretation in individual cases that can secure its status.

The first criterion, therefore, could be framed as:

1. *There is a professional approach, based on ethics, marked by competence, and recognised by others*

6.4.2 Concern for performance

The second criterion should reflect how the group moulds new members and regulates the behaviour of both itself and individuals in the group. One would expect some induction rituals and an apprenticeship period (Lave & Wenger, 1991): a process of socialisation that changes both the novice and the parent culture (Reinharz, 2005). To achieve this might require the appointment of mentors (or voluntary or ad hoc mentoring if that is the true spirit of a community of practice), based on set routines and some norms for behaviour (Cummings & Ancona, 2005). Overall, this focus on meeting group standards of performance and on transactive behaviour may be couched as:

- 2 *There is a concern for the performance of others in the group: induction rituals, coaching, mentoring and monitoring are axiomatic*

6.4.3 An atmosphere of trust

The concern for the job performance of new and existing members should result in concern for their welfare also, and the offering of support where needed. The Van Knippenberg & Ellemers model (p 28) shows graphically how identification of members with the group enhances motivation to help others. To sustain a supportive atmosphere, there needs to be development in the group of patterns of approach and engagement, group language, common styles, routines and metaphors (Barton & Tusting, 2005; Postmes, 2003).

The positive aspects of group membership are stressed by Wheelan (2005), who appreciates the beneficial effects on the group of members who enjoy interacting and communicating, respect and trust others, and encourage every member to participate.

Cummings and Ancona (2005) emphasise the need for the group to offer psychological safety, too – members may take risks, mistakes are acknowledged, support is given, and members feel they can trust each other.

Shelton (2005) feels that when a high level of mutual trust is established in a group, the result is a shared identity that leads not just to access to group information and widespread involvement in the decision making process, but to actual empowerment.

There are other elements to be subsumed in an atmosphere of trust. There may be gender issues to be resolved, since investigation was historically a male-oriented culture; acceptance of minorities; negotiation of attitudes towards the use of alcohol and recreational drugs; indeed, even how members are to resolve the tensions between their investigative and private lives (Butterworth, 2005; Bazley, 2007).

To the necessary elements of support and trust should be added respect for each other's competence and acceptance of differences of personality, background and culture. This could be embodied in the criterion:

- 3 *There is an atmosphere of trust, support and respect for colleagues within the group*

6.4.4 Interaction and communication

Any investigative group, whether a community of purpose or a community of practice, is engaged on a task that requires constant interaction and communication among members. Dance's list of the conceptual concepts in communication within groups (Dance, 1977), provides useful coverage of the process, the reduction of uncertainty, its behaviour-modifying effect and the power implications therein.

Brown and Duguid (2000) observe that in group interactions, behaviour is usually negotiated until a compromise is reached that enables the group to function. They see the process as reflecting both tacit codes of conduct and known rules. This group negotiation also applies when problem-solving: Brown and Duguid suggest that solutions are often reached by collaborative sharing of ideas and trying out solutions; by narration of similar experiences in the past; and by improvising procedures to get round practical difficulties. The benefit for Hurley (2004) of this kind of collaborative and negotiative relationship at work is that it is easier for tacit knowledge to be elicited, and made explicit.

Armeliu and Armeliu (2000) stress the importance of the group's developing supportive or defensive strategies to manage the stresses of the task it undertakes.

The double significance of the need for intensive interaction and communication on task, and the need for it to be accomplished without internal stress on group relations, could be encompassed in the criterion:

- 4 *There is a high level of interaction and communication; resolution of conflict is done through discourse and compromise*

6.4.5 Sharing knowledge

A police investigative team needs access to explicit knowledge by means that are available to every member when required. Some will be situational knowledge relevant to specific crimes, such as details of offenders, evidence, court documents; some will relate to procedures; some will be general forensic, administrative or training-related information: according to Wenger, McDermott and Snyder (2002), establishing and standardising baseline material such as this frees creative energies for more advanced issues. Ritzen et al (2005) reflect on the difference access to information makes to whether membership of the group is open or closed; and to the essential differences between mono-modal and multi-modal types of communication in sharing knowledge.

Cummings and Ancona (2005) refer to this common awareness of explicit knowledge as ‘transactive memory’. The sharing of this type of information should generate few fears in practitioners working as a community of practice, though Huysman (2004) warns that knowledge sharing cannot be forced.

Wenger, McDermott and Snyder (2002) claim, however, that tacit knowledge is a more valuable asset for a service group, and that if this is shared there will be practical and social benefit to both group dynamics and to individual members. Andriessen, Huis in’t Veld and Soekijad (2004) stress that this expertise is the result of practical experiences occurring over time, and sharing the repertoire of responses to situations serves as a foundation for future learning.

The key concept is the sharing. It is not envisaged that this is easy – there are long police traditions of reticence, and the human tendency to equate individual expertise with the potential for power, to be overcome (Luen & Al-Hawamdeh, 2001). The need for members of an investigative team to have access to each other’s expertise and information could be encapsulated in the criterion:

5 *There is an emphasis on sharing explicit and tacit knowledge*

6.4.6 Intuition

This emphasis given by a community of practice to the sharing of all types of knowledge must be extended in a police investigative team to ideas that illumine the decision making process but cannot be absolutely defined and explicated.

Among police members there is a widespread belief in intuition, though many ways of defining it and accounting for its manifestations. The simplest way of dealing with these discrepancies is to give the quality the non-specific name 'flair', which could include skill and speed with routine procedures, superior cognition, ease in building rapport and sophisticated communication skills, as well as abductive insight or possibly extra-sensory perception.

The encouragement of this intuition, and acceptance of experimentation, is another matter. The speed of abductive insight and its efficacy in decision making about a case must be balanced by the team against the need to follow departmental directives, manuals of best practice, and legal, social and cultural requirements. The issues of psychological safety for the intuitive individual within the group and the group's need to satisfy the hierarchy of its orthodoxy and obedience, present a challenge that could be expressed as:

6 *There is active encouragement of intuition and experimentation*

6.4.7 Fluidity of relationships

Another vital concern is how that essential component, fluidity of relationships, can manifest itself in a service marked by a rigid hierarchy, uniforms and insignia, and habits of obedience to superiors.

The first consideration is the division of tasks within the group and whether the allocation is based on rank, or on competence, or on sheer availability to perform. The second aspect is the degree of autonomy accorded to individual members; linked to this is how frequent and mandatory are the demands from nominated supervisors for reporting of the individual's activities on task.

The organisational structure under which normal communities of practice exist is not an unimportant element in their performance, and no omission or emendation should be made to the criterion when evaluating an investigative team as a possible community of practice. The criterion therefore stands as:

7 Relationships are fluid, with little regard for hierarchical status when on task

6.4.8 Openness

The investigative group has an organisational context that may affect their functioning as a community of practice (Wheelan, 2005), but of more influence in terms of the Investigative Entity model may be the wider community within which their task is conducted. Cummings and Ancona (2005) emphasise the need for response to the demands of the external environment, and pragmatically advise the group to understand the sources, funding and limitations of its resources; Barton and Tusting (2005) remind of the need to incorporate the broader social context when researching communities of practice.

While some police agencies throughout the world may be vulnerable to pressure from government or private interests, an investigative community of practice in a democracy should need no restrictions both on what information and opinions it seeks (or is presented with) from outside the agency, nor what use it makes of them.

The eighth criterion could therefore be couched as:

8 There is openness to the opinions of people outside the group and no limitations on where information may be sought

6.4.9 Group learning

Wheelan (2005) postulates that over time groups become more complex, more diversified and more independent. The investigative team is not static – changes in personnel, structure, tasks, systems, policy, group culture and even philosophy may have to be accommodated, and this within a police service itself subject to change at

the will of the government. When changes take place, how well does the investigative group cope?

A community of practice *learns*. There is constant change to the information which is the lifeblood of the investigative group and as Ritzen et al (2005) point out, there is a difference between simple information sharing and the process of knowledge creation within the group. An ability to transcend the obvious task and design new approaches and new levels of group interaction marks a group that learns.

Barton and Tusting (2005) suggest the climate for group learning can be created by the group's development of language, literacy and discourse. Hurley (2004) notes that for a group to learn there needs to be a learning culture, based on knowledge-sharing, active generation of ideas and avoidance of groupthink; this culture must be supported by requisite knowledge, requisite technical systems and an equitable reward system.

However evaluated, there must be outcomes that prove the group has learned. The ninth criterion therefore stands as:

9 There is evidence that the group learns

6.4.10 Innovation

It would be possible for a group to learn, but only to create or develop knowledge or skills at a level that groups have already attained elsewhere; the group learning could be focused on group self-maintenance or aggrandisement. The crucial element in the group learning of a community of practice is that it is innovative in a very wide sense. For an investigative community of practice the innovation might relate to its interrogative interface with the architecture of knowledge, and particularly to the creation of new ways to deal with the uncertainty of the information that investigators receive; it might equally apply to imaginative ways of handling evidence or the development of artificial intelligence systems to enhance the handling of massive amounts of material. Any criterion should not limit the arena for innovation, and might be expressed thus:

10 There is evidence of innovation – creation of knowledge, new relationships, new procedures, new systems.

6.5 Summary

Investigative teamwork impacts the Investigative Entity model at every level: in the way individual investigators share the task with each other, in the way the group copes with constraints and opportunities; in the way the organisation aligns itself within the prevailing culture, and especially in the sharing of factual information gained by each investigator at the interface of the architecture of knowledge, the passing on of the tacit knowledge and personal understandings about cases each brings to the group, and the willingness to share intuitions.

Criteria for examining the nature of investigative teamwork emphasise professionalism; an atmosphere of trust, support and respect; interaction and communication; sharing of knowledge; intuition; fluidity of relationships, openness; learning and innovation.

Armed with this list of criteria, it is possible to make an empirical study of an investigative team embedded in a police department to establish its structure, culture, usual ways of working and use of knowledge-management systems; from the interviews and observations entailed it may also be possible to make a designation of it as a profession, a community of purpose, a community of practice or, perhaps, something quite different.

Prior to moving to the empirical study, the following chapter reviews a third body of literature that elaborates the Investigative Entity, namely the need for knowledge.

Chapter Seven

The need for knowledge in investigative decision making: a literature review

“It is not so impossible, however, that a man should possess all knowledge which is likely to be useful to him in his work.”

A. Conan Doyle, *The Five Orange Pips*⁴

Overview

Since the parameters of the investigative entity have now been delimited, the processes which proceed from it have been outlined and the nature of investigative teamwork within the entity explored, the focus of the research turns to the fuel upon which they run, knowledge itself. Four major areas are identified, amplified by consideration of the qualities needed for a police knowledge-management system.

7.1 The need for knowledge in investigative work

The requirements for investigative knowledge outlined in a thousand detective stories and the needs of the investigator in the real world make an interesting comparison. For Doyle, the creator of Sherlock Holmes, the two prime requisites for his hero are wide-ranging and abstruse scientific knowledge, coupled with understanding of human and animal nature, based on keen observation, reading and communication skills. The detective uses informants and watchers; he knows how to find and consult experts; he can communicate swiftly by an efficient telegraph system; he often needs to travel to see for himself what has been overlooked by others...above all, he does not have the legal constraints placed upon professional police and can use his expertise in fisticuffs, swordplay, firearms and psychological blackmail with little in the way of restriction. The sources of his income and expenditure are not subject to official enquiry; the tools, systems, transport and ancillary staff he uses are of his own choosing and apparently available at will. He is not required to produce a watertight case for court: instead, his task is to consider the evidence, shape a believable narrative of what must have taken place and identify the malefactor.

By comparison his fictional professional counterpart, Inspector Lestrade, needs concrete evidence, knowledge of human behaviour, and understanding of law and official procedure. He can pay informants, use transport, tools and systems and

deploy staff, but within strict budgetary limits and departmental guidelines. His task is to produce unimpeachable evidence and a coherent case to present in court. Many times the stolidity and lack of creative vision of the police detective depicted by Doyle hints at a lack of freedom to move and explains the otherwise inexplicable willingness of Scotland Yard to cooperate with a maverick private individual. However, in terms of the Investigative Entity model, the fictional world of Lestrade more closely represents the real world within which the investigator works.

In essence, this early fictional depiction of criminal investigations shows two ways of treating the same collection of facts: one, where the professional investigator is shackled by procedural conventions and lack of resources, the other, where the mind is freed of normal restrictions and can operate in its most congenial way. In the Sherlock Holmes stories and their multitudinous successors perhaps the most pervasive moral message is the need to allow the mind no limitations in its search for solutions.

In practical terms, for Luen and Al-Hawamdeh (2001, ps 311-5) the crux of the issue is how to surface and use the vast amount of knowledge captured within police organisations. They suggest that a generic framework for managing a police agency's knowledge should incorporate the identification, analysis and selection of the appropriate knowledge that needs to be managed; the process of capturing and documenting the identified knowledge; the organisation of the captured knowledge in a manner that is systematic, structured and facilitates retrieval; the storage of the documented information in a form that is secure, yet readily accessible; the process of retrieving the knowledge in a timely, intuitive and relevant manner; the process of reviewing the knowledge to keep it relevant and up-to-date. Within such a framework there is a need to identify that 'appropriate knowledge'.

7.2 The types of knowledge needed

The basic investigative techniques available for use in most jurisdictions for the resolution of criminal cases are listed by Nossen (1975) as:

- surveillance;
- acquisition and analysis of physical evidence;

- interviewing and interrogation;
- wiretapping and electronic surveillance;
- undercover operations;
- informants; and
- financial investigations.

However, the knowledge needed by the investigator will generally derive from information falling into four categories: not only information about physical objects and scenes; information about people; information about systems, processes, connections, communication and records, as defined by Nossen, but also information about and from himself. The term ‘investigative knowledge-management system’ therefore has two main components: the management of knowledge by the individual investigator using his own selection of sources, personal experiences and cognitive skills; and the systems whereby knowledge in an investigative agency can be structured and shared, such as work practices, organisational teams and computer applications.

Not all information gathered will be in instantly recognisable form, but primarily it must be ‘real’, it must be credible and it must be communicable if it is to fulfil its purpose.

By ‘real’ is meant more than that the piece of data exists in physical form as an object or a recorded statement or is a recognisable quality entrenched in the investigator’s skills and value system; whatever its source, it must be relevant to his task and it must stand as an independent element waiting to be woven into the investigator’s tapestry of knowledge about the case. Davenport and Prusak (1998) consider that there are ways of transforming this basic data into working knowledge: by seeing it in terms of its purpose; by recognising and categorising it; by submitting it to mathematical and statistical analysis; by rigorously checking for error; and, if appropriate, by summarising it. These processes offer the data credibility as potential building material, but do not ensure that it will be used correctly or efficiently.

The communicability of information will determine its usefulness to an investigative team and to the prosecutor in preparing his case. For knowledge to be shared it must

be couched in a form that is comprehensible, whether this is iconic, linguistic or demonstrative. If the medium of language is used for communicating data, the most precise (albeit familiar) terms must be used in the definition.

For all comprehension and manipulation of information within the investigative entity, whether to establish a narrative of the crime, detect deceit or control his assistants, the investigator needs first to understand himself.

7.2.1 Self-knowledge

Know thyself... (inscribed in the temple at Delphi).

The cryptic utterance of the Delphic oracle points to the initial requirement for the investigator – a capacity for self-knowledge and its symbiotic partner, self-awareness.

Any theory of self must examine the ability of the human to consider his own nature, to ponder on, and evaluate, his own actions, and to analyse his own motives. Once this would have involved his relationship to God, and his attempts to measure up to the precepts of his faith; increasingly, perhaps, the focus is on his attempts to measure up to the standards set for him by others and his strategies for resolution when there is dissonance.

The early psychologists and social scientists of the modern era focused on how a sense of self is learnt, rather than examining whether it is embedded in genetic inheritance. Carver and Scheier (2003) make the differentiation that for William James, the key factor was the development of self-esteem through success in achieving aspirations; for H.T. Mead, interaction with others taught the individual how to evaluate himself against a set of standards learnt from them.

By 1972 Duvall and Wicklund, building on this process of self-measurement, were able to add to their theory of self-awareness the concept of motivation; they coined the phrase ‘an aversive drive state’ to reflect the self’s way of dealing with discrepancies between the individual’s behaviour and his standards; they isolated two effective strategies – avoiding self-examination, or striving to reduce the

discrepancy (1972). The very act of choosing which strategy would cause the least psychic pain would require intense self-focus and self-knowledge; if the path chosen became a regular response, there would be a profound impact on an individual's personality.

Self-awareness is of a slightly different quality from self-knowledge. Self-knowledge is the product of processing information gathered by the self about itself. Self-awareness is more active, a conscious surveillance by the individual of his thoughts and feelings about what is happening to him and how he is responding to them. Our pious ancestors might have likened it to the voice of conscience.

As a corollary to this, Hull and Levy (1979) suggest that the practice of self-focus leads to a certain selectivity in one's attention to the environment, a positive seeking after information that is relevant to oneself. In an investigator this could lead presumably to both good and bad outcomes. Probably more admonitory for him is the effect on self-esteem of possibly bad outcomes: the sensitivity to public judgement and the need for private protection of one's self-esteem. Since most investigative work takes place under the gaze of many interested parties, the ability to rise above public judgement by confidence in the adequacy of one's skills and the correctness of one's adherence to written and unwritten rules, and the power to repair one's self-esteem, are a necessary part of performance as an investigator.

Carver and Scheier (2003) explore this dichotomy of public and private aspects of the self, opining that while private self-consciousness is rumination about personal aspects of the self that are not shared with others, public self-consciousness is not revelation about the self as presented to the public, but rather a cognisance that one is an object set in a social milieu, interacting with others. Thus it is a locatory consciousness of being, rather than one based on self-analysis.

Zohar (1990) offers a comparison between the theories of quantum physics that examine the role of particles and waves in the universe of matter, and theories of self that explore the individuality of the person in terms of elementary particles, brain cells and the activities of neural networks. For Zohar, the self is 'the highest unity of many subunities', allowing for the shifting of boundaries so that at times there may

be better or worse integration. Seen in this light, there are possibilities for the investigator of temporarily divesting himself of aspects of self that impair his ability to perform his task, or of marshalling the wave to produce a flow of intuitive thought conducive to success and serenity.

To some extent the quantum theory of self in terms of particle and wave reflects the idea, expressed in many spiritual practices throughout the oriental world, that through meditation the body can be experienced as patterns of energy and space and the mind opened to broader understanding (Rosch, 1997). All these theories have as a common thread the desire of the self for consistency in its elements, for being able to align behaviour to goals with the expectation of success. The existence of some kind of physiological feedback loop, as in the rest of the body's functioning, presumably mediates the self's perceptions of how it is performing against its selected criteria. There are elements, too, of attribution, where the self can be a causal agent in events in which it is involved, rather than merely playing a passive role.

Nor is the development of self a late stage in an individual's maturation (Smith, 1982; Harter, 2003). Even an infant has a primal awareness of what relates to itself, and is therefore of interest, and what does not. The ensuing development of self-awareness throughout infancy and childhood focuses on four elements: the need to appreciate one's own characteristics, leading to a healthy self-esteem; the need to steer away from painful experiences and toward pleasurable ones; the need to make sense of one's world; the need to relate to others (Harter, 2003, p 611). In the fortunate individual, developing these elements of self takes place naturally, along with the parallel development of the body and public persona.

The plethora and complexity of elements in the structure of the self may never be wholly integrated into that 'unconquerable soul' lauded by the poet W.E. Henley, but there are distinguishable core traits that lend integrity to it. These are designated by Jopling (1997, p 261) as the beliefs most central and stabilised in a person, such as ideals and moral sentiments, identifications and commitments, linked to his powers of narrative understanding and accustomed patterns of embodiment. In the mature personality, these beliefs will be constantly reflected upon and reassessed; there does

not appear to be a moment when the self has reached its developmental limits and is implacably delineated for the rest of its existence.

Some facets of the self are of dynamic importance in the investigative entity. One important factor in the investigator's approach to his task is the level and intensity of his expectation of success, an expectancy established by much research to be a powerful determinant of behaviour (Carver & Scheier, 2003). The quality of hopefulness is nurtured in the individual from an early age, particularly if his basic needs for food, warmth, security and comfort are invariably met. Once instilled in his infancy and developed in his adulthood, expectancy of a successful outcome will spur an investigator to persist through months of dogged and often unrewarding effort. For some, the intensity of their need for private self-esteem and public justification means an unsolved investigation can never be finally closed, even though every avenue has been explored and found to be a dead-end.

There are other factors from the investigator's background that have influenced his self-confidence, motivation and persistence. In his infancy, his needs for love, attachment and stimulation must have been adequately met by his caregivers (Smith, 1982). Later has come socialisation into his family and into the community around him, with the learning and practising of acceptable behaviours and a growing understanding of the values, laws and mores of his culture. This will have been easier if the developing child enjoyed an environment rich in language and experiences.

After adolescence an individual has arrived at the stage where he can think in abstract terms, create and test hypotheses, read subtle signs, establish his views on life and question those of others, and plan for the future (Smith, 1982, p 22). Here may lie the seeds of motivation to move into the world and be a full participant in civic duties and work obligations; to find personal interests and hobbies and outlets for his ambition.

For this, he needs acceptance by his peers and support from his family. If the investigator has been lucky, these allies and his teachers will have helped him to negotiate the school system with a measure of success in both the social and learning

atmospheres. An early study of New Zealand Police recruits (Gordon, 1980) suggested that many had been successful in the first three years of secondary school, when the curriculum was more structured and general, and less successful a year later, when more abstract and independent learning was encouraged. It could be possible that some students with more need for action and physical stimulation than that provided by an academic classroom were disadvantaged by the examination system that prevailed at the time. However, this very urge to be up and doing, to interact with others and be of use in the community, was a powerful motivator to enter the police service for many of the recruits.

Finally, and perhaps most difficult because of the deep influence of the values of his family and peers, his culture and his religion, the investigator must come to terms with gender issues: being at ease with himself, his sexual preferences and those of others, and his techniques for interacting with others in the mating dance.

Knowing who he is and where he stands, and developing a healthy self-esteem to deal with any dissonance, will build the investigator's confidence, but he needs to be aware of the deep influence on his decision making of the acculturation process by which he was accepted and confirmed into the ranks of the investigative branch.

Those who selected him had a mental picture of the 'face that fits'; the interviewing, the review of his previous career within (and perhaps without) the ranks of uniformed police, and the psychological testing, were all geared to the discovery of commonality of skills, values and personality traits with those already perceived as successful, both at the job and in working with others. Once appointed, he would often be expected to work as part of an investigative team, perhaps even one that is indeed a 'community of practice' (as outlined in Chapter Six) rather than a functional 'community of purpose'.

Once selected and trained for the task, the new investigator faces the difference between his perceptions of the investigative task and his dreams of fulfilment therein, and the reality of practice. The job may be inherently satisfying, but there are difficult and distasteful aspects to it and the emotional strain may be more wearing than the trainee anticipated. Reinharz (2005) sees the resolution of problems in the early stages of a career as the main process by which skills, values and

attitudes are transformed and internalised (Lundberg & Young, 2005, p 430). It is a reciprocal process, with the new investigator's growing confidence in expressing his ideas possibly shaping and refining the organisation's views, a mutual socialisation that enables both parties to grow.

Hammond, Keeney and Raiffa (1999) also emphasise the way in which making decisions in complex situations can lead to the development of unconscious routines. Their concern is not with the usefulness of these heuristics, but the possibility for error and for the stifling of creativity in postulating solutions.

They cite sensory misperceptions as a prime cause of misapprehensions, such as too much weight being given to an object or event that was imperfectly seen, wrongly identified and stored in memory. Words, too, can be misheard or misinterpreted. The impressive list compiled by Hammond, Keeney and Raiffa encompasses bias; irrational anomalies in the way of thinking, such as an undue emphasis on the primacy or recency of information received; the desire to keep the comfortable status quo or to defend the assumptions and choices that have previously been made; dwelling on dramatic details at the expense of the whole picture; and a raft of other faults in weighing, sieving and using information (pp 189-216). Particularly relevant to the investigator are their warnings about the human desire to see patterns, even where none may exist, and about the essential randomness of data.

Keeney himself, in his writing on value-focused thinking and cognitive bias (Keeney, 1992), sees the danger of 'anchoring', a practice where a first assumption or estimate becomes the benchmark for later estimates, thus narrowing the spread of alternatives and crippling further creativity.

Tversky and Kahnemann emphasise the importance of the personal characteristics of the decision-maker to the way in which he conceives a frame for the acts, outcomes and contingencies of the choices he must make, and to his subsequent evaluation of the situation (1981, p 453). Their research focuses on his relative willingness to take risks, which seems to be based on his values, his habits, his confidence and his previous experiences.

Once an investigator has taken judicious account of his own strengths and weaknesses and identified tendencies that may militate against his obtaining a full and unbiased grasp of the task, he is free to exercise his cognitive skills and let his imagination range over the information he has to sift from objects, people and systems.

7.2.2 Objects and scenes - identification, assessment and preservation of exhibits

A major focus of the first stages of any investigation is the search for physical evidence. The processes for doing this are widely understood and constantly refined; there is usually a team of specially trained scene-of-crime technicians to carry out the work (Diaz, 2006). Punctilious identifying of objects of interest, recording their location, cataloguing and preserving them as part of a chain of evidence is crucial to success with a prosecution in a court of law (Swanson, Chamelin & Territo, 2000; Weston & Wells, 1990).

The first skill is to recognize material clues for what they are. This is a process of identification, analysis and comparison with similar items known to the investigator. His techniques will be based on careful measurements, assessments (often subjective) of size, shape, condition and purpose, and positioning relative to the scene (Tuthill, 1987; Huber, 1959; Lee, 2005). For many objects there will be issues of source and ownership, and whether they are integral to the environment or recently deposited there.

Once he has established that the item is of interest to him in building a case, the evidence gathered must be carefully isolated, preserved and secured; then it can be submitted to a plethora of forensic scientists for identification and analysis, so that its authenticity can be averred. Among the specialists first called will be the police department's own forensic chemists, fingerprint experts, photographic analysts, document examiners and pathologists, but an ingenious investigator will have knowledge of specialist sources in the research and commercial fields that may be tapped.

The purpose of much of this analysis is to prove the singularity of the item – its difference from other material of the same appearance or nature – so that it can be

established that only this person could possess the DNA, blood or fingerprint found, only this scene could have yielded the pollen, soil or leaf detritus so carefully identified and preserved.

Even the relatively straightforward process of scene preservation requires decisions from the investigator. The weather may be highly influential, or the possibility of spoilage, or the evaporation of olfactory evidence, forcing perhaps unwanted choices in the sequence in which he performs the routines.

Lee suggests that after the identification of evidence, the investigator should use a 'logic tree' (Figure 9, p 122) to establish whether there is a crime to be solved, and if so, of what nature (Lee, 2005).

In Figure 9, a logic tree for examining a death scene, it can be seen that the vertical column containing the scene profile very much resembles the type of questioning and allocations of categories required by a Porphyry tree (p 103). Each designation in the column means making comparisons with earlier scenes and ritual procedures in the investigator's experience, a process which draws on many cognitive skills. The second element, the scene examination, means decisions on the nature of any evidence yielded by the scene: though not perhaps as abstruse as the musement about decisions in the scene profiling, this categorisation is infinitely more challenging than the establishment of the identification of the body. Thus Lee's tree fosters the use of logic rather than merely providing procedures to be followed.

Smith and Flanagan (2000), researching the British investigative environment, designated key skills in assessing and handling an initial crime scene so that objects of interest could be identified and evidence could be preserved. While acknowledging the underpinning knowledge of procedure, participant roles, legal requirements, ethical issues and specific details of types of crime, they gave primacy to management skills – people management, planning, delegation of tasks, organisation, communication and leadership – and appraisal of information. Particular skill was needed to create 'slow time' for decision making during the swift onrush of activity at the outset of an enquiry, referred to by Innes as the 'information burst' (2003).

Whatever their source, and however long it takes before the nuggets of information about objects are mined, the investigator's role lies in surveying the verified information, weighing its value, making a judicious selection of sufficient material to prove his case, and ensuring the preservation of the evidence. From this process, by abductive thought, there may also be an awareness of evidence that should be there, but appears to be missing. In some cases, this absence can lead to parallel lines of reasoning and more intriguing hypotheses.

In practical terms, information from objects can be summarised as knowing what to look for, recognising it if it is found (and recognising its absence if it is not found), knowing what to do with it then, and understanding its value in helping build the case for court.

7.2.3 Information from people

In most instances the quantity and quality of information from and about people underpins the speed and success of the investigation (Ord, Shaw & Green, 2004). In particular, eyewitness testimony and confessions are considered the most persuasive forms of evidence (Schollum, 2005).

For an investigator's purposes the most useful human sources of information, other than his own tacit and explicit knowledge, are victims, eyewitnesses, other people with relevant knowledge of elements of the incident, forensic experts, police informants and suspects. It is his task to obtain from them the specific details he needs to establish his case. His framework for eliciting the information he needs from people is primarily the interview.

Traditionally the process of interviewing was thought of as an interrogation, a practice where judicious use of atmosphere, powerful vocal nuances and insistent, repetitive questioning would elicit a confession from a suspect or produce full and clear information from a witness. In many ways this was fruitful: for example, most suspects who confess do so early in the process (Schollum, 2005) and a forceful interrogation could facilitate this. On the other hand, evidence produced in court

could be tainted by the suggestion it had been obtained using intimidatory techniques. Eventually it was accepted that to aid recall and to avoid accusations of undue pressure it was helpful to make the interviewee comfortable, at least at the beginning of the interview, and make a conscious effort to build rapport.

The knowledge and skills a police interviewer needs are formidable.

In the first place, he must understand people in general, rather than focus on just victims, witnesses and suspects, so that his specific knowledge and experience of people in the police system can be measured against a yardstick of relative human normality. This understanding encompasses how people think, how they feel and how they act; the vast sink of their proclivities and motivations, strengths and weaknesses. Establishing truth in logic is not the same as establishing truth in law: in the one, the searcher for truth may unwittingly take the wrong path, miscalculate, or fail to take note of significant influencers on his reasoning, but this leads merely to his own discomfiture; in the other, the police investigator is faced by deliberate deceit, by lying, evasions, legal quibbles, restraints upon what he may ask, and misrepresentations, always with the possibility that an innocent person may suffer or a guilty party escape punishment.

Much of an investigator's knowledge will be tacit, arising from his innate qualities, family background and culture, mediated by life experiences, but some will be inculcated by study, work and training (Gordon, 1986). However, all his knowledge must be accessible to him through his facility of recall, his powers of comparison and his skill in organising, evaluating and selecting from what he knows.

His second source of strength is good communication skills. These start with knowing the amount of eye contact to make and the comfortable distance to position oneself from the subject. They are augmented by a clearly audible voice and ease in using a range and depth of vocabulary. Good listening abilities include hearing exactly what the person is saying; probing with questions to establish that both parties have the same understanding of what has been said, and divining when there is more to be heard, or there is a subtext in the material yielded.

During any encounter there will be many questions to ask, and perhaps resistance to being questioned, so there needs to be an emphasis on framing careful questions in a way that will encourage the respondent to answer. For many interviews it is useful to start with open-ended questions that allow the widest possible opportunity for recall, then gradually turn to more structured or even closed questions to home in on details. It will often be necessary to repeat or rephrase the question to get the most complete answer. A skilled interviewer theoretically has an infinity of choices in his mix of questions, but in practice the need for speedy answers in order to pursue an offender sharpens and adds urgency to the process.

The words being spoken by both parties are at the surface of their interaction. Below this is a subtle reading by both parties of nonverbal signs that accompany the speech. It must be remembered that nonverbal behaviour is universal but individualised, based on inborn ability to respond to stimuli, but conditioned by culture and personal experiences (Ekman & Friesen, 1981). This offers not only the possibility of another dimension to understanding, but also the likelihood of misinterpretation.

Kendon (2004) isolates several elements of gesture which are of interest to the interviewer. These include the orientation of the eyes and body; the way objects in the environment are manipulated; the way the hands flutter or point to emphasise a statement or illustrate an abstract idea that the interviewee cannot put into words; and common gestures such as nodding that are understood by both parties without specific words. Kendon considers that the linguistic content of the speech process is indivisible from its non-verbal partner if there is to be true understanding of meaning.

To this interpretation of gesture can be added the displays of feeling signalled by the flash of an eye, the reddening of a cheek, or the nervous twitch of the lips. The speed, emphasis and tone of the speech, together with the silences and hesitations, provide further clues to the state of mind and personality of the speaker. It must be realised that none of this vivid, credible information will appear in a written transcript of the interview; it must be noted by the interviewer as part of his assessment of the evidence and conveyed to the court by other means. As Kendon remarks in his prefatory explication, 'Although we still lack an adequate conceptual

apparatus, transcription system and terminology for dealing with the phenomena of gesture, sound-synchronised visual recordings make it possible to turn moments of gesture into *objects of inspection*' (Kendon, 2004).

Ekman and Friesen (1981, p 61) offer useful insight into how nonverbal behaviour occurs. They refer to the environment in which the interaction takes place and its capacity to influence its course and outcome; they reflect on the relationship between the verbal and nonverbal elements of behaviour; they consider the person's relative awareness and intention of using nonverbal gestures and whether he is responsive to external feedback. This last element is crucial to successful interviewing, and applies equally to the investigator and the interviewee.

They look also at the content of the information conveyed by nonverbal behaviour and categorise it as *informative*, in which the information is recognisable by both parties; *communicative*, where there is deliberate intent to convey a meaning by gesture rather than words; or *interactive*, which is behaviour meant to modulate the actions of the other party (Ekman & Friesen, 1981, p 63 et seq.). Much of their work focuses on usage – the way that gestures are made and how they might be interpreted – in the hope of codifying nonverbal behaviour into a lexicon of semiotics. Were the use of gestures proved to be universally comprehensible and not subject to the personal idiosyncrasies and musculature of the individual making them, a lexicon would be of enormous use to police investigators. However, although various attempts have been made to record and categorise gesture, the production of such a definitive lexicon has not yet been realised.

The investigator's next strength must be his understanding of the rules that apply to police interaction with the public and specifically those that protect both parties from accusations about misuse of power. British and Commonwealth countries have inherited principles based on early guidelines set down by Rowan and Mayne, the first Commissioners of Police, in 1829, which stress the need for correctness, courtesy and equal treatment for all. The founding concepts of the Magna Carta and English common law underpinning these principles have since been supplemented by global Human Rights legislation banning illegal detention and torture.

The combination of insight into cognitive skills, human psychology, communication, spoken language and nonverbal behaviour equips the investigator to weigh the truth of what is being conveyed to him, while his willingness to abide by the rules set down for him, though perhaps inhibiting his pursuit of truth on occasion, ensures that the evidence he elicits is later acceptable in court.

All these considerations, constraints and techniques shape the investigator's approach to his human sources of knowledge.

The first source of explicit information in many cases will be the victim. Here there must be careful assessment of the level of trauma and the application of special skills in dealing with victims, for the need for the fast transfer of information must be weighed against the needs of the victim; time to rally may not improve the quality of recall.

Then there needs to be a search for primary witnesses, people who were present at the scene and can supply details of the locale, describe the participants, state the time of the incident and relate its development. Schollum's research (2005) indicates that a full and correct statement by a witness is often the key factor in determining whether or not a crime is solved. To obtain the maximum benefit from these witnesses, the investigator needs the medium of a formal interview where the style and purpose of the process is mutually understood: in police training terms, 'a conversation with a purpose'. The aim is to create rapport by putting the witness at ease and finding a common level of language in which to communicate; to listen attentively; to check understanding of the information given by repetition or rephrasing of questions; to assure the witness that there will be initial confidentiality and safety from reprisals; and that their contribution is valued. If done well, this initial interview will pave the way to further profitable interaction with the witness and to their confident performance in court later.

Information can be sought in the same way from witnesses to other aspects of the incident, such as the subsequent movement of vehicles, names of people who might have been involved, places where items of interest may have been concealed, local weather conditions and so forth. Some of this information will be volunteered, but

most of it will be garnered by careful assessment of likely sources of information and the painstaking tracking of these sources. There are still in existence in most jurisdictions the semi-professional informants, like the ‘copper’s narks’ or ‘grasses’ of yesteryear, whose desire to gain rewards of money, police approval, revenge or power by informing on their fellows must be weighed against the potential veracity and usefulness of the material they provide. More accurate, and harder won, evidence may come in some serious cases from undercover agents (Madinger, 1999).

Dealing with specialist witnesses may require tact, a good (if amateur) understanding of the techniques they use, and the cognitive skills necessary to evaluate both the evidence produced, and the credibility of the expert also. After all, the foremost forensic expert of the first half of the twentieth century, Sir Bernard Spilsbury, could present evidence in court in such a way that it seemed unchallengeable; it was many years before the dubious and probably erroneous nature of many of his conclusions could be brought to notice (Evans, 2006).

Eventually there will need to be an interview with the offender. Naturally, there will be factors to this that make the eliciting of truth from both verbal interviews and written statements from a suspect even more difficult than from victims and witnesses. Elements of common law come into play – the right to remain silent, the right to be warned of the consequences of a confession, the right to fair and equitable treatment, the restrictions against compulsion, torture or being held without trial. In both the United Kingdom and The United States of America these warnings are enshrined in law and in police practice (Vick, 2010; Wyant, 2004). In the Netherlands special attention is paid to the possibility of false confessions. Guidelines for interviewing emphasise that alternative explanations of the evidence must be allowed for and there must be no external pressure on the suspect. Instead, strategic use of evidence already collected and straightforward, non-suggestive communication is encouraged (van der Sleen, 2006).

In addition to general rules for the handling of suspects, guidelines for ethical interviewing, such as those enshrined in the Youth Justice and Criminal Evidence

Act 1999 in England and Wales, have been established in most Western jurisdictions (McGurk, Carr & McGurk, 2004).

The method of interviewing most commonly used in the United Kingdom is the PEACE system (ACPO, 2010). Based on years of research among successful practitioners, the PEACE training scheme consists of five elements at basic level:

- Preparation and planning;**

- Engaging and explaining;**

- An Account of the event is made;**

- Closure (all points have been covered and everyone involved knows what is going to happen next);**

- Evaluation by investigator to establish:**

 - what points there are to prove any offence;

 - what evidence there is of a defence to the charge; and

 - what other areas need to be addressed.

In the preparation and planning stage the investigator surveys the evidence he has already accumulated and notes any points he wishes to cover. The body of the interview will generate information, but this may be of wider significance than the singular incident being investigated, so a fluid approach to content may be more productive than a rigid series of questions.

The investigator must keep an open mind, especially if his intuition has already prompted an hypothesis to explore. He needs to organise the venue and allow for the time, recording equipment and staff he will need.

The engaging and explaining part at the beginning of the interview will focus on creating a comfort zone for the interviewee in which he will feel welcomed, worthy, at ease physically and not intimidated. There are useful techniques for doing this, ranging from seating arrangements to the neuro-linguistic programming model of interpersonal communication designed by Richard Bandler and John Grinder (Bandler & Grinder, 1975). The aim is to achieve a sense of rapport between the parties concerned.

During the giving-an-account stage of the interview there are two methods of approach currently favoured – the cognitive approach, and conversation management (McGurk, Carr & McGurk, 2004).

In the cognitive approach the interviewer lets the person make a full account of the incident without interruption, prompting only if necessary, and ensuring the questions are not leading ones. The interviewee is then asked to tell the incident again, using a different approach, perhaps in a different chronological order, or from a different perspective. Only then can more precise and detailed questions be asked. The relief of being allowed to tell their story as they wish, with an attentive and apparently non-judgemental listener, has proved to be congenial to victims and eyewitnesses alike, and productive for the investigator. One particular advantage of allowing the witness an untrammelled narrating of the experience is that they are less susceptible to influence from the investigator. Under the old system of interrogation, witnesses might quickly make assumptions about what points appeared to be of importance to the interviewer and be encouraged to dwell on these to the detriment of other, potentially more relevant, areas. Timid witnesses might even be inclined to invent details in the hope of pleasing an adversarial interviewer. The cognitive interview is therefore seen as both a mitigator of suggestibility and a defence in court against allegations of police intimidation.

In conversation management the interviewee is asked first to say what happened, as in the cognitive approach. The interviewer then subdivides the account into a number of parts, and these are gone into in further detail. The interview is basically more controlled by the investigator than in the cognitive approach, but it is still not an interrogation. This method is useful for reluctant witnesses, as there is less chance of relevant matters being dodged (McGurk, Carr & McGurk, 2004).

The end part of the interview, when the interviewer tells the interviewee what will happen next and thanks them for their participation, often yields further useful information (Ord, Shaw & Green, 2004). This typically happens if an experienced interviewer has a strong intuition that not all the interviewee knows has been told, and in the relaxation of tension now that the formal interview is over, and by careful

probing on the expert's part, an atmosphere is created that prompts the interviewee to disgorge further details.

The final stage is the crucial part of the process: the weighing of the information elicited for veracity, significance and completeness; the identification of gaps in the testimony and points to be clarified; the comparisons with material from other sources; the decisions to be made about the usefulness of the material to the case being formed.

While the PEACE process is recognised as both a sensible and a sensitive approach to interviewing, in the United Kingdom the early evaluations suggest that more time needs to be spent in training and in ensuring that appropriate changes in the attitude of the interviewing officers have been made (Clarke & Milne, 2001). A recent survey of interviews with suspects who did not confess, with an analysis of the denial strategies used by the subjects and the counter-techniques used by the interviewer, perceived many investigators as still being highly coercive in their interviewing (Moston, Fisher & Engelberg, 2006).

The points raised by Clarke and Milne have also been recognised during the New Zealand police's evaluation of the method; the New Zealand evaluators felt that every interaction with a member of the public would have to be seen as an interview to which the PEACE rules would apply, and that the diminished force of an interview with a suspect would mitigate against his confessing (Agnew, 2006). More prosaically, it would cost time, money and resources to achieve the training required, and recording and transcription equipment would need to be updated.

Other jurisdictions conduct their investigative interviews on slightly different lines to meet the specific evidential requirements of their court systems. The Sûreté de Québec values the importance of objectivity, rapport, attention and professionalism to the success of the interview; in interviewing suspects with the object of obtaining a confession they identify the individual characteristics of the offender to assist themselves to choose an appropriate approach, then focus on drawing the suspects' attention to the weight of evidence against them and the likely consequences. As in

the PEACE model, the closure of the interview is felt to be of crucial importance in yielding further information and cooperation (St-Yves, 2006).

The Norwegian investigative programme KREATIV reflects a European approach to interviewing of suspects, based on intensive research in their own domain. While appreciative of the British PEACE model, the Norwegian authorities felt they needed more focused strategies for tackling resistant suspects, since their previous strategies had been queried, researched and found by the Norwegian Supreme Court in 2003 to be over-manipulative in eliciting confessions. The new system allows for the open-minded testing of hypotheses and tactical use of evidence and has proved popular with serving investigators (Rachlew & Fahsing, 2006).

The French court system, like those of the British Commonwealth and the United States, acts upon a presumption of innocence in those brought before the courts, but the burden of proving guilt is not so great, certainly not 'beyond reasonable doubt'. There is no requirement to warn arrested persons of their rights or that material taken down by officers may be used against them, nor will the majority of cases ever be presented to a jury. Instead, a panel of three judges will oversee the trial, and if convinced by a preponderance of evidence, will pronounce the offender guilty (Kahn & Vonderweidt, 1997). The officer in charge of the investigation therefore approaches the interviewing of suspects by focusing on collecting evidence for later use in court. The police officer in charge of each case prepares a final statement in which the evidence is summarised and the conclusions reached laid out. To produce an irrefutable chain of evidence the French police have long practised a form of cognitive interviewing using retrieval mnemonics and a sophisticated pattern of collecting and recording simultaneously both the main strands of evidence and supporting details. A further element to the cognitive interviewing process, based on a 'synthetic reformulation' of the interview content, has recently been researched (Py, Demarchi & Palma, 2006).

A further factor can be whether the oral interview has been preceded by any other process. For Clark, of the Connecticut State Police, there is virtue in getting witnesses to write out a full account of the incident in their own words before any interview is held. By analysing beforehand both the account and the witnesses'

typical use of language, the astute interviewer can build rapport in the subsequent interview and concentrate on aspects of the story that are unclear, questionable or missing (2006).

Detecting deceit is one of the darkest and most challenging tasks in knowledge management. Strong emotions in the offender, such as feelings of guilt, self-loathing, resentment, fear of self-incrimination and disgust, may produce visible and audible signs that can be picked up by a sensitive interviewer (Frank & Ekman, 1979). Prime among these nonverbal signs are facial expressions, and the tell-tale signs may be minute and fleeting, the merest flicker in a microsecond of time, yet capable of sure interpretation. As with other clues, the absence of an expected response or expression may be equally informative. The second useful area for signs of deception is the tone of voice, inflexion, speed and cadence of the narrative, taken in conjunction with facial expression and the rest of the body language.

Hervé, Ekman and Yuille (2006) have isolated several key points for evaluating truthfulness, based on the work of members of the Ekman Group, pioneer researchers on emotions, deceptions and the psychology of lying. They posit that to be successful in detecting deceit, the investigator must already have a sound knowledge of emotional and cognitive processing. To this he needs to add adept interviewing skills, based on listening actively by observing speech type and content and watching body language, especially facial expressions. He must allow for moderating contextual factors, then look beyond the larger and more general elements of the interaction presented to him to read micro-expressions and hear vocal nuances. He must examine statements for credibility, using commonsense interpretations of what is being laid before him as the truth. Inconsistencies between the text and nonverbal subtext may then be identified and explored. If done well, the procedure is considerably more subtle than attempting to identify deceit by mechanical means such as the polygraph. Furthermore, skill in detecting deceit has proved to be a general ability that is not limited, but can be applied to different people and different kinds of lies (Frank & Ekman, 1979, p 1429).

Interviewing skills do not end at the closure and evaluation stage. From the interview devolves the written statement, the narrative record of what each witness said and

their affirmation that this is a complete and truthful account of what they know about the incident.

There are two favoured methods of taking a written statement: the secretarial method, where notes are taken as the witness is interviewed and later written up in a formal statement; and the video-assisted interview. Many police departments do not have the budget or expertise to employ videotaping, yet a British study strongly recommended that all interviews should be recorded, since this enabled a witness to give an uninterrupted account while the memory of the incident was relatively fresh (Clarke & Milne, 2001). It should be realised that eyewitnesses will be required to re-visit their memories many times in the course of planning for and undergoing a court appearance: each retrieval of the memory offers the possibility of revision and suppression of detail, but an initial interview which has been videorecorded provides a base against which subsequent accounts can be measured.

Mitchell (2006) points out that the process of writing statements is a 'complex literacy event', vulnerable to misinterpretation or the loss of nuance. The process is dependent on the commonality of language and understanding of metaphor between the transcriber and the interviewee; on the ability of the one to frame an acceptable discourse of events from the oral account, and of the other to read, evaluate and confirm what has been written as a true and complete record of what transpired in the interview.

There now exists a basis for the next stage of the investigation, the establishment of the veracity of each written statement. A careful study by Adams (2002) examined sixty written statements, thirty proven to be basically true, and thirty which could be proven false in major elements of the account. These statements were divided into three sections:

- an introduction, in which were details of the context of the incident, the time, the place, the date, the people who were there, perhaps even the weather;
- a full account of the progress of the criminal incident that related how it happened, who was present, what they did; and

- a conclusion in which the person interviewed said what they did as a consequence of the incident; this ranged from notifying the police to emotional reactions such as shaking or crying.

Three main features that differentiated the truthful statements from the deceptive ones were identified (pp 11-12):

- In truthful statements the account of the criminal incident was typically the longest of the three parts of the statement. This was not true for deceptive statements, which had longer introductions with lots of detail about the context, but much vaguer accounts of the incident itself.
- The truthful statements included more unique sensory details than the deceptive ones, particularly when describing the course of the incident. People described sounds, smells, touching sensations and feelings as well as what actions were taken.
- In the conclusions of many truthful statements the writers told frankly of their emotions; this was especially true of serious crimes such as homicide.

It is helpful to have such a practical initial measure to check the veracity of written statements, but the identifying of deliberate deception or avoidance is usually the result of careful cross-checking of evidence. Steller and Kohnken (1989) propose criteria for a methodical analysis of both oral and written statements: to examine their general characteristics, specific contents, peculiarities of content, motivation-related contents and offence-specific elements. Use can then be made of a validity checklist which covers the psychological characteristics of the interviewee, the characteristics of the interview and its degree of force, the motivations of the parties and the consistency of the interview questions with other statements, other evidence, and the laws of nature.

7.2.4 Knowledge about systems

There are specific systems which are essential to an investigator. A standard list of systems provided by most police services around the world would probably include systems for note taking, recording offender details and report preparation; verification systems such as DNA analysis, fingerprints, photography, document

analysis, records of modus operandi; systems for obtaining legal and other general information; prisoner details; crime statistics, such as patterns of offending for various areas; profiling systems; court records; court systems for proving the elements needed to establish specific crimes were committed, including the rules under which evidence will be admitted into court and how to testify effectively (Swanson, Chamberlin & Territo, 2000). These specific investigation and trial systems interface with administrative systems, such as ways of obtaining funds and resources, and systems supplying personal needs, such as pay, welfare and promotion systems.

There is, however, a difference between an information system and other sources of organisational knowledge. The United Kingdom Academy for Information Systems arrived at the definition, 'Information systems are the means by which organisations and people, utilizing information technologies, gather, process, store, use and disseminate information'; further, that 'the study of information systems and their development is a multidisciplinary subject and addresses the range of strategic, managerial and operational activities involved in (these processes), in society and organisations' (UKAIS, 1997). The definition is practical and may well describe the run of the mill activities of a business enterprise; but organisational knowledge encompasses more than simple information. It must include all the social interaction that takes place, with its hierarchies and rules for contact and intervention; the expressivity of signs and their ready understanding; the recognition of sacred cows and shibboleths that pervade the organisational culture, and how to render them lip-service; the hands-on techniques that are organic to others, and the conditions under which personal knowledge and skills may be handed on; the individual's tacit knowledge not compulsorily shared with colleagues; and the contributions from outside agencies. The knowledge-management system must foster creativity in those who use it, innovation in its own growth and development, and transmutation of knowledge into more complex and sophisticated forms.

In particular, to obtain the best results from his use of the systems provided for him by his particular police department, the investigator needs to understand the wider environment and the principles of knowledge management which underlie the systems. This will involve issues of the purpose, design and construction of

knowledge management systems, coupled with reflections on his access to, and use of, them.

It will also be necessary for him to lay aside the familiar information systems by which police departments throughout the world have traditionally been run, and find their analogies in new systems founded on computer databases rather than on paper records and people's memories.

In former times the explicit information recorded by a police force had a powerful gatekeeper, an older non-commissioned officer who ran the filing system. Though certain details were prescribed by the legal system to be kept on file, the extra information contained in the records was often idiosyncratic, sometimes verging on the speculative: what was put in and how it was structured could be highly personalised by the gatekeeper.

However, there was one strong advantage in using an experienced police officer in the gatekeeper role, and that was his tacit knowledge of the police task and the court process. His position in the station kept him au fait with the details of current investigations, with the movements of criminals and with crime trends, both local and nation-wide. He knew likely offenders, informants and where to get specialist help; which retired policeman might have useful details to contribute to a current case; which judge was available to sign a warrant at an awkward time; plus a wealth of information about the personnel of the station, from their preferred work methods to their personal peculiarities. It was a responsible, enjoyable position of power: the best of the desk sergeants were trainers and mentors to junior staff and a source of comfort to their superiors.

It was the loss of the professional police gatekeeping that first exercised the concern of investigators when the new computer-based information systems were introduced (Cameron, 1990). The new experts were from the civilian world, working in the scientific field of information technology; the new gatekeepers were clerks and computer operators – they could input information, but could they weigh it, assign value to it, select the right amount to input, use the right terminology? The new gatekeepers could be feared, resisted, avoided, despised – or they could be integrated

into the police culture if the goodwill and the medium of approach could be found. For many investigators, the success of any new system rested on whether it could supply them with the information they needed as quickly and efficiently as their traditional means; their second concern was whether it could be accessed freely at their preferred time without their having to go cap in hand to the new gatekeeper as though asking a favour. This degree of autonomy of access might be assured by each investigator's having his own personal computer, but the second problem was that there was no control on with whom the information could be shared. The program might be unavailable to members of the public, or even the civilian staff, but the explicit knowledge it contained, and the tacit knowledge on which that depended, was now communal property. There were issues of the loss of personal power that had been accrued by inside knowledge and perceived job expertise, and of the edge given in pay and promotion by this reputation.

This is not an isolated problem. Research shows that many institutions have not taken sufficient account of the dynamics of acceptance, resistance and continuous negotiation when embracing new systems (Silverstone, 1994). Mansell, too, reflects that the introduction of new information and communication technologies is complicated by social, political, economic and technical factors which do not unfold in a linear (or possibly, predictable) way (1994, p 336). There is also the halo effect of installing a new system: it may induce a feeling that progress is being made, but by themselves, new systems should not be expected to improve the organisation's decision making nor to cure long-standing inefficiencies.

In surveying the diffusion of information and communication technology in the world economy in the 1990s, Freeman notes that in spite of the enormous advances in information systems, computerized telecommunications networks and innovative service applications, there is still a tendency for 'path dependency', in that established patterns of behaviour and decision making persist through time (1994). Because of this, the planning for any new knowledge management scheme should include considering the skills of workers available locally, and of their managers, in learning new paths; devising and implementing relevant training for everyone; and involving the key players from the industrial relations arena. Fortunately, many police were adept in using computers long before they became widely available in

police stations; the old typing skills required of police recruits soon smartened into efficient keyboard skills.

The concern at sharing tacit knowledge with others seems to have a cultural component, affected by both the prevailing national culture, and the work culture. A study by Busch and Richards (2004) found that tacit knowledge transfer was more congenial and less threatening to transferers when it was done in intimate meetings, with repeated contact and a lack of electronic communication; in other words, as people helping each other out with needed knowledge. Japanese concerns were able to accomplish this personal interchange well, while still supplying sophisticated computer access to explicit knowledge. On the other hand, many Western cultures resented the time taken for face-to-face meetings, and because of their size or distributed locations were physically unable to do so. However, the long-standing custom of police roll calls, and the practice of investigative departments within police services of having combined information meetings involving all uniformed and detective staff when a major operation was under way, helped to mitigate the problem.

Thus there are many aspects to investigative knowledge-management systems that determine their success: the organisational climate and attitudes to knowledge, sharing and change; the historical traditions of knowledge management for the agency and how far they have persisted into the computer age; the necessary balance of paper-based, people-based and technology-based conveying of knowledge; the belief of senior management in the usefulness of the systems, and their provision of adequate funds and staff to operate them.

7.3 The knowledge available to police investigators worldwide

7.3.1 Sources and systems

A traditional source of general knowledge for many police agencies has been their library. The best of these keep copies of all material related to their agency; offer information on the latest developments in forensic science, on new techniques of investigation; they give background information on global crime trends; their participation in a world network keeps them au fait with police systems and events

around the world. There is easy access to official government publications and material held by other ministries: this can include electronic data as well as printed material. Knowledge can be made available in many media, and the superb police libraries also offer a press cuttings service and research facilities.

Practical knowledge on how to do the job is often stored by agencies in forms such as manuals of practice or schemata to be followed in undertaking aspects of the task. These may be paper-based or on computer; their degree of usefulness may vary according to the age of the material, the utility of the techniques suggested, the degree of mandation and the experience of the operator.

Many agencies possess museums of police history, whose volunteers (usually former police staff) can offer a wealth of information. More common are forensic museums, often sited at police training colleges for teaching purposes, or pathology museums, sometimes established in association with hospitals.

All agencies have forensic information systems (such as photographs, DNA records, fingerprints, *modus operandi*), many with the capacity for sophisticated analysis and comparisons of data; and elaborate records, such as of persons of interest and missing persons, lists of stolen property, pawnbrokers and hoteliers. The amount and nature of the information entered, and its confidentiality or ease of access to those recorded, varies considerably across jurisdictions.

There are systems that directly relate to the police task – that structure material ready for court cases; that collect and analyse components of individual investigations; telecommunications systems; staff deployment systems. A typical example would be a GIS system for crime mapping, which has the basic four elements of hardware, software, data and people: its role is to capture, manage, integrate, manipulate, analyse and display data which is spatially referenced to the earth (Chainey & Ratcliffe, 2005). Such a system is widely available for operational, investigative and administrative purposes.

Some systems are more controversial, such as those which utilise software that can screen cases under specific criteria and decide whether to expend police time and

resources on them, or determine the order of priority where there is a glut of crimes requiring attention (Grunwell, 2007).

Below these are the organisational systems that run the great engine of a police agency: the administrative, financial, personnel, resources and security elements of management. All have both general and specific functions, and all contribute to the organisation's knowledge and the achievement of its purpose.

When conceptualising a model of knowledge management specifically for the criminal investigation process, Nordin, Pauleen and Gorman (2009) focus first, like Weston and Wells (1990), on the process, defining it as:

- a crime reported or detected by police;
- preliminary investigation;
- follow-up investigation;
- suspect development and apprehension; and
- case construction.

They then isolate five 'antecedents' for the knowledge management: philosophy; sociology; psychology; computing and information systems; management: thus foreshadowing the construction of a system 'more relevant to particular applications in organisational and practitioner contexts' (p 18).

7.3.2 Qualities of a police information system: quantitative and qualitative aspects

Whatever the source of the information that becomes part of explicit investigative knowledge, there are issues of quantity and quality that must be addressed.

Consideration of the literature on knowledge management, and practical experience within a police agency, confirms that knowledge is not free: it requires time for its consideration and manipulation into retrievable chunks; a geographical location, however small the microprocessing system; hardware, software, telecommunications or paper for its transmission; payment for its acolytes and for its maintenance; power for its machines and royalties for the use of systems. There are therefore serious considerations for the selector and manager of investigative knowledge management systems.

7.3.2.1 Sufficiency

The first issue is how to achieve a sufficiency of knowledge to meet the organisation's needs. It is tempting, when designing a system, to try to include all possible information; if all is to be included, there is no need to face issues of assessing material and actually making choices about what to include, and who is to do this. However, where investigative material has to be recorded, there is little room to manoeuvre: the smallest piece of data may turn out to have a key role to play. Such an all-inclusive system may be bulkier and slower in retrieval than a more streamlined version; issues of speediness and specificity have to be balanced against issues of fullness.

The second aspect of sufficiency is to have enough systems, or a good integration of systems, especially when new facilities are added to old structures, or the investigative department of a police organisation has need of task-specific knowledge, or for confidentiality. There needs to be constant monitoring to ensure that there is also enough variety and flexibility in the type and design of systems.

7.3.2.2 Suitability

The knowledge may be ample, but it will also have to be relevant; the systems may be numerous, but they have to fit the needs of users. This is expensive in terms of having trained staff to evaluate and enter information, to design and tailor systems that meet the needs of the organisation, and constantly to monitor relevance. It is essential that a system can 'learn', rather than need total replacement as tasks become more complex, or demands on it change in nature.

The systems themselves have to be suitable for the task and the capabilities of those using them. Even the simplest requirements, such as having hardware that is ergonomically comfortable to work with, or having instructions for use expressed in plain, comprehensible terms, can affect employee satisfaction with a knowledge management system. For a system to be congenial, its earliest designers must ask whether the knowledge it is to manage is the sort of information that is wanted, and whether it can be presented in a way that is unfailingly understood by all its users.

7.3.2.3 Accessibility and speediness

A vital characteristic of an investigative knowledge management system must be its accessibility to the investigator, who typically works in a variety of loci and at any hour of the day. Goddard (1994) propounds the notion that networks allow ‘action at a distance’, including interactions with the material world; he adds to this general recognition of utility a suggestion that power relations, too, can be structured over space or geographical separation. This adds a dimension to accessibility not only of who is permitted access, but also of who chooses and empowers them to attain it, and who monitors their use of it.

For it cannot be denied that there are many barriers to access, and that many of them relate to power. It becomes essential to look at access in terms of how knowledge is reached, whether it is always available, who is allowed to share, and whether there is a climate that encourages sharing.

Some barriers are purely physical, such as the placement of hardware in difficult locations, or working in an area dead for wireless reception. Some are related to shared usage, which can result in access having to be timetabled, queues, and difficulties at peak periods. There can be problems with safety precautions, such as encryptions and time locks, and mechanical problems, breakdowns and excessive downtime for maintenance. None is so pervasive or frustrating as having gatekeepers, and others with specious ‘entitlements’ to priority, delaying speedy access to crucial knowledge.

Modern telecommunications and information technologies transcend many of the barriers that hindered investigators in the past. Merely being able to access the knowledge held in a central repository, from wherever in the country an investigation happens to be; to fill out forms and record information for multiple purposes and end users, no matter the locus or the time, frees the investigator from much former tedious work, duplication of effort and need for storage space. Ericson and Haggerty (1997) cite an example from Ontario where a routine investigation

took an hour of the officer's time, but the 16 separate forms to be filled in took a further three hours.

The second improvement is in the overall speed with which routine tasks, such as comparisons of evidential data, can be accomplished; the downside is that because of the sophistication with which data can be manipulated, demands may become ever more strident for ever more detail.

7.3.2.4 Up-to-dateness

It is important that the investigative knowledge management system be up-to-date, both in the knowledge it contains and in the manipulation of it. Obsolescence has to be coped with; it is relatively easy to see when printed manuals or computer and telecommunications hardware have become decrepit, less easy to look at the senescence of software and systems.

Part of the problem is cost, the other is organisational inertia. It has been pointed out by Quintas (1994) that most often technological and organisational changes in teams developing software projects are the result of external demands and contingencies, rather than driven from within. Proactive change is usually led by a key individual with a personal vision of a way to solve problems, and the ability to convince his fellows to join him in following it, spurred on by external pressures and, often, a shortage of money and resources. Once again, there needs to be specific responsibility for keeping knowledge up-to-date, with the task being undertaken by a practitioner with both knowledge of systems and of the investigators' requirements.

7.3.2.5 Reliability

Coupled with the need for up-to-dateness is reliability: the knowledge must be able to be trusted. A system's basic reliability depends on the input of accurate data; constant maintenance; and refreshment of content; it needs a reputation for delivering quality material whenever required. Reliability is sometimes confused with the ability to produce the desired result. Mansell (1994) warns it is not unusual to find that software packages are offered as a solution to inefficient business practices, that high performance computing systems are expected to solve problems

of managing and using information, or that intelligent digital telecommunications networks are expected to improve the quality of decision making within organisations of all kinds. However, the management of the innovation process that leads to the technological capabilities of ICT-based applications such as these, and to trends in the patterns of control over their use, is increasingly being recognised as of perhaps even greater significance than the technologies themselves.

7.3.2.6 Directionality and universality

Directionality in a police knowledge-management system means flexibility in designing the transmission of information to recognise different relationships: between the user and the information when inputting and accessing data for individual use; one-on-one sharing of information; one-to-group use; group to group use; police agency to court apparatus linkage; even superior to subordinate; policy maker to practitioner, as under the old ‘need to know’ practice of structuring the circulation of information. Inherent in this is the ability to sequester knowledge or applications from certain users; it may also subsume the verification process, so that some recipient areas might receive the more dubious information arising from rumour and unsubstantiated reports in clearly ‘tagged’ format.

Gottschalk (2006; 2007) presents the development of a police knowledge-management system as an ever-increasing use of information technology by the police agency, with social, procedural and cultural ramifications for its members. He models this directionality as a continuum which at present has four stages:

- officer to technology – developing personal efficiency in the use of word processors;
- officer to officer – using intranets, emails to find what others know;
- officer to information – getting access to stored material; and
- officer to application – using specific information technology to solve a problem.

In effect this reflects a change of media for communication rather than a change in the nature of agency interaction and communication.

The term 'universality of systems' may have several interpretations. One version relates to the utility of a knowledge-management system: its ability to be used by any investigator, anywhere in the nation, on the same task. A second quality of investigative knowledge-management systems may be their capability for wider application and usage than just for local or national purposes, leading to consideration of how such international links might be negotiated and operated. Knowledge about appropriate systems for investigative work could be shared, as well as the expected use for supplying information about new forensic technology, criminal networks, terrorist operations, global trends in crime, international drug syndicates, suspicious travellers, spies, refugees and so forth. Links between local, national and global investigative agencies would need to be functional for the lowest end user; they could enable managerial, or even political, control of police functions from within or without a local station, a national headquarters, or even another country.

Vast improvements have been made over the years in police communication systems, because controllers need to know where their 'troops' are, whether they are available for deployment, and whether they are safe. It is no longer necessary for the controller to be nearby in the same area, in the same city, or possibly in the same country. If call centres and help desks can be anywhere on the planet, linked by a satellite in space, why not police communication and command centres?

There are advantages in having an international community of sharers. That need drove the formation of INTERPOL in 1923 in Vienna, with twenty member countries; it was disbanded in 1938, but reconstituted in Paris in 1946. Its ongoing acceptance and success among so many police departments and agencies throughout the world is expressed in the increasing desire to expand international police networks. This desire to work together is bolstered by the feelings among police everywhere of having bonds through their common cause, duties, and shared concerns, and by the prevalence of international police fraternities such as the International Police Association and the International Association of Chiefs of Police, which articulate shared values (Bennett & Hess, 1993).

7.4 Legal, social and ethical aspects of investigative knowledge-management systems

For many reasons, not all tacit or explicit knowledge entered into police knowledge-management systems is necessarily true or complete. There may even be value to the investigator in recording rumours, gossip, unsubstantiated information, malicious or outrageous statements, and ‘notings’ (Chisholm, 2007), on the understanding that these are to be used for comparison with other sources, clarification and verification at a later date. However, such material needs to be clearly marked, its purpose understood, and its removal ensured when it is found to be inaccurate. In former times, information of this kind was held informally by the records sergeant, but he offered access to such unsupported or biased opinions only to those he judged capable of appreciating the tenuous nature and confidentiality of the information – this gatekeeper function cannot be exactly replicated with universal, computer-based systems. It is therefore necessary for there to be protections in law for those who are the subject of police information.

Duncan (1999) suggests that there are two possibilities for this: restricted data, or restricted access. For an investigator there is presumably more value in having unrestricted data, but restricted access for people other than himself. In a democracy, apart from careful legal definition of what knowledge may be held about an individual or institution (or perhaps even a foreign state), there needs to be a facility for people to see the information held about them, privacy advocates or ombudsmen to be appealed to if the accuracy or fairness of the material is challenged, and some administrative review body empowered to monitor the equity of the process. All these facets are made more difficult if there is information sharing with other government agencies, and with agencies in other countries. However, while there is a variety of mathematical and statistical tools which may be utilised to protect privacy and access to data-based systems if the will is there to do so, the value of ‘rumours’ may lie in their shared specificity.

Milner (2000) emphasises the paradox of a society that claims to desire open government and freedom of information, but focuses on issues of privacy, information security, data protection and intellectual copyright. She cites international differences in access, whereby material kept confidential in one

European country may be made available through the more liberal interpretation of privacy in another; there would obviously be ramifications in this for any global investigative agency.

Duncan et al's earlier report on data stewardship (1993) identified three principles for data stewardship: democratic accountability, constitutional empowerment, and individual autonomy. Even the desire of investigative agencies to protect the public from those who would deny them these rights cannot free themselves and their knowledge management systems from the compulsion to work within these guidelines.

7.5 Monitoring and evaluation of information and knowledge systems

The worth of an information system also lies in how well the system itself and the knowledge contained therein are monitored and evaluated. In considering the monitoring and evaluation of knowledge systems there are several rich areas to explore:

- how well these systems run, in terms of both mechanical ease and output;
- how much the organisation has prospered from them: in output, in added value, in saved costs, and in consumer satisfaction;
- how much creation there has been of new knowledge and new systems;
- how well the users perform with them, and how satisfied they are; and
- how much growth and learning has taken place in the user.

As an example, the system of knowledge-management evaluation recommended by Sveiby for Scandinavian business organisations (1997) offers some interesting applications to the task of evaluating the success of an investigative knowledge management system.

Sveiby suggests that the three main areas for evaluation should be efficiency, growth and renewal, and stability: while focusing on the overall performance of the organisation in the competitive business world, he sees assessing the competence of individual employees as the key to the process. He therefore pays attention to their competence in relation to the degree of responsibility of their job, the area of their

expertise and its importance in the organisation, their level of education and their stability. If a careful outline is made of the areas to be assessed, with relevant criteria for evaluating performance therein, and their performance is graded by skilled supervisors over a period of time, some account of their growth in knowledge and competence can be obtained.

The organisation's level of performance can be gauged by seeing how many professionals they have, and how these are deployed; by checking how much customer satisfaction there is with results achieved, so that a sense of 'value added per staff member' can be measured; and by surveying the attitudes of the employees to their workplace, their customers and their superiors (Sveiby, 1997). In terms of an investigative unit, this would mean looking at crime clearance statistics; assessing relationships with victims, offenders and the court system, and noting the willingness of members of the public to volunteer information and help police. Longitudinal studies of public approbation for the work of police could be informative here.

It is essential to look at whether it is easy to recruit and retain trained staff. This last measure impinges strongly on costs. A high turnover means heavy expenditure of money, energy and time in training replacements and acculturating them, coupled with a loss of tacit knowledge, and damage to work and social relationships.

Growth and renewal, in Sveiby's terms, may be harder to gauge. For an investigative knowledge-management system it could mean more, and more pertinent, knowledge being stored; further aspects being added to a computer system to give a more rounded or value-based view of the statistics; speedier or easier access to information: it would certainly include consideration of a more harmonious and effective working environment, a lower staff turnover and the recruitment of excellent candidates.

For a community of practice, such as an investigative team, a fourth element to be measured might well be the extent of value creation. Wenger, McDermott and Snyder (2002) propose two ways of achieving this.

The first, very congenial to an organisation for whom criticism, gossip, rumours, value judgements and professional informants are tools to be strategically used in their given task, is to use anecdotal evidence. The authors feel that only a narrative account, a 'story', can adequately describe the linkages between activities, knowledge resources, and the outcomes of the action undertaken within a community of practice. The result of articulating such a carefully outlined and integrated story will be an assessment that value has been created; secondary outcomes will be a feeling of satisfaction within the community of practice itself and a growth of confidence in the practitioners from the wider organisation.

The second requirement is systematicity: a regular and unfailing recording of everything that happens within a community of practice: so that narrative assessments can be founded on data. Wenger et al (2002) suggest that basic questions need to be asked before the measurement of value creation can be systematically undertaken :

- for whom the measurement is being made, and to what purpose;
- what information is to be collected, and how it is to be done;
- how awareness about measurement can be raised;
- when and where the measurement is to be done; and
- how the data can be assembled to form a fair picture.

Then, if the assessors are skilled and experienced, a defensible statement about the increase in value to the organisation from the community of practice's efforts may be made.

Another way of monitoring the functioning of a knowledge management system, by focusing on how people change in their method of using it, is suggested by Pascoe and More (2004). They feel strongly that human communication in organisations represents far more than a mere conduit for knowledge. They have investigated the link between communication climate and the openness of interaction between members of the organisation, in particular how willing they are to speak to others, share knowledge and voice opinions, using a longitudinal study of a very large Federal department with offices distributed widely throughout Australia. They

suggest that a communication audit is a process that has proved useful for many years in determining whether knowledge and information sharing is occurring.

A key aspect to consider in any communication audit, and one that is relevant to an investigator's desire to have control of with whom he shares his knowledge, is Davenport and Prusak's concern that there be a volunteer, rather than a conscript, mentality in those managing the organisation (1998). There is also a difference between business enterprises and a public service facility in the attitude of managers towards staff: in one, the workers represent a cost against profit, in the other, they are 'human capital' (in Friedman's terms) and their knowledge and skill create the products being offered. Because of this, Milner (2000) points out that monitoring performance must relate to the over-arching information and knowledge strategy of the public service involved. It must also measure change in patterns of working and in acceptance of new, and possibly alien, methods.

An internal audit of the organisation's knowledge-management systems may reveal problems with access and flow of information as a result of human and mechanical error; it can detect overload on systems or identify under-use or quantify what the system has been used to do, but it cannot fully answer questions about the system's effectiveness without some qualitative analysis of user satisfaction.

In considering the evaluation of information systems, Serafeimidis (2001) points out the difference between formal evaluations following organisational rules and guidelines, and the evaluations of the stakeholders, which he feels have a more subjective and social dimension. He proposes evaluative schemata reflecting the stakeholders' cognitive skills, their place and purpose in the organisation, the time and the context of the evaluation, and the values and criteria to be recognised in its content; he thus allows for changes in perception over a period of time.

The investigative process is part of an essential service to the public provided by its police. Any survey of public satisfaction with the service, any sudden or regular welter of media comment, needs to be searched for the knowledge management component: whether there are any problems related to police access to knowledge and their skill in using it. An example of this comes from the New Zealand Police,

who conduct both an organisation health audit and a Citizens' Satisfaction Survey (*Police News*, December 2007; New Zealand Police, 2009).

7.6 Selection and funding of knowledge management systems

As with all government expenditure, selecting and funding an investigative knowledge management system has to balance what is necessary, what is desirable, what is available, what is affordable, what can best be integrated with existing systems, and what is acceptable to its users.

Traditional knowledge-management systems, such as police libraries, grew incrementally over a number of years. Within the budget, sums were allocated for maintenance of stock and purchases of new material; the arrival of photocopiers and microfiches could be incorporated at relatively low cost. The development of the library into the hub of a huge network of information technology occurred relatively quickly, and involved unprecedented expenditure in buying the new equipment and back-capturing the old information. Often the awareness of police librarians about information technology, through their tasks, their continuing training and their professional contacts, could be readily tapped for advice on the purchase of systems for practical policing purposes.

For most investigative agencies the great shock of introducing computer-based systems and telecommunications technology to a paper-based organisation is long over; the points of debate have been resolved or a compromise reached; employment conditions and training methods have been stabilised. The problem is finding the resources to update, maintain or replace existing hardware and software and to budget for new tools and techniques (Cameron, 1990).

Under the overarching knowledge-management policy embedded in any police agency's structure there should be organisation-wide awareness of the criteria by which new systems are chosen; there should be provision for wide consultation about the nature and design of any new project; the final decision on the project's utility should be influenced by both professional IT specialists and the investigators

who will use them. A well-argued and supported case can then be presented to the agency's executive committee for consideration.

Dean and Gottschalk (2007) consider that the basis for a police knowledge management system should have four practical components:

- information management systems (databases);
- crime mapping systems;
- intelligence surveillance systems with analysis capacity; and
- expert knowledge systems to aid decision making.

The expert knowledge system in particular seems to be aligned to the Investigative Entity model, because it uses an inference and reasoning process to solve an application problem (Dean & Gottschalk, p 97), somewhat analogous to the human investigator testing out hypotheses about a crime with which he is dealing.

7.7 Summary

The investigative entity is fuelled by information from and about people, objects and scenes, and systems, which the investigator synthesises into meaningful knowledge by using his cognitive skills. From this reservoir of tacit, explicit, usable knowledge comes the wherewithal to perform the investigative task: to establish that a crime has been committed, to identify the offender and to present a credible case against him in court.

For success in this, there needs to be productive management of his internal knowledge by the individual investigator, cohesive communication and sharing of knowledge within the investigative team, and a police knowledge-management system that is geared both to the task and to the way investigators prefer to perform the task. The essence of such a system is its sufficiency, suitability, accessibility and speediness, up-to-dateness, reliability and qualities of directionality and universality, and that it is a tool for intuitive decision making. To maintain a system embodying these qualities there must be consideration of the legal, social and ethical aspects bearing on the Investigative Entity model, constant monitoring and evaluation of existing systems and wise selection and funding of new systems. There should not be a dichotomy between the providers of systems and those who must use them; to

ensure congeniality and acceptance, there must be consideration for traditional practices and the detective persona when designing and selecting systems. Finally, the knowledge-management system must be rewarding to use as well as functional.

Chapter Eight

Exploratory case: a city-based Operations Group

‘...most of the policemen he had met were smart. They knew what they were doing. They were rarely squeamish about doing it. They had access to a lot of very helpful high-tech equipment. Best of all, they had the authority.’

Jane Haddam⁵

Overview

By this point in the research, the first part of the research question, ‘What is the nature of the investigative entity, and how do individual investigators make their initial decisions within it?’ had been answered by the creation of a powerful Investigative Entity model, based on a wide range of literature, embodying material on abduction, decision making, intuition, and cognitive skills. Reading for the second part of the research question, ‘What is the nature of teamwork within the investigative entity?’ had shed further light on the living process at the core of the model by emphasising the interactive nature of investigation and investigative decision making and the qualities required of a productive investigative environment.

Researching the third question, ‘What should be the qualities of police knowledge-management systems provided for investigators?’, had resulted in practical information about the investigator’s need for knowledge, police knowledge-management systems, and their most essential qualities, thus providing an understanding of the material fuelling the investigative process and adding a useful contribution to information for police policy-making.

The three threads had crystallised into a focus on the interaction of the investigator with the architecture of knowledge in accessing and manipulating evidential material in the initial stage of the investigation, when the first identification of the presenting event as a matter for police intervention is made, the first sparks of understanding of its likely causes and progression arise, and speedy and complex decisions are required to create a narrative of the presenting event that will enlighten the subsequent following of standard police procedures to produce a convincing case in court.

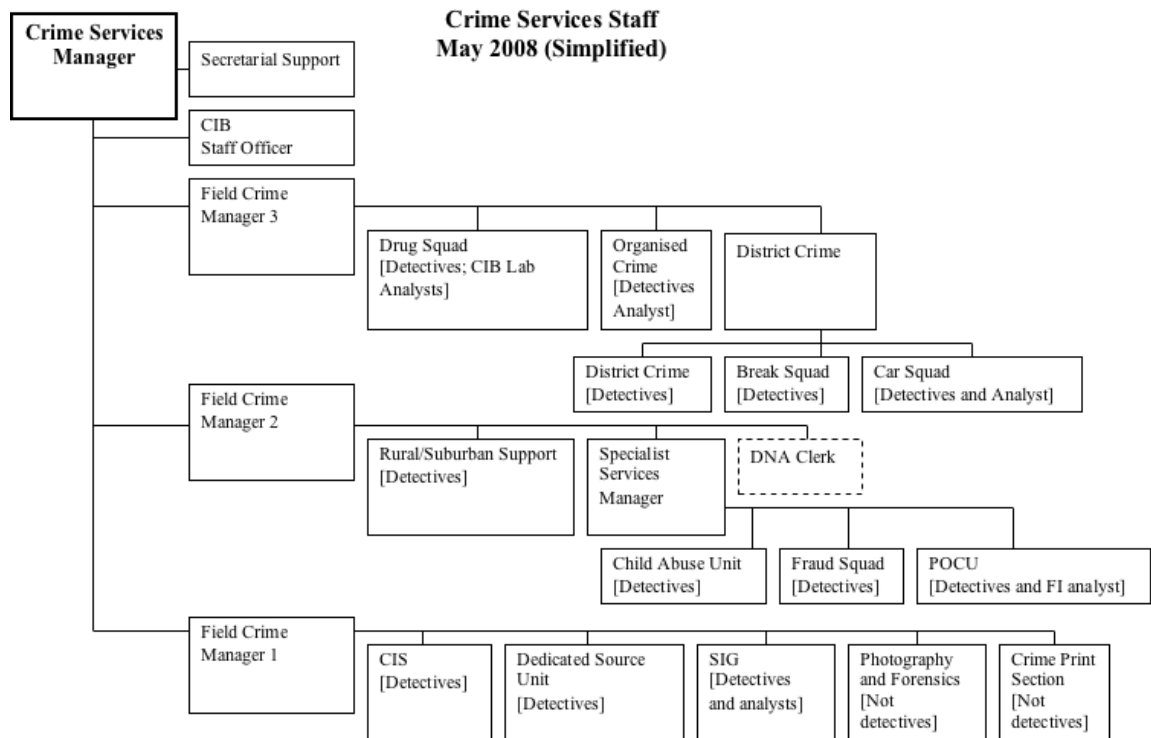
This depiction of a living investigative entity, with its philosophical underpinnings and its practical applicability to detective work in the initial stages of an investigation, was now ready to be tested in an empirical situation.

The first part of the chapter details the place of the case study group in the organisational structure. This is followed by a description of the individual investigators gained from observation and interviews: their management of tasks, and the impact upon them of knowledge management systems.

8.1 The Operations group

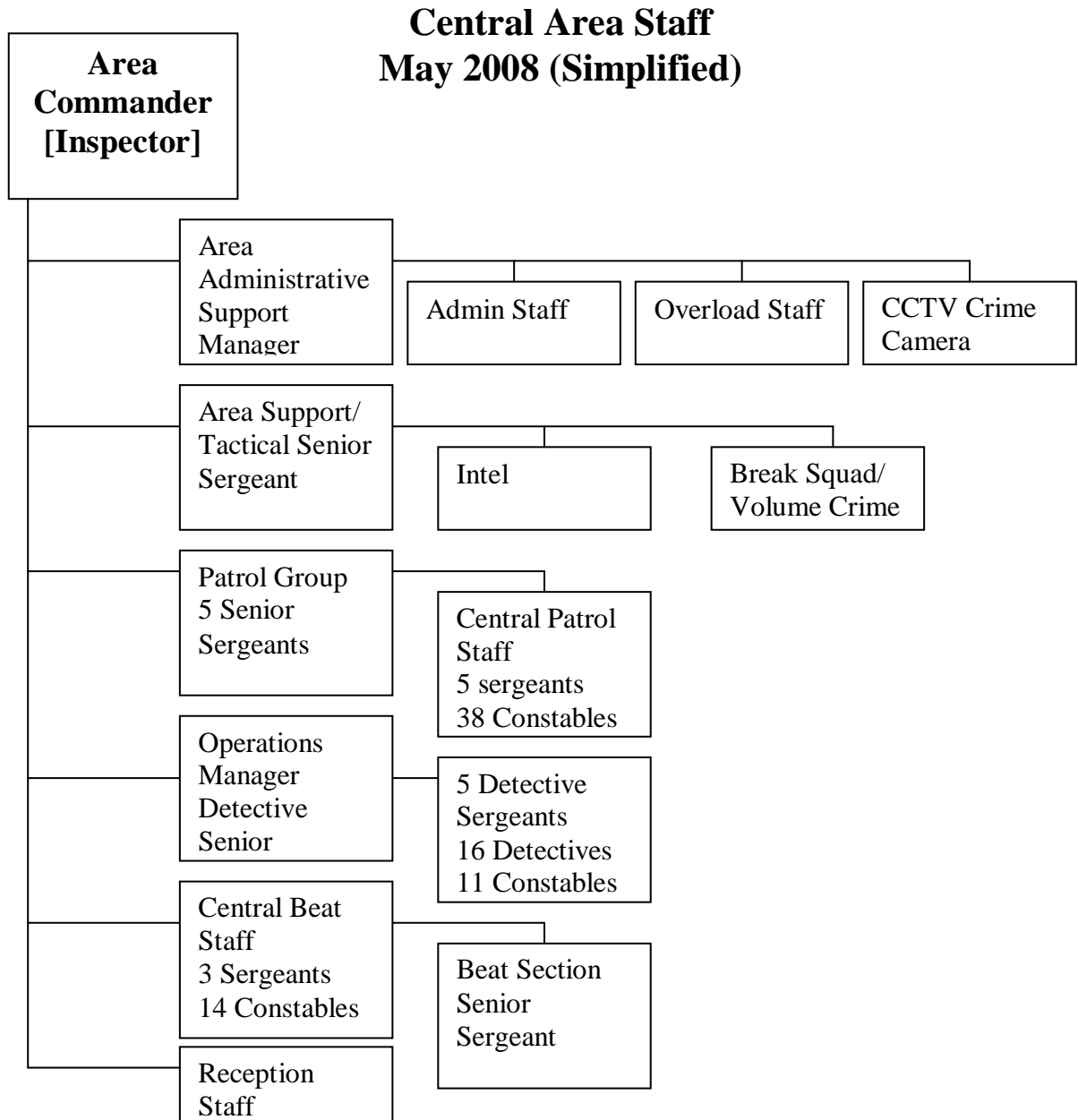
The group is sited within a regional policing district of New Zealand. By New Zealand standards the area chosen is large for a policing district: within its purview lie four major areas, each with much the same organisation of the policing task into beat and patrol functions, road safety and investigation, allowing for variations appropriate to the size, population and community characteristics of each area. While each area has its own apportionment of detectives, the overall investigation of crime in the district is the responsibility of a District Crime Services Staff group, headed by a Crime Services Manager at Detective Inspector level.

Figure 11: Part of the district organisation chart, showing crime services



The Central City Operations Group is, however, situated in the Central Area structure, as shown in Figure 12. It is officially designated a Combined Investigative Unit (CIU), with both detectives and uniformed staff sharing duties.

Figure 12: The place of the operations group in the area structure



There is a uniformed Area Commander (Kappa), overseeing:

- The patrol group;
- beat section;
- area administrative support;
- reception;

- area support/tactical section, including Intel staff and the Break Squad/Volume Crime group;
- **the operations group** – managed by a Detective Senior Sergeant, with 5 detective sergeants, 16 detectives, 11 constables/traffic constables and two non-sworn staff.

The group is housed in communal offices, with private offices only for supervisors, at the Central Police Station; even then it does not have its own separate floor, but shares the limited space available with uniformed staff engaged in other activities. There is a small room for interviews, but no common meeting room. All social amenities, such as meeting rooms, the mealroom and gymnasium, are elsewhere in the building and shared with all other staff, whether uniformed, civilian, specialist, support or maintenance personnel. Resources such as cars and typing services are also shared widely.

Deliberate measures are taken by the hierarchy to ensure staff do not become too entrenched in any section. There is a policy of rotation of CIB personnel through various squads, and all vacancies are advertised generically as ‘CIB Metro’, giving administrators leeway to send applicants within the area to any role or police station at their level of employment. As a consequence, no member of the Operations Group has been there longer than four or five years, most for considerably less, and all are aware that they must inevitably, however successful in that sphere, leave the group on rotation or promotion.

To become a detective in this nevertheless close-knit group entails getting prerequisite qualifications in investigation skills and being selected to serve a probationary period, during which further formal training is given, before an existing vacancy can be applied for.

8.2 The interview process

Before beginning the interview process I had information from a wide range of sources. First, I had the material contributed by senior investigative staff, knowledge-management systems directors and policymakers at Police National

Headquarters, which gave me an overview of what was currently being provided, and some direction as to the intent behind decisions and provisions that had been made. This had been supplemented by reading policy papers, working documents, police journals and information guides provided for staff. Next, I had discussed police knowledge management with many interested people, providing both factual material and subjective comment on it. There was evidence from other sources of how the case study group worked: district statistics of crimes successfully dealt with; comments by colleagues about the group's smooth functioning and absence of discord; the expressed approval of superiors; local media reportage that was generally supportive of their efforts; and the perceived respect of colleagues and the public: all these designated the Operations Group as an effective working group.

Finally, I had my own observations, a background of extensive reading on police matters, and discussions recalled over a long history of service. I therefore viewed the case study as a valuable exercise in discovering how individuals used their individual cognitive skills at the interface with the architecture of knowledge, which might have organisational implications for how they were deployed and resourced.

I felt that the size, personnel and typical investigative activities of the group would enable a depth of understanding to be reached that would be applicable to any similar group in New Zealand and hopefully elsewhere. The manager of the group willingly agreed to make his team available for study. After discussion with the district commander and the Policing Development manager I decided that the most productive method to gather information about its personnel and practices might be a mixture of observation, further reading of official documents at the relevant level, discussions with senior staff, and in-depth interviews with members of this clearly defined group. From a general overview of this working group I wished to tease out the individual strengths of the interviewees in using knowledge management for decision making in the initial stages of an investigation, and how these strengths were used by the team. To do this I needed to focus on their approach to an incident, their use of knowledge-management systems, and their abductive skills. The questions were therefore framed as listed on page 313.

To give an overview of the group, with an emphasis on the rigidity or otherwise of its chain of command, the degree of autonomy accorded to its serving members and its potential designation as a community of practice, a hierarchical selection of staff was interviewed. First, discussions about the nature of the project and its potential course took place with the District Commander and the Policing Development Manager. At their suggestion the area commander, Inspector Kappa, was included in the schedule to establish the Operations Group's place in his organisational structure and how this placing worked in practice. These meetings were followed by an initial interview with the manager of the operations group, Detective Senior Sergeant Epsilon. A supervising detective, Detective Sergeant Lambda, formed the hierarchical link between Epsilon and two experienced detectives, Alpha and Delta. A probationer, Constable Gamma, related the experience of being selected and inducted into the group. Two follow-up meetings were conducted with the group manager, Detective Senior Sergeant Epsilon, to clarify and confirm information and obtain further insights. The CIB training instructor, Detective Sergeant Tau, because of his many years of service as both investigator and trainer of investigators, was interviewed both at the beginning of the project and at the end to critique the information gathered.

Comments from a long-serving senior detective at Police National Headquarters Criminal Investigation section (henceforth called Theta) have also been interpolated in the next three chapters. Finally, it must be acknowledged that my own information stored from many years of police involvement has also adumbrated the understandings reached.

The interviews, discussions and observations took place over a six month period during which the operations group managed a heavy workload.

Because of the confidentiality agreement signed with the police, the interviewees were not named, but randomly given a Greek letter designation. Where appropriate, their actual words have been used, to add to the content of their discourse a tang of their personalities and style of communication.

The interviews were transcribed and the participants given the opportunity to add further comment or clarification if required.

My first task was to analyse material about their use of knowledge management systems. I scanned each transcript for both facts and subjective comment on systems; I next reconciled the data, looking for common themes, and checked it against the information from National Headquarters sources on the systems being provided. The summary on page 227 reveals the findings from this part of the analysis.

Next I turned to the specific incident each had chosen, looking in detail at the decisions involved through the lens of my living Investigative Entity model. I looked for subtext, clues as to how they perceived the world and were influenced by it, and revelatory metaphor, and reconciled what they said with their inflections and the body language clues I had noted. In particular I looked for examples of abductive thinking and differences in how each approached the interrogative interface with the architecture of knowledge. The results from this analysis are summarised on page 247.

The next task was to analyse how the members of the group worked together, looking for the factors isolated as crucial to effective investigative teamwork, again by looking for instances from each individual and then cross-checking them with the other answers. This outcome of this work is summarised on page 275.

Specific attention was paid to aspects of the abductive process relating to the verification of material obtained at the interface of the architecture of knowledge, using this as an additional tool for analysis. Conclusions from this are laid out in Chapter Eleven.

8.3 The interviews

8.3.1 The Area Commander, Inspector Kappa

Inspector Kappa is a university graduate and a veteran of many years' service, all of it spent in this district. In his early days he performed general duties, serving in the

watchhouse, on patrols, in team policing and as an enquiry constable in an outlying station. However, when the Ministry of Transport amalgamated with the police in 1992, he was the first police member transferred to the new section. After rising through the ranks he became Road Policing Manager in 2001, with the rank of Inspector. An interesting time in his career was a year spent relieving as policing development manager, before being appointed Area Commander, Central City, at the beginning of 2009.

In taking up the role he thus had the benefit of knowing the area intimately and of having worked extensively in all the basic duties performed by uniformed police. He also had the confidence that came from working in the close-knit road policing group with its special expertise and good record for efficiency and effectiveness. The year in policing development allowed him to obtain an overview of how policing was currently being performed and consider its future role and practices. A further benefit was that he had previously been selected for a mentoring programme, and had been the protégé of the CEO of Antarctic New Zealand: this had given him the opportunity to discuss management styles and polish his skills.

What he does not have is experience in the CIB. However, he spent two years earlier in his career as a uniformed constable attached to an investigation unit, working on files for such crimes as rape, so he has a working knowledge of CIB tasks and routines. During his years in road policing he became aware that there was a fair amount of antipathy between various branches of the police; he had even heard the canard that the CIB regarded road policing staff as ‘a bunch of monkeys who upset the public, ruin juries and are over-resourced’. For this reason he was initially unsure how he would be viewed, and had some concerns about supervising an investigative unit when he did not technically have expertise in that area.

Six months later, he feels the situation has gone very well. For this he gives credit to his operations group manager:

I am lucky to have Detective Senior Sergeant Epsilon, who is a very competent investigative manager. In terms of investigation, he briefs me on what we need to do and I follow his lead on those things, because he is the expert, and I'm not.

To provide him with the information he needs for his administrative work, he has a formal meeting every morning at 8.15 with all staff who are working. The meeting goes right down to constable level, and there are usually twenty to thirty staff of all ranks in attendance. They discuss events that have happened overnight, and what progress is being made on ongoing investigations. Kappa considers the meeting a briefing both for himself and for all staff.

There is also a specific meeting every week with the manager of the operations group, Detective Senior Sergeant Epsilon, where ongoing operations and tasks are discussed. At this meeting Epsilon reports formally on developments and outlines what he needs.

Kappa has instituted a process learnt from the CEO of Antarctic New Zealand, where he can meet with his group of sixteen reportees once every five weeks; together they review the progress made during the period. They then go through what they call an Agreed Actions Sheet, which covers personal development, major issues they are investigating, risks they are facing, tasks the commander has given and progress against those tasks.

The area command and its subsidiary operations group also partake in a formal risk assessment process for which the whole district has a management brief. Each year they meet to identify the risks they are going to face that year, designate who owns that risk and what they can do in terms of mitigation and control of it. Kappa feels there is a fair bit of misunderstanding among police staff about what a 'risk' is, particularly whether lack of resources is a risk. The participants have to produce a plan and take ownership around that risk. If Kappa is charged with managing one of those risks for the district, he first discusses the brief with his five reportees. With Epsilon he asks, 'What are the risks you are facing at the moment that I need to know about? How are we managing them?' and then Epsilon gives him feedback on those.

As Figures 11 and 12 show (pp 203, 204), the work of the operations group overlaps with the District CIB structure when there is a major crime. There is always an on-

call detective inspector, who initially sets up an investigative framework to deal with that investigation, and may have ownership of it until it is completed. By 'ownership' is meant that it is still being overseen by that Detective Inspector, but the day to day operating is being done by a Detective Senior Sergeant, usually Epsilon.

A major investigation requires resources and money, which must come from the area's budget for investigation, sometimes creating difficulties when finance is tight, and arousing tension in the process.

The area commander is a conduit for information about new policy or changes to existing policy. This worked well for Kappa in road policing, where the area of responsibility was clearly defined; the twelve road policing managers around the country could easily be consulted about changes, and there was some feedback before the policy was promulgated. This process does not seem to be so well organised in his present area, where there are four area commanders and many people from different sections of the police involved. If a policy is coming out, he is not aware of a formal process of gaining consultation or receiving consultation from across the areas: it seems to be very ad hoc. He speaks frankly:

Sometimes a policy arrives and we are all absolutely gobsmacked, and this includes the district commander; we don't know where it's come from, whether anyone was asked, and it's now policy. Sometimes we are consulted to death – they send us a 70-page document and say, 'Give us your feedback on this next week.' As a general rule the area commander will say, 'I haven't got time to look at that', so no feedback goes back and the response is, 'You were asked, and there's the policy'. I don't think that works well.

Once a policy is in place, attempting to move it or change it (unless there is something disastrous) tends to be difficult.

Where information systems are concerned, Kappa feels there is a conflict between what people would call old-style policing and the modern policing. In old-style policing, a policeman was expected to know what was going on, and the knowledge and information that each individual had was what really counted. The problem with

that has always been: if one investigator knows it, how do other investigators get access to that information?

That conflicts with the modern policing, where every piece of information can be loaded into a computer and theoretically be available to all. There are problems with this, too. Kappa comments that the sheer quantity of information available from the police knowledge-management system and libraries can be almost overwhelming; there is also an assumption that staff have the ability to access the right information. When Kappa has an urgent need for information, his own procedure is to ask his staff first if anyone already has the details or knows where to find them in the system:

Policing is a human game: you have to always be able to go to individuals and use individuals' knowledge to keep the right balance.

8.3.2 The Operations Group Manager, Detective Senior Sergeant Epsilon

The next interviewee was the Operations Manager for the selected group, Detective Senior Sergeant Epsilon. DSS Epsilon is a long-time detective based in the Central City area. Considered by his colleagues to be shrewd, efficient and likeable, he is focused on his role as detective.

As shown in the organisational charts, DSS Epsilon serves two masters. He is responsible to the Area Commander by virtue of his position in the hierarchy as a senior sergeant, but overlying that is his responsibility to the CIB; when there is a serious crime, his direct line is to a CIB inspector.

The district CIB itself links into Headquarters and the other CIB structures around New Zealand. Policy relating to investigation gets fed down through to his area for his staff to comply with, but he feels it is a two-way process, as they in turn give feedback to Headquarters on the ramifications and effects of policy directives.

Epsilon has four squads under his aegis, each of which has a detective sergeant as overseer. He feels he has a great deal of autonomy in running the CIB in his central city bailiwick: he can focus on his role of ensuring that any crime that occurs within

the area for which he is responsible gets properly investigated. If there is a homicide, he will normally run the investigation; if a detective inspector from the district CIB comes down to run it, he will act as second in command. However, depending on how the homicide investigation goes, Headquarters in Wellington may send someone to peer-review the process, so there is feedback both ways on serious incidents, making an interlinking between Headquarters and his group on investigative procedures as well as on the implementation of policy.

Cases arrive quickly at his door. His area has direct contact with the uniformed staff, who should automatically call him when investigative services are required. His own staff have a responsibility to listen for radio calls from uniformed staff at incidents, so duty staff can go out to investigate serious incidents.

He attends Kappa's morning meeting for all staff working at the time, which reviews the events over the previous 24 hours, and if that group (and principally DSS Epsilon himself) decides any incident requires CIB investigation, he picks up the limited information available and deals with it.

He describes his procedures :

Often we have a crime car that works at night and we have two detectives and if there is an incident – such as the rape reported last night about 2.30 – they will do the initial investigation and when my early shift arrives at 7 am they will deal with that incident as protocols are put in place. I give them a briefing and make sure the correct approach is being taken and that I have delegated my authority to the guys to deal with what they need to do. We also get outside sources: for example, the hospital emergency department called about a rape case.

He makes the initial decision about a case, such as whether it is serious enough to justify the attention of his investigators or could be dealt with by other means. His next decision is an administrative one – has he staff available to deal with it? There is always a duty detective inspector on call and if there is a very serious incident one will be rung; they will then go to the incident and make an assessment of its seriousness and the number of staff they will need to handle the immediate tasks. An investigation can go on for months and the normal workload has to be dealt with

as well. Epsilon has to set priorities and negotiate for funds and resources with the area commander, who is the gatekeeper of finances. Although there is close liaison between the area commander and the officer in charge of a particular investigation and they will both talk about the prioritisation of the expenses involved, above them there is a financial controller, who will ultimately say, 'We have no more money left'.

Epsilon finds this planning, organising and negotiation a very congenial task; his staff are well-pleased with his knack for it. So are his superiors at Police Headquarters – during the survey period he was seconded to another district for several months. During this time one much-publicised case brought him to international notice.

His need of knowledge-management systems is based on the initial decisions he must make. His first priority is to get a briefing on what is known about the incident; then his brain races as he makes an assessment of what the incident is about, what level of complexity it may entail, what tasks are appropriate and what staffing may be needed. It is the epitome of the process described by Smith and Flanagan (2000) as the creation of 'slow time'. In terms of the Investigative Entity model, his task is not only in the initial scoping of the incident itself, using his own detective skills, but at the level where his supervisory responsibilities require that constraints and opportunities must more closely be identified.

He thinks he takes an extremely practical approach, based on his long experience, inculcated routines and attention to detail:

Any incident you've got THIS much information – by the end of the first day you may have THIS bit of information: by the end of the investigation you hope that you have got sufficient evidence to prove a charge, so when you first go through a briefing you think, what have we urgently got to do? How are we going to do it with the staff we've got? Where are we going to go for the extra staff to handle things?

As the extra staff arrive to join the investigative team on a case they are given a full briefing. Team meetings and briefings are a standard part of investigation procedures

throughout the world (Smith & Flanagan, 2000; Weston & Wells, 1990, among others). Epsilon feels these meetings have the potential to offer new insights on the direction of the case through the questions asked by the new arrivals and the lateral thoughts sparked by the elucidation process. There will be a fruitful period as the team is expanded and existing members rejig their positions, perhaps allowing some to make a more intense focus on specific areas, or merely offering the team more hands to the plough to cope with mundane tasks. This is very much the productive communication, and encouragement of intuitive insights, that are the hallmarks of a community of practice.

If the case is serious, Epsilon runs daily briefings which all staff are required to attend, and where people are encouraged to talk through what they have done in a clear and concise way. He feels he gains from these meetings a great deal of information about the progress of a case and the way his investigators are performing.

While the computer knowledge-management applications are in constant use, he feels they are only as good as the questions asked of them and what has previously gone into the file. He is also concerned when he sees police officers of massive experience sitting for long hours at a computer keyboard, when much more effectively they could be using dictaphones or a staff typist for briefs and correspondence. He feels staff should be out actively looking for the information they need.

His personal management of knowledge reflects long experience, dating from a time when computer systems were less freely available:

For every investigation I run a 'hard notebook'. That hard notebook has brief notes of what documents I've read, points that have been made or whatever and you have the ability to later research and track exactly what that means and I've manipulated that into the structure of the way I do investigations.

He feels a good investigator has to have an enquiring mind, the ability to talk to people at different levels, to look at things analytically and have the ‘tenacity to think out of the square’.

There’s no way of replicating a human’s mind... we all have our different abilities and the good part of my role is that I get the chance to smell what comes off the potpourri and hopefully put that smell with the right person who is potentially going to get something that is advantageous to my investigation. The National Intelligence Applications system has great abilities, but someone has to ask that question that is going to drag it through.

He copes with the uncertain nature of much of the information given to his staff by putting structures in place and building confidence so that if somebody sees or hears something, they can bring it to his attention without feeling uncomfortable.

There is also the new certainty provided by enhanced forensics, DNA testing, for example. Epsilon offers a wry comment:

It’s unfortunately too much of a confirmation now; it’s almost the case that if you haven’t got [DNA evidence], you haven’t got a justification for running a case, but there again, I suppose that’s what this business is all about – building the provable case.

He works on policing development within his area. Usually new issues, which may arise from perceptions of changes in New Zealand society that may impact on the New Zealand police, or from overseas trends in policing, are researched by the policy development group, which designs new policy if necessary, but Epsilon will be concerned at the practical level with how to bring in the new strategies or changes in procedures, such as the management of the watchhouse or in team policing. For example, a current development is the use of tasers by front-line police; the ethics and procedures for using such a weapon will have been widely discussed, but Epsilon will have to ensure his own staff have been skilfully trained and are aware of the implications for use of the taser.

Some policy developments have serious ramifications for Epsilon's group. He gives a recent example: the modification and amendment of the Summary Proceedings Act. As he reports:

What happened was that the new Summary Proceedings Act appeared on everybody's doorstep out of nowhere. In the event that someone is arrested on an indictable matter, and he elects to plead not guilty and go for a trial, then the police officer who has arrested him has 42 days – not working days, but 42 days – to get the file completely briefed, prepared, checked and presented at the court. The realisation that the guys have suddenly got to compress all of their work into this short time frame, taking into account days off, other enquiries they may get dragged away on, is going to have huge ramifications for us. It's an interesting environment. We sit back and say to ourselves, what relationship did practical policing have to Headquarters involvement in agreeing to this 42 days timeframe?

It is a question that was raised by almost every investigator interviewed.

8.3.3 The Detective Sergeant, Detective Sergeant Lambda

Lambda is a young, enthusiastic investigator who has been twenty months in his present supervisory role as one of four detective sergeants reporting to Epsilon.

His career as a detective began early when he was assigned as a young constable to a homicide investigation, and because of the intricacies of the case, stayed for a full year as one of four core staff. This posting had huge benefits for him:

I stayed on that homicide for the whole time, whereas other people came and went. I got to know all the detectives, not just from my home station. There were a whole group from [a big city], so I actually felt more at home in that environment after a few months than most of the other people, because the homicide was where all the resources were being put into and obviously I was in the core part of it.

At the end of the investigation, which he had thoroughly enjoyed, he was assigned a place on a detective induction course and transferred eventually to his present location.

Under his control are two constables and four detectives: two experienced and two at various stages of training. His group works independently on its own workload, but can call on resources from the other groups from time to time for big jobs. His policy in the early initial stages of an investigation is for his group to try to crack out as much initial work as fast as they can.

In his work he uses all four sources of information, from people, scenes and exhibits, systems and from his own experience and understanding, and he believes the secret of success is the skilled interweaving of information from many sources. He adds a word of caution about relying on information from people:

People have either not taken much notice because they haven't realised the offence is happening, or they are under the hammer: they do know the offence is happening, and their hearts race so they don't take in anything. So you've got a huge amount of human error when you're relying on witnesses.

He appreciates the improvement over the years in the computer systems such as the National Intelligence Application, but remarks on the amount of repetition of information that still goes on in the Police, and the apparent continuing need for paper-based systems. Like Epsilon, he prefers staff to use a dictaphone and spend their time out on the street rather than sit at a computer to input information; he urges them also to compile a 'little black book' of people in departments and agencies to contact for information.

He has found that most of the information he receives from computer systems is accurate. He sometimes wishes it were more complete, but accepts that there are time and resource constraints which affect why other staff do not enter all they know.

The most recently updated knowledge-management system in the city available to him is the closed-circuit surveillance camera system, which, like the information on the computer systems, relies on the skill and diligence of those doing the inputting of data.

8.3.4 Detectives Alpha and Delta

In the group are two very experienced investigators, Detectives Alpha and Delta.

Detective Alpha is astute, energetic, full of zest for the job, and highly trusted by his immediate superior. He spent over five years in the police doing general and traffic duties and then realised that his niche was in investigating serious crime. He was on uniformed attachment to the CIB for two years and then decided to do an induction course and become a detective.

He completed five probationary modules and his selection was endorsed by his supervisors at the time. He was put onto a General Crime squad in Central City Investigations and went onto his first six-months' rotation as a constable-on-trial.

As part of the squad he deals with serious crime issues that come through from day to day, such as sexual violations, sexual assaults, serious robberies and suspicious deaths. There is a great deal of serious crime in this city.

Detective Alpha considers he has considerable autonomy in handling these incidents. He enjoys the freedom he is given to work through a case, especially if he is the sole detective dealing with it; he is confident that if there should be an issue with work or some advice is wanted, his immediate supervisor is generally available for assistance.

His experiences with the police knowledge-management systems have mostly been favourable. Some files may take two or three days to come through to him: his first check is to see that the obvious details have been covered, as this should never be assumed. He finds the National Intelligence Analysis a very good tool, which he uses a lot, as he finds that the Intel staff are good at loading information, but he points out that this application is only as good as the information put into it, which comes from detectives and constables out in the street. Even an innocuous noting of a turnover from a traffic unit on the street may yield useful details to help build a case. Because of this he is diligent in updating his own occurrences so that the latest information is there for others to use.

He has views on the introduction of new systems:

I've been in the police for twelve years now and the most advantageous thing is the introduction of email. I've found with technology that although you can do things faster, and can do more, and can keep more things, it doesn't mean you have more time. The workload increases to cope.

There have been few problems for him: he has his own computer when in his office and the helpdesk gives good service when there are issues with systems. However, there is still an issue of access to COMMS (the Central Communication System) when out in the field, because checks cannot be made if there is no-one available on the radio – a terminal in every car enabling investigators to do their own checks would be ideal. New technology such as recording offenders on DVDs (Digital Video/ Versatile Disk) has led to frustrating delays on occasion, since an application has to be made through a supervisor to get the system installed on a hard drive.

For detective Alpha, working in a team environment but having a specific role to play is highly satisfactory. Often if a big job comes in he will be left as the file holder and manager, which means he takes the case through to the trial process, a procedure which is quite involved.

His colleague, Detective Delta, is equally passionate about the job. Thoughtful, sincere and an excellent communicator, he considers his opting for investigation of serious crime was a logical step in his career, though he was surprised at how quickly he was selected, once he had shown an interest.

Investigator Delta considers that the CIB is best suited to someone with a practical, methodical approach, and that the key to successful acceptance in the investigative group is not so much having a 'face that fits', as in having the right attitude to the team's tasks. Attention to detail is important, as is the need to be thorough, whether processing a crime scene or preparing a prosecution file. The squad he is on at the moment both responds to crimes in progress and tackles 'historic' offences; if anything comes in during the shift – it could be a robbery, a sex offence, a serious assault – they will respond to that. They catch enquiry files from section staff (and

that can be anything from reasonably serious thefts and burglaries to assaults and domestic matters) and they follow it through, doing all the investigative work and the enquiries to the evidential stage where the case can be prosecuted in court.

Investigator Delta makes a point about the nature of serious crime investigation:

There is a lot of office work within the CIB. A lot of time is spent gathering intelligence/ information, interviewing complainants, witnesses and suspects, etc, prior to an offender being charged. Similarly, after arrest a lot of work goes into preparing a file for court. There is very little time out on the street, compared to General Duties Branch.

The last comment may reflect only a personal preference for fresh air and a changing scene: the actual locale for the necessary gathering of information, the construction of the narrative of how the criminal incident unrolled, the abductive thought and the decision making required does not affect the handling of the incident according to the Investigative Entity model.

Like Investigator Alpha, Delta enjoys his high level of autonomy, though he considers the option for close supervision is there if it is needed. Because of the nature of routine work and the degree of independence accorded to the qualified staff, there is not a regular pattern of team meetings. However, when there is a 'big thing' the group meets at the beginning to establish what needs to be done and which member will attend to each task; on a homicide case there will be a briefing every morning to get everyone up to speed with what has happened over the course of the preceding day.

When advice or instruction is needed, staff go through their immediate supervisors, who deal with the matter themselves where possible. Detective Delta feels that the next level up has an overall view of what is going on, but tends to keep out of day-to-day matters.

A skilful communicator, he is comfortable with the knowledge-management systems provided, especially the National Intelligence Applications system, which he uses all the time. He finds this basic tool of his trade well-designed for his purposes and

rather regularly updated. To keep abreast of less structured, more local information he makes particular use of the intranet and the 'bullyboard'. This is a computerised district noticeboard, where information can be posted or requests made for help with enquiries, and is a useful first port of call when starting an enquiry. Typical bullyboard postings will ask for sightings of cars that have been stolen, addresses where offenders may possibly be living, known associates of people arrested – the nuts and bolts of police information.

Overall, Delta feels there are enough police systems and information for the job detectives have to do, and if they keep up to date with systems they can source material for themselves. His main concern is that information is not always input into the system fully or speedily enough.

It's never going to be perfect, but where we do fall down is whether the likes of us investigators should have laptops to take out to an interview – it's not so much the knowledge management, but the resources.

An occasional cause of frustration is that there needs to be easier access to general information from outside the system:

Telecommunication systems are the obvious one, where you have to get a search warrant for things where in some cases you should just be able to obtain that information. You are trying to serve a purpose and often you have to jump through hoops to achieve it.

This is not the result of police policy or procedures, but of legislation such as the Privacy Act; while Detective Delta accepts that there has to be a measure of control so that access to outside information is not abused, constraints can sometimes hinder a successful result on a case.

Like his colleague Alpha he is concerned that a lot of good information fails to find its way onto the computer because staff are too busy, the material does not relate to their present case and there is no procedural requirement to share it.

He points out that in spite of the fact that New Zealand police knowledge-management systems are computer-based, there is still a strong tendency among staff

to use paper-based records, even to the extent of making four copies of every single document when there is a homicide case.

8.3.5 The probationer, Constable Gamma

The newest member of the team has just been appointed and is undergoing a probationary period. Coming from an army background and a solid period of duty in the general duties branch of the police, he is eager to learn and even more dedicated to doing the job exactly right.

His understanding of the routines he has followed in his first week is that the files come in and are sent to the detective senior sergeant on duty; he assesses which files will be handled and which won't be, then he assigns them to the detective sergeant, who in turn assigns them to one of the seven members who comprise the squad.

While on probation Constable Gamma does the same tasks as everyone else on the squad. So far this probationer has been handed five files, some for individual consideration and some as part of a team effort. His plan of attack is based on his previous work with the general duties branch:

When you get a file, you need to review it, to go through and find out what initial action has been done by the guys who initially attended, and look at the job sheet to see what has been done and what needs to be done, and then it's basically coming up with a plan of attack and evaluating how you are going to go about investigating what needs to be done further to follow up the enquiry.

He also has to study and pass five training modules during his probationary period. He has not yet been assigned a mentor as the sergeant to whom he reports is on leave, but he finds the more experienced members of the squad only too happy to help.

His attitude is positive:

During the probationary period you do the same as everybody else, basically investigative work, so you just get stuck in, I suppose, and ask lots of questions.

He observes wryly that while each investigator is expected to work autonomously, the police basically runs on systems; there is a system provided for everything, with proper procedures to follow.

Much of his initial information about the incidents he handles comes from the police communication centre, which he finds good in general. He makes the point that the communication centres are only as good as the information they get from police constables and the public: there are occasions when the information is wrong and sometimes there can be a delay in getting information. He feels this could be overcome by having interface terminals in police cars so that a lot of work could be taken away from the communications centre in the city. Investigators would have a lot of information at their fingertips, and by recording details at the time of the incident their accuracy might be improved. He deals with delayed information by asking his team if they have any knowledge of the matter to share.

On the positive side, he finds the system well-maintained and the software constantly being updated.

8.3.6 The training officer, Detective Sergeant Tau

The training officer, Detective Sergeant Tau, was invited to participate in the research because, apart from his role as trainer to the operations group, he has impeccable detective credentials. He, along with three siblings, is the fourth generation of his family to serve as an investigator in the New Zealand Police: the family members have a tradition of service both as investigators and as trainers and mentors to others. Tau himself has served over thirty years as a detective, supervisor and trainer, and his explicit and tacit knowledge of the detective task is phenomenal.

He was approached directly by the Crime Services Manager and asked if he would take on the training role and in particular, mentor younger detectives. His long experience, warm personality and enthusiasm for training make him ideal for the job.

The training he carries out consists of mandatory courses, discretionary courses, tutoring CIB trainees, organising examinations, and a great deal of mentoring.

The mandatory courses emanate from the Police College at Porirua and from National Police Headquarters, and cover such areas as first-aid certificates, firearms training, handcuff and baton training, which must be undertaken by all members. The policy covering these is designed at National Headquarters: usually a consultation process takes place about what need there is for courses, though the consultation does not always go down to the practitioner level. As Tau says,

With over 10,000 people in the Police you can't ask for feedback from everyone, so they go to subject matter experts. We have to do evaluation sheets on people who do the training and then do a summary of it and send it back, but this may not be the case in normal run-of-the-mill stuff like fire-arms training, and 'pass or not' courses.

The discretionary training is based on perceived needs. There is a district training committee for the region, consisting of the Human Relations Manager and the area commanders, which meets to look at the mandatory training needs for the year and discuss the discretionary training they would like to see carried out. This might be crime-scene training for staff or basic investigator training, which Tau then plots into his training programme. He is also a Moderator of Training; he makes sure programmes run well, and qualifies the assessors to ensure assessment is done properly. In this region, there is a great deal of training going on.

Tau also plays a key role in national training. Nation-wide there are investigators appointed to monitor CIB training: a Detective Senior Sergeant and two Detective Sergeants in Auckland, who cover six districts for Auckland and Northland; a Detective Senior Sergeant and Detective Sergeant in Wellington to cover the Central District and Wellington, and a Detective Sergeant to cover the whole of the South

Island. These appointees work closely together on any training. There are two national CIB trainers' conferences a year to make decisions about any changes needed to training programmes or materials; they have regular email contact and telephone to keep everyone aware of anything coming up in the training area. Tau comments, when talking about my criteria for an investigative team, 'In the training area we certainly work as community of practice.'

He is pleased with the knowledge management systems now available to him. He has his training material, CIB modules, resource materials and manuals on hand. He likes to be able to communicate different ideas on the national bullyboard or district notice board, feeling that a lot of knowledge gets disseminated that way, and intelligence (in the police sense of the word) gets passed on.

For his training purposes the systems are very easy to use, fast and accessible, a vast improvement on the systems in his early years as a detective. The material goes through a checking process; for example, the CIB modules are checked for accuracy by experienced investigators like him and subject matter specialists before they are put on the web. His enthusiasm stretches beyond the training area of the systems:

In general, police knowledge-management systems, particularly computer-based things, are just outstanding. The things we now have available to us like business objects- there's a whole system on that, being able to get statistical data, file data and Intel systems much better. There is a new national Intel centre which is driving how we deal with our intelligence and information on criminals; there are a lot better ways of doing things nowadays.

Throughout the interviews members acknowledged the information on the police computer knowledge-management system depended on the quality of the input: it needed to be accurate, full enough, and up-to-date. While there was respect for the professionalism of the Intel team in managing the systems, there was a noticeable unease about whether all ordinary police members were assiduous in their input of information, and a determination by the members interviewed to be as careful about their own input as they could. They expressed some surprise at the amount of

duplication of effort and the survival of many paper-based procedures. The most commonly expressed wish was for individual access to the system when away from the office, preferably by laptop and interface terminals in police cars.

8.4 Summary

The material obtained from this first part of the study highlighted certain aspects of the Investigative Entity model.

The first point was the centrality of the investigator. These members seemed to have a high degree of self-awareness and were encouraged by supervisors to use their particular strengths to develop an individual investigative style, though all emphasised the primacy of thoroughness and attention to procedures in achieving successful outcomes in court. All were working within the constraints of public expectations, police policy, human rights legislation and media attention by meticulous observation of the letter of the law and an understanding of human nature. There was no neglect of the requirements for ensuring that a case for court was completely and correctly prepared, but there was sometimes a joyous flash of imagination as to how the initial information might be obtained. This abductive insight underlay much of their accounts of their work, and was later evinced in the incidents they chose to relate.

The second was the importance of teamwork. The people interviewed felt that the Operations Group ran smoothly as a result of good supervision and a cooperative working atmosphere. The division of tasks was perceived to be fair; the energy and enthusiasm level of members was high – indeed, the staff were regretful that they did not have time to investigate all they would wish. While all enjoyed being part of a team, investigators cherished their independence and the trust reposed in them; each felt energised by the rush of ideas spurred by the initial investigative process when a new incident was reported.

The third point was the use they made of knowledge for decision making at the very heart of the model, the interrogative interface with the architecture of knowledge. Their teamwork exemplified the process of sharing explicit and tacit information;

when questioned, respondents put emphasis on people's own existing knowledge – their special communication skills and ability to find and manipulate information; their skill in using procedures; their use of their previous experiences and their reflections on them to suggest fruitful lines to follow. While they had access to Police-provided knowledge-management systems which were on the whole satisfactory, these were seen as a second line of approach to face-to-face observation and enquiry.

What seemed clear when looking at the work of the group through the lens of the Investigative Entity model was the need for the policy makers to take the same viewpoint when planning knowledge-management systems: to focus on the individual strengths of the investigators, the nature of their teamwork, the constraints they face, so that systems provide them with tools for intuition which can be used with flexibility.

The centrality of the investigator, the importance of teamwork and the need for knowledge underlying the Investigative Entity model having been foreshadowed in analysis of the first part of the interviewing process, the next stage was to examine the accounts of incidents chosen by the interviewees.

Chapter Nine

The model in practice: some individual approaches to the investigative task

Overview

While, in terms of the Investigative Entity model, when considering the factors and examining the different courses open, there is a focus on the interrogative questions asked of oneself, objects, people and system –What? Where? How? Who? When? Which? Why? – the action following the initial entertainment of ideas may often be idiosyncratic, imaginative or strongly reflective of the interrogator’s background, experiences and predilections, as explicated in pages 73-75. The examples following offer a small insight into the individual investigators in the group. It should be noted that although several cases or incidents may have been referred to by participants during intensive interviews, the cases chosen for in-depth analysis were ones which the interviewees felt best represented both the task of investigation in general and their individual ways of tackling it. They are presented in reverse order of the investigator’s seniority.

For the reader’s information, Section 9.1 is included to show the slant given to the investigative process in foundation detective training.

9.1 Police procedure when investigating incidents

In the very first training module for would-be investigators, Royal New Zealand Police College trainers lay an emphasis on decision making, as follows:

An investigator’s work involves making decisions and solving problems.

Good decision making involves a search for the best path to a desired goal.

Good decisions are not a matter of guesswork, but logical reasoning.

(CIB001, 2003)

They also consider that the person making the decision should have knowledge (of the applicable law, the correct procedures, the situation, etc), authority, judgement and initiative.

There are five clear objectives of any criminal investigation: to establish:

1. that an offence has been committed, and if so, what offence;
2. how the offence was committed;
3. who committed the offence;
4. the evidence to prove a charge against the offender; and
5. the offender's whereabouts.

Training material and the Manual of Best Practice lay out productive procedural paths to take in the initial investigative process. The purpose is to ensure that the work done is comprehensive and thorough, and that due attention has been paid to legal requirements. Currently a process which the trainers call an 'appreciation' is taught:

1. fix a firm aim or objective;
2. study all the factors involved exhaustively;
3. consider the different courses open and select the one that is the best and most appropriate in the circumstances; and
4. make a plan to implement the chosen course; plans should be clear, definite, practical and written down.

9.2 The individual experiences

9.2.1 Gamma's incident

Gamma's incident, which involves a car accident he attended while he was in the Uniformed Branch, stands out in his mind for several reasons. The first is the very long time and the many twists and turns an apparently simple case took. In attending the incident he had anticipated that his role in the initial stages would be routine and quickly handled or handed over, but because of legal complications it dragged out for nearly two and a half years before reaching a conclusion, requiring his long-term involvement.

The second reason was more complicated: the offender involved was an ex-member of police and determined to be litigious; there may have been old scores to settle of which the attending constable was quite unaware.

The third reason made the incident most memorable to Gamma: he had strong intuitions during the initial approach to the incident that went counter to his perceptions of himself as hardened by years in the military and focused on following procedures perfectly, rather than being open to feelings and hunches.

The incident began with an accident on a state highway. Gamma was in a small town at the time when a report came in of a five-car minor nose-to-tail crash. In the local police district they have a Serious Crash Unit that attends major accidents to investigate physical evidence and assess the scene, but since the gravity of the accident was not immediately conveyed to the dispatcher, a uniformed branch member was first called for. Although it was not necessarily Gamma who should respond to the call, he felt strongly that he should get to this scene:

I had a feeling that there was something not quite right.

Here is an instance of Peirce's statement that it is possible to make an abduction from a single fact (p 110).

He had initially envisaged perhaps helping by freezing the locus so that any evidence could be preserved, getting witness details, and ensuring the safety and security of the scene. As he listened on the way to radioed details of how the situation was unfolding, it became apparent how serious it was, and that the offending driver had left the scene.

As Gamma says:

It wasn't that it was traffic-related – I had a feeling on the way that it was going to turn into a prosecution file as soon as I knew the driver had left the scene.

Had it been a minor crash, there were procedures to go through that did not require much thought, but Gamma's instinct told him there was more to this one.

A lot of it (attending crashes) is just going through processes – you know straight away that you are going to need the special crash squad and things like that. As soon as there are fatalities the special crash squad are called

out regardless, but you obviously need to make some decisions and that's based on the information that comes through from the communications centre; it's your experience really that gets you through.

He did not find out until arrival that while no-one had died, a woman had suffered severe head injuries and two occupants of another vehicle were very seriously injured.

While Gamma was attending the scene and helping the victims he became more and more aware how sure his instinct had been that there was more to the case than met the eye. His subsequent involvement in resolving the incident and preparing a court case against the offender proved his instincts were right, and not only because of the severity of the injuries, damage to vehicles and disruption to traffic that had to be attended to. The major problem lay in the character of the offender and the difficulty of communication with him.

Gamma was satisfied with the way the investigation went, no easy matter with an investigator as punctilious as he is, but the ramifications of the trial process disturbed his sense of rightness:

I felt that the defendant himself and his lawyer made a mockery of the system. He sacked his first defence lawyer and got another one, and I felt that the victims didn't get justice at all. I felt the penalty was weak.

Fortunately for his peace of mind, he does not lay blame on himself and his colleagues.

This episode, therefore, began as a routine incident, where the constable had an almost casual acceptance of the need to attend, and a series of simple, engrained procedures to follow, but developed into an incident highly stressing to the investigator:

- first, the fact that the people involved were more seriously injured than he had at first been informed, and he was eventually assisting a squad whose members presumably had both more training about, and experience of this,

than he; such a group may have had working practices, a spirit of camaraderie and care for each other, and ways of relieving the stress of attending such incidents, to which he was not privy

- the fact that the offender was an ex-police member, who would know police procedure as well as the investigator; who would be aware what access there was, and information in, the police knowledge-management systems; who would know, in Investigative Entity Model terms, how the interchange with the architecture of knowledge would be achieved through questioning, and could use this expertise to make the task of the much junior member more harrowing.

Initially the investigator felt only a desire to perform correctly, but then came a dawning realisation that the offender's knowledge of procedure was going to be used to avoid culpability for the injuries. This clash over the ethical aspect would affect his feelings of self-worth upsetting – the investigator had perhaps expected an offender with a background of the police culture to be more accepting of the fact that the correct procedures followed had positively identified him as the culprit; he certainly had not been prepared for the offender to be so litigious. This reflected on his feelings of self-worth (Hull & Levy, 1979; Carver & Scheier, 2003), so that the outcome still rankles.

The quality of the information first given by the communications centre to the attending officer made a considerable difference to the aplomb with which he was travelling towards it: in no way was the potential seriousness able to be conveyed both to and from the dispatcher because the data was not yet there. The dispatcher therefore in essence gave autonomy to any attending constable to assess the situation, make initial decisions on the way to proceed, and give feedback. Then, as more information was received from other sources, it could be radioed to the constable, enabling him to amend his original concept of the incident, and sparking conjecture that may not have arisen so freely if he knew the serious nature of the crash might put procedures in the hands of the Serious Crash unit, rather than his own.

The incident seems to highlight areas of the model relating to the parameters within which the investigator works: the legal, social, ethical and psychological constraints upon the carrying out of routine procedures, and the need for self-confidence and courage in dealing with people under stress.

9.2.2 Alpha's incident

This incident typifies the practised ease with which a detective of long service and good standing handles the episodes brought to his notice.

Alpha was working by himself on a duty weekend when a call came through on the Sunday that there had been an aggravated robbery at a liquor store. Two police members had responded to the call from the liquor store owner, realised the seriousness of the case and called for CIB help. When Alpha arrived, he found there had been another robbery there earlier that day, and his instincts were aroused – it was unusual to have two robberies at the same liquor store on the same day.

When tackling an investigation his procedure is to start thinking about the offenders and where they may be now, who the victims are, whether there are witnesses, and whether the scene has been contaminated. In this case he hastened to examine the footage on the security camera to try to identify and catch the offenders before they would perhaps do it again, which his instincts suggested might happen (and in fact, did the very next day).

By the time he got to the liquor store, two witnesses had been interviewed by the attending group staff members. He cordoned the scene and established that there was no-one physically hurt. Always in his mind is that weapons may be involved: for him, public safety is paramount. At this stage his greatest need for information was for the communication centre to tell him where the offenders now were.

As the culprits had not yet been found, he made the decision that there was no need for Forensic Services to come out right then and there; he locked down the scene until the next day, so he could be sure he was calling out photography and forensics staff to an unchanged scene. Because he had watched the video surveillance tape and knew exactly where the offenders had been and what they had touched, he could go

in there straight away. He put the cordon tape round the areas where he knew the offenders had been, fingerprinted items he knew the offenders had touched, and got good video stills of the offenders so he could put them up on the blackboard and leave them there for anyone to identify them. Satisfied with that, he took the victim back to the station with him for a cognitive interview.

His methods are based on one main question he asks himself:

‘What’s your aim here?’ I suppose my aim in most cases is to have an arrest. Always I’m thinking in terms of an evidential viewpoint; constantly thinking about putting something before the court, the eventual prosecution, so I’m always assessing what people are telling me to see whether or not it is up to a judicial standard and that sort of thing. The first thing I do is make sure the most obvious thing is covered off. You never assume.

He proceeds with this focus through constant interaction with people, objects, systems and reflection on his own experience and understanding of the issues involved.

He checks his initial assumptions by talking to other staff members who are there about what other witnesses have said, looking for corroboration. He checks constantly on what the scene and the exhibits are telling him; what other staff members are telling him; what witnesses are saying – to assess first whether or not a criminal event *has* taken place and trying to establish the ingredients of the offence. Sometimes he finds it quite a grey area whether it is a criminal offence or a civil matter and the complexity makes it difficult to establish criminality.

The initial incident proceeded to a satisfactory conclusion. By the next day Alpha’s hunch that the offenders would return was proved to be true. They did not know that in the meantime, thanks to Alpha’s competence with the police knowledge-management system, every police member in the district had seen the pictures of them taken from the video still, that their fingerprints and modus operandi were safely stored in the computer ready for comparisons, that skilled questioning had elicited from the victim a wealth of detail that would lead to their identification and arrest.

The handling of this incident reveals much about Investigator Alpha. The first characteristic is his thoroughness, the wide range of possibilities he covers in his initial assessment and the speed with which he makes it. He is totally engaged with his investigation.

The second is the clarity of his focus on his ultimate goal, and the overriding question he has chosen to guide his progress, enabling him to make confident decisions about what to do, and what to omit, when planning the process of his investigation. Having satisfied himself that he has not made unwarranted assumptions and that the most obvious points have been covered, he sets forth confidently.

The third is his energetic interaction with others, particularly to gain from them the information and help he needs. For instance, in the chosen incident he began by questioning the group staff members who first got details that there had been a robbery, to get a general outline of what seemed to have happened.

A fourth factor is his adept knowledge and use of the staff available to him. His rationale in this instance for not immediately involving some of the resource staff is reflective of a concern for others and his confidence in his own judgement.

The final element is his competent use of the information systems: because he realises their overall utility, he takes the time to make careful entries of information that may be useful to others, and to overlook minor imperfections.

9.2.3 Delta's incident

Investigator Delta chose an incident that involved a serious assault.

A girl had been attacked by a group of seven or eight females, and all the information Delta had was a bare outline of what had happened and when and where the assault took place.

At this point Delta's chief need was for more information, so he began a cognitive interview with the victim, aimed at obtaining any clue he could get as to the offenders' identity. First he established rapport with the victim, and soon by thoughtful questioning was able to obtain more details and a reasonably good description of what had happened. It is never easy:

Almost invariably you have to coax a description out of somebody, because it's a learned thing and a lay person would say, 'It's a guy, he was tall', and that's very nondescript. I'd say, 'How tall – I'm this tall, in relation to me, how tall was he?' In this case there was some coaxing to be done, but she was pretty good.

Delta now had quite specific clothing details to add to his other information, which was good as a starting point, but he needed a plan of action that would lead to all of the offenders being prosecuted and convicted. It was to prove a lengthy process.

Delta says,

It is always the file holder's responsibility to prepare a plan of inquiry. An investigator should obtain all the information they can and conduct relevant inquiries, with the assistance of other staff as required. Once a thorough plan is prepared, the resulting inquiries should be methodical and to some extent fall into place.

In this case he used his knowledge of the exact location where the victim said she had been assaulted. Delta had an astute idea of where young girls in a group would be likely to go, and he knew that certain stores in that area used security cameras. He went to do some enquiries in the area, tracked down a store that had security footage and found some of the action had been captured on videotape.

The knowledge-management system he next used was the intranet bullyboard. On this an investigator can put out a broad email saying, 'this is what happened, this is the description of offenders, can anybody nominate suspects?' thus tapping into many people's knowledge of what is going on in the community.

In this case the decision to use the bullyboard was really effective. A dozen different police members telephoned or emailed Delta identifying the people displayed; a lot of the nominations were for one offender in particular.

The time and care Delta had put into his questioning of the victim had elicited a vivid description of the offenders. It was to have a useful outcome. Delta takes up the story:

I was down at the District Court and three girls happened to be sitting outside and I thought, they look very much like the description, so I approached them and spoke to them and it went ahead from there. Sure enough, they were three of the offenders. I spoke to them and they all wanted to dob each other in.

Delta's plan to tackle the assault mirrored the methodical approach taken by the other investigators. He took the sketchy information he had and planned how to amplify it, not in the face-to-face discussion with others favoured by Investigator Alpha, but by using his particular strengths – skill at reassuring victims so that they can disgorge needed information; competence with both explicit and tacit information; insight into what the nature of as yet unknown information might be; and fluency in knowing how to get the best out of the police knowledge-management system by providing easily assimilable information on the bullyboard and framing requests for help courteously.

While his plan and his careful actions achieved his goal of a successful prosecution and conviction of all the offenders, he has a warning to offer when discussing the use of questioning.

Police have to be very careful when wording questions so as to not put words in a subject's mouth. Very rarely would a good description be given without Police guiding the subject to some extent. There is a fine line between eliciting information that is in a subject's head, and putting thoughts into their heads.

In terms of the model, his interaction with the architecture of knowledge showed both deftness with the interrogative process and ability to use his social and cultural understandings as an aid to abductive thinking.

9.2.4 Lambda's example

Lambda had a vivid recollection of his first experience in a new role, which he felt reflected well a supervisor's need for knowledge in the initial investigative process.

A homicide had just been notified, and while he was very experienced at working on homicide as a detective, this was the first time he had been called on to act as second in charge (2 I/C) in a major investigation. He says,

I had seen people doing the role, but doing it yourself in getting the system in place and knowing where to go to find out little bits and pieces...I suppose that was a learning curve for me.

He decided to begin by seeing whether there was information available within the system on the role of 2 I/C. His first port of call was the Manual of Best Practice, which he admits he had seldom consulted previously. There he was pleased to find an instruction called 'The Role of 2 I/C', so he had something official on paper as a guide.

In going through the procedures and responsibilities outlined he was also able to draw on his own recollections from a course for 2 I/Cs he had once attended. The information from the course now made sense.

That course was absolutely helpful, because it was practical, based on practical experiences: eg, a homicide happens, you are appointed 2 IC: this is what you are meant to do first, this what you are meant to do second, this is where you need to go for this etc – a course like that is invaluable.

The great advantage of the course was that it was specifically geared to local procedures, since he feels these differ from those of other regions of New Zealand.

His main resource, though, was the officer who had been put in charge of the operation. He decided to use the experience of this O/C, who having been a 2 I/C previously, knew what to do.

To make sure we were on the same wavelength rather than me thinking, 'Oh, this is what I am going to do', and him thinking, 'This is what I am going to do', we got together very early on Day One and sorted out our roles and made sure we were on the same wavelength.

Lambda's example shows his personal skill at efficient gathering of information from people, from systems and from himself to enable useful decision making; it shows also that the Police knowledge-management systems were adequately primed to provide him with practical procedural help in his supervisory role.

9.2.5 Epsilon's example

Regardless of his role as manager of the group, Epsilon is predominantly a master of the investigative process. He recalls his share in a homicide investigation, which took nearly two years of intense police activity before an offender was able to be brought before the court.

The locus was a popular holiday resort, where over two thousand people, mostly young, had gathered to celebrate the New Year. When the celebrations were over, two teenagers were found to be missing.

The combination of unusual factors in this case must have impinged on initial decision making. When anxious parents first notified the police, thinking would be coloured by stereotypical perceptions about the behaviour of teenagers, especially as the teenagers concerned were a somewhat naïve couple enjoying some unaccustomed freedom in a festive atmosphere. Their parents' apprehensions were well-founded, as neither their living bodies nor their corpses have ever been found. It has not, however, prevented the successful identification and prosecution of their alleged murderer, thanks to the painstaking police investigation.

There were difficulties with the locus – a resort in a quiet seaside town deluged with a flood of holidaymakers – so that the usual neighbourhood knowledge of residents and their movements would not be of prime use. As well, the sheer numbers of people attending the party would have affected clues that the terrain might have yielded and added immeasurably to the detritus to be found, analysed and recorded.

The second challenge with the terrain was that the resort was crammed with boats, many of which had been used to transport holidaymakers to the party, and these also needed to be traced and searched.

There were several thousand potential witnesses, but their state of sobriety during the course of the evening's events had to be considered. There had also been a great deal of random movement among the crowd.

Once the sheer size of the task was realised, investigators needed to be called in from all over the country. The case may well have involved the greatest amount of questioning ever encompassed by a New Zealand homicide enquiry. Because of his organising skills Epsilon was sought to run the witness stage.

He describes his approach:

It's up to the person's own abilities and analysis how they get information. At the end of the day I set myself the task of knowing every incident that happened within [the locus] that particular night. We ran the National Intelligence Applications programme over a word file. The example may be someone wearing a blue shirt – I went right through that whole file looking for blue shirts and then tried to figure out that that person was with that person, so what did THAT person see about a man in a blue shirt...so it was time, patience, and challenging the mind, really.

This description of the initial decision he made when given his task sheds an interesting light on what makes him a successful investigator. He is not perturbed by the huge number of witness statements, but has the self-confidence and courage to set himself the colossal task of knowing *every* incident that happened that particular night; he has assessed that the vast amount of time and patience required is worth

expending; in ‘challenging his mind’ he shows both imagination and experience in the choice of his particular anchor (the blue shirt, which was not in itself a clue to the murder), because not only is it an object that triggers in interviewees a specific visual memory that may lead to further visual recollections (a face, other clothing, a tattoo...), but it is one detail that would normally be recorded by any police questioner and thus be widely available to him. Further, he has the ability to use the knowledge-management system as it is intended: to record, structure and disgorge information.

All this is underpinned by his methodical approach to his work and his personal, well-proven knowledge-management system. He records what he has done, notes the questions that have been raised and what documents he has read, and records what he intends to do. He can return to these notes later to do further research and keep track of his progress on his master plan for the investigation. With his personal organisational skills, his competence with police procedures and knowledge-management systems, his experience, intuition and zest for the job, Epsilon is a formidable practitioner.

9.2.6 Kappa’s example

The use of knowledge-management systems for decision making in the initial investigative process applies equally at all levels of the hierarchy, from the detective at an incident to the administrator taking control of an investigation. Kappa, the uniformed commander whose place in the hierarchy now gives him oversight of the Operations Group, relates an incident that occurred four years previously when he was managing the Road Policing Unit.

It was a Friday evening, and Kappa had returned home late after a long day. He was rostered to be the on-call inspector that night, but was beginning to relax watching television at 7.30 pm, when there was a phone call – it was his senior sergeant telling him that a plane had gone missing.

A potential plane crash is a rare event. Police have standard procedures for handling any road crash, in which Kappa was well versed, but there would be complications in the fact that at this stage the plane was only reported missing and its whereabouts

were unknown. The situation had the potential for involving a great many staff and many other safety agencies. Overshadowing any thinking would be the memory of the huge police task undertaken when an Air New Zealand plane went missing, and was later found crashed, in Antarctica nearly twenty years before.

Kappa's first thought was to decide where he should start when planning what the police needed to do to handle the situation. He feels in retrospect that he may not have done that sufficiently at this point, because he was visited by the strongest feeling that the priority was to get out good quality information about what was happening to the many people likely to be involved – the families and friends of potential victims, the wider public and the media – as well as collecting working information for the police and aviation authorities who might have to handle an air accident. The first thing he did, therefore, was call out the police media officer to handle this communication aspect of the operation set-up. After that, he was free to organise a search operation.

While driving to work he made calls to other people, tasking them with jobs that they could start working at while he was on his way. A second decision to be made was whether he needed to go to the airport, or should go straight to the Central Police Station to run the operation; he then needed to find out who was currently running the operation in town until he could get there; this helped him to decide he should go to town.

After that, as he says, he got 'absolutely sucked up' into the running of the operation. Ultimately, through standard investigative procedures involving the police, the air authorities and a massive search, a serious plane crash was discovered.

Successful as the operation was, Kappa is candid in his self-evaluation:

In hindsight, I lost a strategic overview very quickly and I got sucked up into running the nuts-and-bolts of the operation. I should have had in place a bigger structure than I did in fact set up, so when thoughts were going through my mind, I was not running phases of what was a nuts-and-bolts operation rather than getting a broader view of how the operation should have run.

Kappa's incident typifies the kind of thinking and action required of a manager coming fresh to a major incident.

The first aspect is the ability to take the scant information available and piece together a likely scenario for what might have happened. Previous experiences may not be useful, so a measure of abductive insight is called for in the opening stages of planning. The initial picture can then be modified as more information comes to hand.

The second aspect is the judicious assessment of what staff and resources are needed, and from whence they may be obtained. Subsequent to this is their briefing and effective deployment, which means giving them delegated authority both to act independently and to institute effective teamwork, thus freeing the administrator from the need to monitor too closely the nuts and bolts of the operation.

The next is the need for a broad overview of the incident. This means having access to succinct information from people, the scene, knowledge-management systems and himself, and creating time to think about it. This is the stage where a knowledge-management system well stocked with verified and up-to-date information proves its utility.

In Kappa's example, the most imaginative aspect was his decision to concentrate in the beginning upon the need for the widest possible group of people to have access to information about the event. His use of the media officer enabled material to be channelled as it came in.

His narrative is illumined by the honesty and modesty of his self-assessment – here is a man who, though successful in his tackling of a difficult assignment, has carefully made an evaluation of his actions and learnt about his own capabilities.

9.2.7 Tau's example

Rather than give one specific example, Tau chose to talk also about the peripheral area where the explicit standard procedures drilled into investigators meet the

Unknown domain of the architecture of knowledge – occasions when the need arises for abductive thought and innovative solutions. He is a profound believer in intuition and in constructive communication with others.

The first example concerned an occasion when covert surveillance of a suspect was needed. The rules covering these electronic operations are very specific indeed. The legal requirements and the ethics of the situation are firmly laid out, who is to be involved, what permissions are needed, how the procedure is to be followed through, who is to monitor it – there is no room for variation or specious interpretation to meet the needs of the investigator. Because the gear is so liable to be discovered, or the evidence from it to be rendered ineffectual in court because of a legal technicality, members of the surveillance team need to keep a careful eye on proceedings, and on each other.

Imagine what consternation can be caused when the suspect arrives home during the installation of the mechanics... Any incident where this has happened becomes part of Police lore, and from the narrating and fretting about it often arise innovative ideas for handling similar crises and elegant ‘cover stories’ to try out on the suspects. What has transpired as one person’s ingenious coping with the situation, arising out of his self-confidence, experience, tacit knowledge and creativity, can become an explicit knowledge resource for the whole group. Similarly, a classic disaster can spawn musement by the unlucky investigator and others that will lead to the devising of new methods, codes of communication, rules and synergies. This how a community of practice shares, shapes and uses the information and experiences it has.

Tau’s second example reflected Peirce’s premise that abduction may arise out of a single fact. Tau’s only information about an incident to which he was called was that there was a body on a certain beach. Here is an incident where the investigation procedure is standard and well-practised, with the first major decision being to examine the body and the circumstances surrounding it and determine if possible whether the death is natural, accidental, manslaughter or homicide: any attending detective would be ready for going through this and deciding whether it was a case for police intervention or could be left to other agencies. Tau, however, on hearing

the name of the beach, intuited that there were likely to be difficulties because of the nature of the terrain and took a team of three other members.

His instinct was right – the body was not actually on the sand, but on a rough pathway down a very steep cliff. The second factor influencing his choices was that at the base of the cliff was an area of sand where two hundred teenagers were having a beach party. It could have been a logistical nightmare. The partygoers needed to be transported to where there was light and facilities for taking their evidence, but where might a bus be obtained at 2 am, and how were they to be persuaded to go? How was the scene to be kept free from contamination if the only egress was the cliff path?

Tau felt that the essential first task was to get the cooperation of the partygoers, which the experienced team managed by the use of personal communication skills, tact and discretion: the successful outcome of the incident flowed from that.

His feeling is that intuition and a feeling for people are powerful tools; an investigator must always be ready for the unexpected and be confident enough to experiment with innovative solutions to problems. To have the confidence to do this, there must be a working atmosphere of respect and trust, where the investigators believe that colleagues and supervisors will not denounce them if they make well-intentioned mistakes.

9.3 The skills considered

All the incidents related evince the courage of the investigators, from Gamma facing a cunning and hostile offender, to Epsilon tackling the evidence of two thousand witnesses. This courage lies at the heart of the Investigative Entity model, where it is seen as the force that enables the investigator to cope with difficult and often unsavoury tasks. Coupled with this is their total engagement in the job they are doing, depicted in the model as ‘motivation’.

The second quality shown is their self-confidence with procedures, reflecting their training and experiences, bolstered by regular positive evaluation and performance

assessment by superiors and colleagues. They evinced awareness of the social, cultural and political milieu within which they work. Each has a real awareness of the aim of his efforts – to present a seamless, forensically sound case in court. They are methodical, thorough, law-abiding and energetic in pursuing the information they need.

They have good communication skills: they can build rapport and elicit details from the people they deal with. Their primary interface with the architecture of knowledge is their adroit use of questioning – of people, of scenes and exhibits, of systems, and of their own experiences. While familiar with the police knowledge-management systems provided for them, they are conscious of the limitations of the people who put (or fail to put) information into them, and perhaps are not wholly trusting that all they need to know has been recorded and verified. All appreciate the efforts being made by Intel and the Corporate Instruments team to provide useful systems for investigators, and all would be interested in providing feedback and evaluation to system designers and purchasers if time and the opportunity were available.

Above all, though they have different ideas on whence it arises, they share a faith in intuition as a powerful tool in the detective's repertoire and advocate the need for musement and 'thinking outside the square'.

9.4 Summary

Analysing the narratives recorded from the interviewees produced a plethora of information about their individual styles of tackling incidents and their use of abductive insight. It provided further information on how they communicated with others, worked on teams, used the police knowledge-management systems, and thought about their working environment. A cohesive picture was built up of their skill in penetrating the interface with the architecture of knowledge and verifying and using the knowledge obtained to construct a narrative of events. The material gained provided further answers to the first part of my research question, 'What is the nature of the investigative entity, and how do individual investigators make decisions within it?' The validity of my investigative entity model as a living entity was confirmed.

The points established from the narratives could now be merged with the points garnered from the rest of the interviews and observations to address more fully the second part of my research question, ‘What is the nature of teamwork within the investigative entity?’ There was now sufficient information from observation and interviews to use the criteria established in Chapter Six to assess the way in which the Operations Group operates as an investigative team within the investigative entity.

Chapter Ten

The Operations Group as an investigative team

Overview

At the end of Chapter Six, ten criteria were outlined by which to judge the nature of an investigative team. In this section the City Operations Group is measured against these criteria, using material gathered from observation and interviews with members of the group, their colleagues, their superiors, and Police Headquarters policy makers.

As some participants were familiar with the terms ‘profession’ and ‘community of purpose’ when talking of teamwork, but might not have heard the expression ‘community of practice’, participants were given the following brief explanation prior to the interview:

A community of practice is a group of individuals working together in an area and enjoying an accord based on mutual competence, independence, openness and respect. Members do not have to be in the same location, at the same level of the hierarchy or perhaps even in the same organisation.

10.1 The elements of investigative teamwork

10.1.1 *There is a professional approach, based on ethics, marked by competence, and recognised by others*

10.1.1.1 ‘A professional approach’

As Chapter Six outlines, the framework for an investigator’s professional approach is having followed a systematic training programme, achieved competence through early monitored practice, and later satisfactorily performed duties within firm procedural and ethical guidelines. The New Zealand Police’s definition of a professional approach (New Zealand Police, 2008) appears to follow closely this generic description.

Elements of professionalism that must especially be confirmed if the group is to be deemed to have a ‘professional approach’ are: further selectivity of entry within an

already selective organisation; a deeper understanding, perhaps a philosophy, of investigation; autonomy; and collegiality.

Selectivity

Just as entry into most professions has an element of exclusivity, there is no direct or easy entry to the detective branch of the New Zealand Police. Candidates must have had full training as a Uniformed Branch member, received a permanent appointment and successfully performed their duties for several years. They have therefore already been investigating for some length of service, many times taking a case from initiation to its conclusion in court. During this service they will have been the subject of much assessment, both the regular performance ratings linked to the Police pay and promotion system, and the informal but highly important evaluation of their qualities by colleagues.

Entry starts through the candidate's own volition: there is neither compulsion nor 'shoulder-tapping'. Uniformed branch staff then have an opportunity to do a rotation as a 'uniform attachment' to a CIB squad, which gives an introduction to what specialist detective work is like and helps to confirm or challenge their desire to undertake it.

If the candidate is still keen, the attachment is followed by undertaking five training modules within six months. The modules are mostly rote-type learning about legislation or case law or procedures. Next, before the candidate can formally attend an induction course, he needs to put in an expression of interest that goes through to the detective inspector. It is accompanied by recommendations from supervisors, colleagues and the training sergeant. The candidate meets with the detective inspector and a couple of detective senior sergeants to assess his suitability to be a member of the CIB, and then, if approved, attends a month-long induction course at the Royal New Zealand Police College. This is both a selection and induction course aimed at assessing the candidate's suitability for an investigative career.

The candidate returns to the district, then undertakes a 2 ½ year training programme to become a detective. During this time he has to serve six months as a constable on

trial at CIB, during which time he has to be well reported on by supervisors. There are another four CIB module exams (harder than previously) before the trainee can apply for Detective Constable designation, which comes with a pay rise and allowances. This is followed by another 24 months as Detective Constable, during which he has to study and pass a further six modules. At the end there is a 3-hour pre-requisite examination which covers the whole curriculum from the start of the induction course. The Royal New Zealand Police College has always insisted on a pass mark of more than 60% in its tests and examinations (Gordon, 1994), but the pass mark for CIB modules is set at 80%, reflecting the concern of policy-makers that investigators be exceedingly well versed in their trade. It is, of course, also a measure to secure exclusivity.

During the 2½ years of training the testing and examination process is supplemented by a workplace assessment programme, providing further information to supervisors on the skills and suitability of the applicant. There are pre-requisites which have to be completed before the trainee goes back to the Police College for a three-week Detective Qualifying course. After passing the assignments on that course the trainee at last gets the designation of detective, which involves a pay increase and some allowances. However, the designation only remains while the detective is in the CIB – both the designation and the allowances are lost if the member returns to general duties, which is sometimes necessary for ambitious sleuths wishing to ascend the ranks, as there are many more opportunities for promotion in the uniformed branch.

This is also a problem at entry level to the CIB. After the induction course the hopeful investigator may have to wait for a vacancy in the CIB before obtaining a permanent position as a detective. And then, as Probationer Gamma puts it,

That's when your training really starts.

As in most professions, therefore, the candidates for the Criminal Investigation Branch pass through a number of steps and are qualified by examination before being selected to become practitioners. In essence, this pathway to detective work has not changed in the last fifty years.

Once a police member shows a desire to become an investigator the selection process is not entirely transparent. Investigator Delta, for example, was noticed while independently studying the training modules and found his progress towards the induction course easy and speedy. He does not feel that this was so much his congeniality with the existing team as in having the right attitude towards the demands of the work.

Investigator Alpha feels that the choice lay in the hands of his supervisors rather than his own and that while his 'face may have fit', the CIB has always had a number of different kinds of people within it. Probationer Gamma modestly attributes his selection to luck and the existence of several vacancies in the squad. He demurs that while a face may to some degree have to fit, there cannot be all sorts of individuals in the CIB – there has to be teamwork.

Lambda was directly urged to undertake detective training after he had worked for a year as a constable on a homicide investigation. While he has heard stories about how once upon a time you had to be shoulder-tapped, and in a measure had it happen to himself, he feels that now, when there is a shortage of detectives in certain districts (Police News, August 2006), a uniformed member need only express an interest and will be encouraged to apply.

From the interviews, even though there was some nuance that the process was not entirely transparent, there was no evidence that selection was biased towards certain characteristics.

Deeper understanding

While traditional detective training programmes have produced investigators well-versed in law and practice, one mark of professionalism in an organisation is a focus on achieving a deeper understanding of the task and its social, cultural and metaphysical significance. The Investigative Entity Model puts an emphasis on these elements of the investigative environment, showing that the investigator's awareness of the milieu in which he works shapes (and hopefully enhances) the quality of the interaction through questioning with the architecture of knowledge.

For the investigative field, professionalisation might lie initially in a more academic approach to training programmes. For some years there has been involvement by Victoria University of Wellington in basic training courses and there is already a move afoot in the New Zealand Police to develop a school of investigation skills and intelligence at the Royal New Zealand Police College leading to a universally-recognised qualification.

Likewise, there may need to be more dedication to research. Though there is a Research and Evaluation Steering Committee, Theta points out:

We don't have dedicated research units in the New Zealand Police, we ARE the researchers, the practitioners are the researchers, and in some respects that is quite good...

The careful process surrounding the new Policing Act, with its calls for submissions from interested parties, its circulation of material for discussion and its public seminars, could well be replicated on a smaller scale to create an arena for debate about investigative matters. What is clear throughout the interviews at both the district and Police National Headquarters is the thirst for improvement of systems and the willingness of the policy-makers to allocate staff, funds and resources to devise better ways of conducting police business.

Autonomy

Crucial to a concept of professionalism is the level of autonomy the individual enjoys. Within a service so bound by legislation, a hierarchical command structure and a manual of best practice, it might be expected that the practice of autonomy would be shackled. Opposed to this is the notion of constabular independence, once unquestioned, but now under review in the light of the new relationship between the Police Commissioner and the Minister of Police.

Theta recalls the greater degree of operational control over staff when he began his career as a detective, and attributes the change in the level of autonomy accorded to investigators nowadays to a difference in modern management styles, resulting from

a more academically focused middle management, an increasing insight into the business side of policing, and a recognition that many different skills and independent decision making must be used to cope with crime quickly.

At the practical level, Detective Alpha feels little constrained in his day-to-day work. He asserts his professionalism as a fully qualified detective, who is given a lot of latitude to investigate his cases and is expected to use it well and bear the brunt of criticism.

He enjoys the freedom he is given to work through a case, especially if he is the sole detective dealing with it; he is confident that if there should be an issue with work or some advice is wanted, his immediate supervisor is generally available for assistance.

His colleague Detective Delta concurs, feeling he has a great deal of leeway in deciding his course of action.

Even at this early stage of his career Probationer Gamma is aware of the potential for autonomy: he observes that while each investigator is expected to work autonomously, the police basically runs on systems and there is a system provided for everything.

The Best Practice model sets out the way things should be done, but in saying that, you trust your basic instinct to do things properly, so there is a lot of leeway for people to do it other ways.

Collegiality

Since all CIB staff have undergone the same selection, training and deployment process, defining an individual's or team's 'professionalism' of approach may rest also on qualities such as cooperation, courtesy, easiness of communication, congeniality, supportiveness and independence which contribute to a productive and pleasant working atmosphere.

To the interviewees, a professional approach is obviously something more than following rules. When his colleagues describe Epsilon as shrewd, efficient and well-

liked, only the term 'efficient' refers to his competence in performing his duties. The term 'shrewd' could be defined as having political nous, a weather eye for advantages for himself and the team, and good judgement in allocating tasks and mediating in difficulties. The last epithet, 'well-liked', suggests perhaps that he is fair, consistent and supportive of his colleagues, since these are qualities generally sought for in one's supervisor (Police Association survey, 2006). Perhaps it is significant that all levels of his staff call him by his nickname rather than his given name or police title.

10.1.1.2 'based on ethics'

In New Zealand the Oath of Office for Constables and the Police Code of Conduct are based ultimately on the principles drawn up by the first Commissioners of the London Metropolitan Police, Rowan and Mayne, (set out in section 3.2). These were the first to eschew a military role for police, evincing that 'the police are the public, and the public are police'. From this flowed a set of guidelines for honourable conduct, especially in relation to the concept of service and acceptability to this public:

To seek and preserve public favour, not by pandering to public opinion, but by constantly demonstrating absolutely impartial service of law, in complete independence of policy and without regard to the justice or injustice of the substance of individual laws, by ready offering of individual service and friendship to all members of the public without regard to their wealth or social standing, by ready exercise of courtesy and friendly good humour; and by ready offering of individual sacrifice in protecting and preserving life.

This seems to transcend the requirements for a mere profession. Though there were several examples in the interviews of concern for ethics (Delta's concern for the Privacy Act, Epsilon's rules for new members of the group), in practice, it proved impossible to tell whether members of the group, obtaining by abductive insight an ingenious new way of tackling a particular incident or approaching an offender, considered first the legal ramifications, or the ethical ones.

10.1.1.3 'marked by competence'

The training programmes for investigators, from formal induction and qualifying courses to mandatory and discretionary in-service training, are designed to enhance competence. In the district studied they rotate their trainees in CIB to different squads to give them exposure to different areas and different supervisors and areas of policing; they are assessed all the time through personal performance appraisal and a separate assessment every time they rotate or change to a different squad. Procedures are in place to detach and re-deploy members if they do not make the grade for the group; there is ample opportunity for mentoring. Theta notes that the hierarchy is constantly looking for ways to do the task smarter, harder and faster, and providing resources for projects such as the case management study, which should improve the competence of individual investigators.

10.1.1.4 'recognised by others'

Theta is convinced that members should be pitching policing as a profession. From his surveys and talking to people out in communities he feels that in society there is still a respect for the job police have to do, but public expectations have become higher...

I call it the expectation that you need to be Robocop – I mean, you're plugged in, all the time you need to know everything, you need to do everything fast, you've always got to solve stuff, you've always got to meet expectations or better them— let's face it, we're living in a society nowadays that's high consumerism: the difference between a good and a bad organisation is service, and if you can't deliver a service, people look elsewhere.

One of the challenges to the police establishment is this possibility that some or many of its core services could be performed more cheaply by other agencies or commercial sources. On the other hand, since the New Zealand Police perform so many different law, order and safety functions on the public's behalf, there is always the possibility of being tasked with further areas of responsibility, particularly when the agency is politically recognised for its growing professionalism and ability to perform more complex tasks. For example, during 2008 considerable time was spent

in planning to subsume the work of an outside agency, the Serious Fraud Office, into a new combined group of CIB and Serious Fraud Office staff, OFCANZ. The consequences for hegemony and budget splitting were a source of concern for both agencies, and for civil rights groups. The ultimate fear is that communities under stress lacking legitimate agencies may fall into the shadow of lynch law.

Theta points out the diversity in New Zealand society today: where once there was recognition by the police that society was bicultural, now the police deal with communities within communities and people speaking any of 180 different languages. It is not easy to find a common standard or community of interest, though diversity has also created discussion and emphasised the need for a finer appreciation of the police's powers of discretion and judgement in individual situations.

While other participants felt strongly the need for a professional approach to the task, based on thoroughness, impartiality, legality and ethics, they felt that investigation was still a service rather than a profession.

One poignant view was expressed that it no longer seemed possible to deliver immediate, personal service to the public and solve crime because of a lack of resources.

10.1.2 There is a concern for the performance of others in the group: induction rituals, coaching, mentoring and monitoring are axiomatic

There seems in the past to have been a fairly casual approach to induction into CIB groups. One investigator, coming from a small suburban station to a busy station with many more staff, was given just a quick induction from the training officer. Another was shown around by the officer in charge of the CIB and told to 'get on with it', which he thinks in retrospect was a good thing to do, as it encouraged him to ask others for advice and then to use his initiative.

Nowadays, the performance appraisal system and assessments allied to the rotation system ensure new supervisors are aware of the competencies of new arrivals, and also their areas of deficiency; it is expected that supervisors will pick up and correct

any problems and assist trainees to better their skills.

More specific care is taken by the Operations Group, where, because of the official policy of rotating investigators through the many areas of the CIB, the relatively stable core of supervisors is constantly receiving and farewelling new members. The system of rotation in place, whereby new constables do six months in various sections, so they get different supervisors and different opportunities, works to the advantage of the constable rather than the supervisor. On the other hand, rotation is felt to be advantageous to the hierarchy, who have more flexibility in deploying staff.

To keep the group spirit functioning well in this fluid situation, Epsilon takes the arrival of each new member to the group very seriously.

When they arrive for their first day of work, the detective sergeant introduces them to their new team, then Epsilon introduces himself and, as he says, ‘We sit down and have a wee catch-up’. He explains to the newcomer where they fit in the team, what they will do, and that they are responsible primarily to their detective sergeant. Next he gives them a list of personal objectives, which includes:

- contributing to district goals for the community’s welfare, such as reducing crime and enhancing safety at home and on the roads;
- ensuring the quality of investigations undertaken;
- providing quality customer service;
- acting on intelligence gathered;
- maintaining quality informants; and
- ensuring training requirements and leave entitlements are managed.

This list relates to the Investigative Entity model at several levels.

The first item represents the highest level of interaction with the elements of the environment, the pervading culture and every other member of the agency; ‘ensuring the quality of investigations undertaken’ reflects ethical connotations that the job not just be done, but be done well, requiring the motivation, courage, experience and training depicted at the investigator level of the model; ‘providing quality customer service’ represents the interaction with the elements of the environment level, plus the assessment and evaluation of individuals and investigative teams by colleagues,

superiors, the government and ultimately society. ‘Acting on intelligence gathered’ and ‘maintaining quality informants’ are tasks at the interrogative interface with the architecture of knowledge; and ‘ensuring training requirements and leave entitlements are managed’ demands skill in coping with the constraints and opportunities of the work environment.

As well as this list, there are two issues that Epsilon talks through in depth with each new staff member. The first is the standards he expects, particularly with prosecution files, and the reason he has those standards; he explains his belief in professionalism and how it can be achieved. His second emphasis is on their preparation of witnesses before they go to court, and what his expectations are.

All new staff are given a workbook to record details of jobs they attend and are encouraged to record things they have learned.

He is careful with the uniformed staff who come to work in the group, consoling them that it will take them a month, if not two months, to understand how the office operates. He particularly enjoys the moment when they begin to comprehend.

Tau, too, takes pleasure in the progress of his trainees, commenting that comparing the trainee before and after training is like having two different people – their growth in confidence and self-awareness is so remarkable. He comments that many training programmes throughout the police are designed to give the individual self-confidence to do things and use their own initiative and intuition, especially in the investigative area.

However, none interviewed was assigned a special mentor when they began work—did this reflect a presumption that new staff knew where to find help if required, and had the confidence to ask for it, or indicate the existence of an environment where it was known all members would automatically monitor the progress of new members and tactfully volunteer assistance when it seemed to be necessary? Participants felt that though both suggestions had a measure of truth in them, especially the willingness to help new members, the heavy workload of the existing team may have made supervisors reluctant to burden a specific member with an extra responsibility.

Epsilon feels fortunate that they have a relatively friendly office in which people do work together, so newcomers with a problem can come to him or any of his staff; he notices that people often seem to pick up the solutions to problems by going through them with others.

Rather than demand conformity to his own ideas and practices, Epsilon says to new staff:

You take the good out of one supervisor and the bad, then you create your own personality and do what YOU think matches, as we all have good and bad sides.

He generously attributes the friendly atmosphere that sparks imaginative ideas to the quality of his detective sergeants.

Lambda actively encourages his new appointees to ask questions:

I tell them, 'This is the time in your training when you should be asking, not me especially because I am their boss, but all the senior detectives, everything. This is the time when you should be saying, 'We're doing this, but why are we doing this?' We're always learning, I'm always learning, In the job we do, we certainly don't know everything; it's not black and white.

There is perhaps more room for teaching on the job; Delta would like new appointees to have a senior member sit down with them and show them certain ways of doing tasks, feeling that this is the best way to learn, and Gamma has found that the more experienced members of the squad are more than happy to help. Delta has a reservation:

Sometimes we learn through trial and error, which is not ideal when the success of a prosecution rests on a job well done.

There is definitely concern for the performance of others. Delta says,

If somebody is not managing, then it would become apparent, and it would become apparent in your paperwork that you were working on, and it's addressed then, but really it's fair to go to your supervisor when you think you need to.

It would appear that Epsilon's insistence on quality paper work is also providing a diagnostic tool for stress.

The overall picture of the group shows that all members want their new appointees to be thoroughly trained, and are prepared to answer questions, act as mentors and refrain from criticism while they are achieving this.

10.1.3 There is an atmosphere of trust, support, and respect for colleagues within the group

When Kappa was given oversight of the group, he had some concerns about his acceptability, in view of his lack of experience in the CIB. He refers to this as his 'coming from a non-snobby background', but wryly comments that on the other hand, police members in Road Policing probably viewed the CIB as being a bunch of conservatives who didn't understand road policing. He attributes the present easy working atmosphere to Epsilon's competent management of the operations team and the generous sharing of information that prevails.

Kappa's long experience suggests to him that the qualities of trust, respect and support for colleagues subsist in small work groups rather than in larger ones, and he considers that Epsilon's group meets the criterion absolutely. However, he points out that such trust, respect and support does not prevail throughout the whole organisation; there will often be people who are hopeless at particular jobs and cause problems for the group.

Overall, he thinks that the police would like to trust each other, but the recent competition for the diminishing amount of money and resources available is narrowing people's vision so that they become very protective of their patch rather than looking to the horizon.

Trust within the group itself begins with the confidence Epsilon has in its members. He tells them at the beginning of each enquiry that it is they who are doing the enquiry and he trusts them to bring to his attention anything they think is suspicious so that he can work on it as well, even if it is something or somebody that seems

only incidental to the investigation. His insistence on this is based on an experience that still worries him:

Four years ago one of my constables on an enquiry had 'turned over' a car [questioned the occupants and searched the vehicle], and saw a man (who turned out to be the offender) with scratches on his neck. Now, he was a junior member, he didn't have the confidence to come forward and say, 'Hey, I've found this guy with X, we need to do some work on him' or bring it to our attention, and though he put in a job sheet later and mentioned in his notebook about the scratches, it was not until we had a DNA in for the offender that he brought out his notebook, and lo and behold he had down about the scratches around the neck. His confidence wasn't sufficient to feel that he could put something into the enquiry. For me as a manager it was a learning curve.

Epsilon's response was both practical and kind. His first move was to create an atmosphere of trust by being willing to listen to staff without censuring them, and working with them to find solutions. The second was to make sure that every member was clear about what they were to do on the tasks they were given, and give them grace to do it. The third was to speak personally to each new staff member on their arrival, and make his expectations of them clear. His final concern was to show his trust in the competence and goodwill of his five subordinate sergeants and create an environment where all four of his groups could work together.

The consequent respect for supervisors and colleagues is very evident, and stretches far past the immediate group. Alpha acknowledges his good fortune in having in the district a very experienced, knowledgeable group of supervisors in all departments, not just in Central City Investigations, but in the Drug Squad and other specialist areas.

10.1.4 There is a high level of interaction and communication; resolution of conflict is done through discourse and compromise

The high level of interaction and communication begins at the top. Inspector Kappa talks daily to Epsilon about what is going on; if there are major things on hand, he

expects, and gets, an overview of what is happening. The interaction is underpinned by a high level of trust:

I guess I don't know what I don't know – if he doesn't tell me, I don't know what's going on. So I rely on him and I have an open communication style in process, so that he and I are confident we can tell each other things, that we are honest with each other and we tell each other things in confidence.

As well, Kappa visits and talks to the group members about how they are going, and considers he gets a fair bit of feedback from everyone.

All members of the group feel that although they may be working independently, or on different cases, there is a lot of talking going on. In the early stages of a case, if there are many witnesses to be interviewed and facts to be recorded, there is a concerted team effort to get them out of the way so that musement (Peirce's term for unshackled interrogative entertainment of ideas by an investigator [Eco, 1997]) can begin. The procedures for this initial gathering and sharing of evidence by the team are formalised. DSS Epsilon's routine reflects this:

As someone comes aboard the investigation they get a full briefing. I run daily briefings for a serious incident where all staff are required to attend, where all people talk through what they have done in a clear and concise way. That way I, as the o/c, know what's happened plus also can feel the staff are working appropriately.

The group members appreciate that when the routines are running smoothly, good supervisors then 'let the investigator get on with it'.

The consensus seems to be each investigator recognises the necessity to meet for briefings as an efficient way to convey the latest information about any case the team is working on, but values the opportunity to work independently using their own strengths; there is a general willingness to discuss what is happening at casual meetings with others, and to use less formal methods of conveying information, such as emails, text messages and meal-room gossip.

There is a great amount of this informal communication, which can be extremely productive. As Investigator Alpha says,

Sometimes we solve things just by talking about things in the meal room. Everyone just chats and a file comes up with a guy's name on it and someone says, "That guy there, I remember him" and we'll do a NIA check on him and things will progress from there.

This is very reminiscent of days gone by, when an experienced enquiry sergeant could find the very file that was wanted. In these cases the casual tossing up of ideas, the group musément and the obvious freedom to express theories or suggest connections in a relaxed way strongly reflects a team who may be working in the nature of a community of practice.

Tensions that arise can be dealt with within the group. One managerial source of problems is the huge cost of a major investigation and how it may impinge on the area budget, which has to provide all the group's resources. Kappa is philosophical, recognising that when the supply of resources diminishes it is easy to become protective of one's patch and become less aware of the horizons, but in the end, someone has to pay for investigations, so his budget is contributing to the general result and to the overall New Zealand Police's success in combating crime.

Epsilon's staff have not been directly involved with budgeting troubles in the past, but recently leave has been given a budget value, which clearly has a consequence in terms of staff being put on leave, which then reduces the ability to investigate as much as they would all like. They can present with other problems, and he has fostered in them a belief that an honest approach is the best way of dealing with things.

As a supervisor, Lambda finds little conflict in his team. They have learnt to compromise over sharing resources with other areas of the Police, and find ingenious solutions to shortages. He has found the best procedure is to make sure the hierarchy is told when there is a lack of resources, so that the problem does not escalate to the point of eruption.

Tau confirms that there is a great deal of communication and interaction, adding that in this respect he has noticed that there is an increasing tendency for many groups within the police to interact more as a community of practice than the traditional work group with its hierarchical structure and formal style of communication and interaction.

10.1.5 There is an emphasis on sharing of explicit and tacit knowledge

The resources of the police knowledge management systems are available to all members, but Investigator Alpha makes an interesting comment about their use:

There's always been barriers between the CIB and uniform. If you're looking at it from the perspective of the CIB – then they have access to the same systems we do, but we know how to use them better and we also have better contact with inter-agency help.

Most knowledge-management systems have the capacity for information to be labelled 'available (or not) for disclosure to the public', but there is some wariness about sharing all knowledge and systems. Gamma, coming fresh to the group from uniformed work, says:

I think it would be good to have a system that we all had access to, with all the information at your fingertips, but with having a universal system like that it might be possible for unsavoury people to infiltrate and get their fingers on the information.

Alpha finds it easy to share information when all the staff are working together. He enjoys the early stages of an investigation when there is a concerted team effort to gather evidence and interview witnesses, before one member assumes responsibility for the ongoing attention to the file.

Hopefully, you've got a good enough sort of supervisor to let you get on with it.

Epsilon has found tactful ways of passing on his tacit information, as exemplified below:

It's really interesting to think about passing on little tricks of the trade, the sort of knowledge skills that you talk through, because I had a lady traffic officer who came in yesterday and said to me, 'I was looking for somebody in

the Crimewatch portion of the paper' [ie, she had printed the wanted person's photo and details in the newspaper and given her name to contact]. Someone rang me up, and this person gave me some more information, and it sounds as if we are on to a car ring.' I said, 'That sounds really good. How are you proposing to do it?' She came out with all these things, and then I said, 'One way around doing it would be by doing this...' 'I never thought about that,' she said.

He is sure all the detectives and detective sergeants in his group when they are approached by others will think of similar things, so that tacit information is shared, because the staff feel it is the right thing to do.

Lambda points out that work in specialist areas such as drug investigation involves tricks of the trade that are useful in all areas of detection, and he is keen for them to be shared. He is particularly concerned to make and share useful contact people in other organisations, so that there can be a direct approach to the person most likely to have the information sought.

His staff are encouraged when working with specialists such as pathologists to ask them for information about their field of expertise, since he has found experts very willing to teach, and generous in their sharing of knowledge.

Kappa gathers his explicit information for management from formal and informal meetings and briefings with his staff, and by navigating around computer systems. When facing a plethora of sources he prefers to tap into the staff's tacit knowledge of how to tackle it:

I know it's a copout, but that's the first step I take. Just go to the office and bawl out, 'Does anyone know the rule around this?'

10.1.6 *There is active encouragement of intuition and experimentation*

It was earlier stated (p 149) that an essential difference between an investigative community of purpose and an investigative community of practice may well lie in the way unknown knowledge is tackled. This means not only that individual

members are skilled at managing their own abductive insights, but that they are prepared to accept and act upon the intuitions of others.

All members interviewed believe in ‘hunches’ or ‘gut feelings’ – in other words, intuition in its many guises. When Epsilon says he is looking for staff with ‘the tenacity to look outside the square’ his statement is based on his conviction that intuition is a great tool for an investigator. He has a belief, based on thirty-two years within the organisation, that intuition and experimentation has always been needed. If someone has a hunch, he encourages them to ride with it.

Lambda concurs. When working with trainee detectives in a new activity, he likes to let them work out their own way to approach the situation, get confirmation from him that their proposed method complies with the law, then go ahead. He prefers to give advice only when called on, rather than being asked constantly for instructions. As a result, he develops staff with initiative, who can try new methods confidently and know when and where to go for help.

I want people to do things outside the square. I don't want them just to tick box A, box B, box C, because that's the way the police has always done it. They can suggest a solution, and I can say, 'You've thought about this thing in a way that all my life I've never thought about – great!' Who cares if it falls over in a while – we'll go back and try another way. I'd rather someone try something, than do nothing.

The interviewees, however, have different ideas of whence this creative element in their work derives. Investigator Delta, for instance, believes strongly in intuition, but considers facility in abduction is learned by doing something over and over until the investigator has a ‘feel for it’. In saying this, Delta may be denigrating his abilities: Peirce believes that abduction is fundamental to how we learn, and close to instinct. The ‘getting a feel for it’ may mean that Delta has learnt to identify and hold fleeting details to allow time for musement.

Investigator Alpha also believes intuition is based on commonsense and experience – you learn by doing and having good supervision.

From his experience of general police duties up to the present Gamma confirms that ‘experience gets you through’, but as he relates incidents he has attended his account is unconsciously larded with references to his feelings that something was amiss.

As far as experimentation goes, the whole police district is regarded by the staff interviewed as very good at entertaining and encouraging new ideas. Tau explains this:

The CIB manager certainly encourages if someone has idea to do something differently. E.g., in 1998, we had a crime scene coordinator concept raised as different way of dealing with serious crime scenes, so that was encouraged by bosses and training put in place, and ten years later, it's still strong and we are leading the country in it. The way we do those things are a lot more structured than anywhere else. A lot of our senior CIB detectives are used around the country for training, in particular at the Police College, because of their innovative ideas.

10.1.7 Relationships are fluid, with little regard for hierarchical status when on task

Kappa demurs at confirming this criterion. He considers that the police are a hierarchical, quasi-militaristic organisation and that there are considerable expectations from both staff and the public that such a formal hierarchy is appropriate. For major operations a full line of command seems particularly necessary, but he does question its relevance on a day-to-day basis for individual police tackling emergencies and enquiries.

He has noted a fluctuation in the level of fluidity according to the tasks being performed. When his staff work with him in the office environment there is a greatly fluid relationship, but when on task, such as attending to a bomb threat, they are more attuned to a line of command. He feels the crisis situation engenders a rigid reversion to type, but that this is immeasurably useful in terms of getting the job done.

Epsilon, too, feels that there is a clear regard for hierarchical status, but because relationships are fluid, the opinions of subordinates are listened to. He explains his role in the initial investigative process:

If you look at it from my role only: Consider that rape this morning: you must as a manager devolve down the authority to detective sergeants, so what I will ask from my detective sergeant is a briefing as to what is happening; then he will tell me what he is intending to do and I will offer him staff and advice, as he may only have one or two staff, but if he needs four or five I will try to find them from somewhere.

Note that he attends to how his subordinate intends to tackle the task and he finds the resources needed to accomplish it; but he offers only advice, not hard and fast directives. His manner is reactive rather than proactive, his focus is on offering autonomy to the sergeant in choosing the approach to take, while being available for consultation if the sergeant elects to seek it. It is not entirely laissez-faire: the shrewd Epsilon will always know from other sources what is going on. This is supplemented by a keen intuition: *I, as the o/c, know what's happened, plus also can feel the staff are working appropriately.*

He expresses in kinaesthetic terms his awareness of what each of his staff is capable of, and his satisfaction at using their individual strengths:

The good part of my role is that I get the chance to smell what comes off the potpourri and hopefully put that smell with the right person who is potentially going to get something that is advantageous to my investigation.

So, while he thinks with some justice that he succeeds by efficacious routines and long experience, this olfactory metaphor (the sleuth as bloodhound prototype?) suggests a strong power of intuition. He trusts his judgement to make sense of the welter of facts that is initially handed to him, to evolve a plan of action, to visualise the various tasks that must be undertaken and to make decisions about what number of staff, time and resources will be needed. This ability to organise knowledge may be an innate skill, or it may be laboriously learned, but Epsilon's intimate knowledge of his staff's strengths and their potential for handling tasks is cognition of a higher order.

Lambda expects a level of formality at the briefing stage of an enquiry, at tasks in the field such as doing a search warrant, and when there is a great deal of serious work on hand. These are interesting choices. The briefing stage is where the first details of a case have been notified to the police; the group manager has decided it is worthy of attention, using criteria of the severity of the offence, the staff, time and resources available to deal with it, and possibly the likelihood of success; a line of attack has been thought through and the officer in charge has to enlighten the staff about the tasks he wants accomplished, the information he wants, and any constraints that may apply. The first part of the process is explanatory, the second part directive, the third possibly exhortatory, but then there follows a questioning period that is very fruitful, throwing up ideas in each member about possible ways that each task and even the whole operation might be approached. If the group is working as a true community of practice, even this relatively formal occasion can precipitate abductive insight.

Lambda's second reservation is in connection to the constraints of executing police procedures in the wider community. There are legal, social, and ethical considerations, and possibly some need for cultural sensitivity, as outlined in the Investigative Entity model, and the chosen response is formality.

While Lambda considers that generally there is a lot of informality and the group has a relaxed and easy culture, his response to the pressure of serious work is for the group to return to formality. His strength is that each member knows Lambda is willing to take responsibility for both his own decisions and theirs when work needs urgently to be done.

Tau points out that more and more police are developing skills in specialist areas, and that this means that length of overall experience is no longer the major criterion for a supervisor deploying staff. He confirms that experienced detectives respect the ideas of junior members, and as an example mentions the homicide conference for a team working on a murder, where juniors are encouraged by their more experienced colleagues to come up with ideas. Tau says,

That respect thing comes in where ideas are not rubbished just because they come from a junior staff member. There are a lot of sharp young people out

there! It is important to encourage people to speak up, but we have to then know where the line is, so when the boss says, 'We go this way', we do, because we are still a disciplined organisation with rank structure, so if boss says do it, you do it.

The other interviewees also feel there is definitely a hierarchy, and supervision from one level to the next is an organisation 'given'. Supervisors take the normal responsibility for allocating work and resources to their subordinates and evaluating their performance. However, in the focus group, the interest of the supervisors in their staff and their concern for their welfare and success seems considerable.

10.1.8 *There is openness to the opinions of people outside the group and no limitations on where information may be sought*

Attention must be paid to the definition of 'outside the group'. While my intention was to define it as people and organisations outside the whole Police organisation, participants sometimes interpreted it as meaning any police member or team apart from members of the CIB. This may reflect the traditional New Zealand police policy of setting detective work in a branch apart from other policing areas, leading perhaps to a sense of isolation or difference from others.

In extreme cases this can lead to a legend of 'mystique', in lesser cases to a jealous suspicion that the favoured area is receiving more resources, staffing, or better conditions of work than the uniformed majority. Over the length of years of Tau's service he has seen some CIB staff getting an elitist view, and consequently arousing resentment from uniformed staff, resulting in an 'us and them' attitude. He comments that some CIB staff, especially junior ones, still have a vestige of arrogance, thinking that they are above the uniformed colleagues that they have just left, but there is active encouragement to breaking down the barriers and dealing with people who get too big for their boots.

Openness to the opinions of others is affected by each individual's own self-confidence and sensitivity to criticism and by the level of their identification with their group (Van Knippenburg & Ellemers, 2003).

For traditional reasons some police departments, too, have been considered defensive about the opinions of people outside the group, but this is not apparent with the focus group. The New Zealand Police are fortunate in having an able and well-respected Police Association to act as their advocate, since though there is more scrutiny of police actions by the public than in the past, and a plethora of media in which critics can express opinions, the working police members' point of view and particular concerns can be made known. The growing openness is also fuelled by increasing internationalism; as Theta reports:

We've got hundreds of police travelling overseas and back all the time: operationally, strategically the world has become a very small place, and a very busy place...if you did a stocktake of all the things the New Zealand Police are involved in, you wouldn't have enough paper to write it all down.

Once the element of defensiveness has been removed by the sense of having a high level of public approbation of police actions, the support of colleagues and the advocacy of the Association, there are few psychological barriers to the desire for openness.

The legal and procedural barriers may be harder to overcome. There is definitely little limitation on where information may be sought from individuals, but where aspects of police knowledge-management systems are shared with other government agencies, there are obviously privacy considerations. The growing interchange with overseas jurisdictions in the area of e-crime may reveal philosophical differences in the questions of who may have access to information and how it may legally be stored, retrieved and used.

Epsilon notes that there has always been a good liaison between Police and the various organisations which have a common purpose with them. Likewise, feedback from contacts with the public at ground level influence the government's policies for policing, for the community's responsiveness to crime gives a clear direction where investigation has to go. Lambda feels that the desire for openness is affected by the police's perception that the ideas that come from outside organisations or the public

or media are unworkable. Often they are unrealistic in terms of either the resources that police have or the laws that they have to operate within.

From his eyrie Epsilon keeps a close eye on his own community's standards of expectation. He relates:

I worked many years ago for a new District Commander who when he came in was not going to have staff investigate burglaries, thefts from cars, etc if they could focus more on violent crimes. I said at the meeting, 'My mother is 70 – the three things most important to her are her health, her house being broken into, and her car' – these are always going to be the driving factors and we in the police should always be looking into them.

This is a practical man's response to a change in direction.

10.1.9 There is evidence that the group learns

The existence of a full training programme evinces only that a group is taught, not that the group necessarily learns.

Tau comments that staff get resentful where attendance at training is mandatory and regularly repeated, but there is other training which everyone is keen to attend. From these training sessions he can see how groups learn, and this is supplemented by work with field supervisors.

The group felt their attendance at formal training programmes represented only part of their learning. They felt that they were always learning, and that within the group there were always individuals 'pushing the envelope'. They mentioned that they were trialling new issues in policing, tackling new or more complicated types of crime, and constantly adapting to different technology as investigation services took advantage of scientific discoveries. All these required communication within the group, discussion, and the devising of ingenious ways to cope with demands.

The detectives commented that while there is a format that is usually followed, each investigation is so different from its predecessors that there is something for the

group to learn from it. This does not only apply to successful new manoeuvres: as one member says:

We are always going to make mistakes: that is the nature of all that surrounds us, but we do have to think on our feet, and we have to make sure that whatever things we do, we learn from them.

10.1.10 There is evidence of innovation – creation of knowledge, new relationships, new procedures, new systems

One new procedure instituted within the group is in the allocation of files, the cases upon which the investigators work. Traditionally every file that arrived on the detective senior sergeant's desk would be sent on to a detective sergeant, who in turn allocated it to a subordinate. This unfortunate investigator could have twenty or thirty files sitting in his in-tray, and sometimes it could take four months before that particular matter could be dealt with. The stress on the investigator and the impatience of the victim can be imagined.

After discussion with his staff and examination of the workload, Epsilon decided that his detective sergeants should give investigators, whether they were junior constables on rotation or senior detectives, five active investigation files only. The detective sergeants would hold a pool of files and as one was arrested or resolved, another one would come in. When a member of the public made a complaint, the staff would thank them, but explain that because of work pressures they could not deal with all matters brought to their attention.

This practical solution to an erratic and unrealistic workload had some direct public and political consequences, which Epsilon was prepared to shoulder. He feels that respect for the group has increased because of their honesty, and because everyone now knows they are working as hard as they can.

One of his staff concurs:

When it comes down to it, we're quite an adaptable bunch. There are a lot fewer resources that we are able to have at our disposal these days because of the tightening recession. We don't create shortcuts, but we do find ways to do things so that they get done, otherwise they'd just never get done.

Some proposals might even be called ‘re-innovative’, such as the proposal to return to patrolling by bicycle.

Currently their attention is focused on adapting to the ramifications of the new Summary Proceedings Act: if there is to be a faster time frame for court briefings, changes to staffing and prioritising will have to be accommodated. There will need to be compromise and goodwill over taking leave.

Another problem being grappled with is the repetition of entry of information that is the burden for a detective involved in serious crime. When a case goes to court, all the documentation and briefing of witnesses is done by the detective, ready for the Crown prosecutor to stand up in court and use; the preparation takes a huge amount of time away from investigating other crimes. A member of the group is meditating over the proposal that there be an intervening tier of staff, people who are not the investigators, or the Crown; where the investigators investigate and put the file through, with job sheets and statements, to another, outside, agency and *they* brief the whole thing, and do the witness preparation. Effectively they could be lawyers who are first starting out and need a bit of grounding – they need to write briefs and submissions and become familiar with the system. The propounder says, wistfully:

If we could have someone like that, I could probably quadruple my clearances, because I am filing files, dare I say it, with named offenders on them, only because I don't have the capacity to investigate them.

The innovation, therefore, ranges from coping with changed circumstances to musing on policy; most of the changes seemed to be based both on keeping up a satisfying output of work under difficulties and on maintaining goodwill and a cooperative spirit among the members of the group.

10.2 Summary: the elements considered

The group seemed to meet in full the initial criterion: *There is a professional approach, based on ethics, marked by competence, and recognised by others.* All except Kappa had successfully passed the lengthy detective training and the picky

selection process that had enabled them to reach and retain membership in the group. In Kappa's case, his university qualifications and his personal strengths had led to oversight (among other responsibilities) of a specialist group for which he was not himself qualified, but there was certainly a professional approach and acceptance in his dealings with the group. The group's prestige stood high among colleagues.

Conformity to the second criterion: *There is concern for the performance of others in the group: induction rituals, mentoring and monitoring are axiomatic*, was manifested by the careful induction given by Epsilon to each new member of the group. There is a ritual of introduction to the detective sergeant and the group, and while no specific mentors are appointed, Lambda's encouragement of questioning, however louche, and the comments of the more junior staff that the older detectives are more than happy to help, suggest an informal level of concern for others. Tau, too, keeps a careful watch on training needs and the welfare of others.

Every interview contained material that confirmed the third criterion: *There is an atmosphere of trust, support and respect for colleagues within the group*. It is evinced to staff by the cordial relationship between Kappa and Epsilon, the approachability of Epsilon over any matter, the supportiveness of the detective sergeants, and the confidence of the detectives in their supervisors. It is pertinent that Kappa points out that this happy situation does not prevail throughout the police.

There is evidence supporting the fourth criterion: *There is a high level of interaction and communication; resolution of conflict is done through discourse and compromise*. All interviewees could itemise the regular and irregular meetings about work in hand, organisational matters and individual cases; members mentioned in addition the frequency of informal discussions with others in the canteen and how enjoyable and productive it was. It was more difficult to elicit information about the resolution of conflict. The issues that were mentioned were more about competing for resources with other groups than about interpersonal conflicts, so the second half of the criterion could not be said to be definitely confirmed. However, there was a relevant comment from Lambda that he and his team had found ways to compromise about shortages and sharing of resources so that problems did not escalate.

Many examples were given to support the fifth criterion: *There is an emphasis on sharing of explicit and tacit knowledge*. It was interesting that reasons for sharing were often based on “it’s the right thing to do”, an ethical and honourable outlook as much as a practical one.

Interviewees concurred with the sixth criterion: *There is active encouragement of intuition and experimentation*; there was perceptible pride that both their group and the district in general were open to both concepts.

The rigours of the police organisational system made the seventh criterion: *Relationships are fluid, with little regard for hierarchical status when on task*, the most difficult criterion to assess. The respondents commented on their level of independence, the collegial atmosphere within the group and the ease of access to supervisors for help when required, but none confirmed any lack of regard for hierarchical status when on task. Two at least commented on the need for a chain of command and appropriate levels of leadership when dealing with serious incidents involving many staff. The most that could be discerned was a willingness of members to accept the need for some ‘give and take’ when circumstances dictated.

Opinions on the eighth criterion: *There is an openness to the opinions of people outside the group and no limitations on where information may be sought*, reflected the police’s growing links with other agencies in dealing with community problems and their awareness of media scrutiny. None felt that there were limitations on where information might be sought, other than the limits laid down by legislation; casting widely for information, the use of informants, personal tacit knowledge and links in the community to obtain useful material is long-established practice.

When discussing the ninth criterion: *There is evidence that the group learns*, interviewees pointed out that they were always learning – catching up with new technology and more complex crimes, adapting to organisational change, and learning from mistakes. They were able to point out how they had in the past adapted to changes in structures and changes in practices, and to how they were approaching the new time limit for cases to come to court.

For the tenth criterion: *There is evidence of innovation – creation of knowledge, new relationships, new procedures, new systems*, interviewees were able to give concrete examples of new procedures that were innovative in concept, negotiated for by clever communication and proven successful.

The research showed that not all criteria were met absolutely by the Operations Group. Most obvious was difficulty with the seventh criterion: *Relationships are fluid, with little regard for hierarchical status when on task*.

Information on part of the fourth criterion, *resolution of conflict is done through discourse and compromise*, was not of sufficient scholarly weight for me to state confidently that the criterion was met.

Overall, the analysis of the interviews answered the second part of the research question, “What is the nature of teamwork within the investigative entity?” by identifying the group as cooperative, considerate of each other, respectful of each other’s autonomy and competence, and communicative when on task at the interrogative interface with the architecture of knowledge. There was evidence that both explicit and tacit knowledge was shared, unknown knowledge sought for and speculations canvassed in a non-judgmental environment.

As well, bearing in mind the structure of the police hierarchy, with the lingering overtones of its military origins, based on the perceived need for leadership in stressful situations where time is of the essence in preventing further escalation of a crisis, the analysis suggested that the Operations Group is not only a competent community of purpose, but may even be the nearest approximation possible to a police community of practice.

Chapter Eleven

Working on Crime: individual and team management of knowledge for decision making in the initial investigative process: the research considered

Overview

The empirical study and its underlying theoretical framework confirmed the intertwined nature of the three strands of the research question:

- what is the nature of the investigative entity and how do individual investigators make decisions within it?
- what is the nature of investigative teamwork within the investigative entity?
- what should be the qualities of police knowledge management systems provided for investigators?

The evidence sustained the definition of investigation as an abductive process, and observations and interviews confirmed the integrity of the model for both individual investigators and members of an investigative team. Aspects of the abductive process relating to the verification of material obtained at the interface of the architecture of knowledge were isolated, providing an additional tool for analysis of the interrogative interface with the architecture of knowledge.

The investigative culture within which the task is performed was shown to be of major importance, and from the depiction of investigators using the police knowledge management systems provided for them, recommendations could be made to the agency about knowledge management policy and providing a productive environment for investigators, and some suggestions made to researchers for future studies.

11.1 Research outcomes

11.1.1 The nature of the Investigative Entity

The first strand of the research began by examining the literature on investigation (Greenwood, 1977; Weston, 1990; Kenny & More, 1979; Swanson, Chamerlin & Territo, 2003; et al) to establish what the purpose and procedures of a standard investigation of a criminal event were considered to be. From this derived an

understanding that the purpose of the investigative process is to obtain a narrative of events that will lead through later verification to a successful prosecution of an offender; and that all of the information obtained, and the processes by which it is derived, must be forensically sound. The case studies and discussion with many police personnel confirmed that it is on the hope of obtaining that narrative while memories are fresh and clues perhaps undisturbed that the initial investigation process focuses. There are procedures in place from there on to guide the investigation of each incident and ensure that all legal requirements for a successful prosecution are fulfilled. Where there is variation in the initial investigative process from these more routine procedures, it is in the individual investigator's use of imagination, intuition and abductive methods to obtain the narrative and plan a route to its verification, and the observation, case studies and discussion with police personnel showed that this intuitive element is common among investigators.

The integrity of the investigative entity model was confirmed through examples of the investigators' personal qualities and skills as depicted at the heart of the model; their awareness of constraints and opportunities in their work and their techniques for dealing with them; their awareness of the elements of the environment and culture in which they exist, their teamwork, and in the expertise with which they handle the interrogative interface with the architecture of knowledge. The case studies showed the investigators in the study group to be meticulous, cooperative, and deft and selective users of the knowledge-management systems provided for them. The highlights of the interview process were discovering how enthusiastic the investigators were in carrying out their tasks, how much they enjoyed the autonomy they were given, how common were flashes of abductive insight and how carefully they verified them.

11.1.2 Aspects of verification

From the material yielded by the interviews, supplemented by the observations made during a lifetime of involvement with investigators, it seems possible to further support the integrity of the Investigative Entity model by isolating several characteristics of the use and utility of knowledge-management systems for decision making in the initial investigative process.

The first aspect is *tally*, similar in kind to Riessman's *attending* (1993), but perhaps more focused on certain aspects of the process and the goal of presenting a case in court. *Tally* is the establishment of basic facts pertaining to the incident under investigation, such as the time, date and place; what has happened; who are involved; checking these facts by comparison with other accounts; making enquiries about any aspect of the information from other sources, with the aim of obtaining an approximately complete and accurate narrative of events, and recording details of it. The sources for the information are usually people, personal observations, material evidence and knowledge-management systems, as detailed in Chapter Seven. In terms of the Investigative Entity model, *tally* is the practice of interrogatively interfacing with the architecture of knowledge to obtain pertinent information in ways that are socially, culturally and legally appropriate.

For this information gathering and recording, computer-based systems are ideal. For example, investigators in the New Zealand Police can call up personal information about people such as fingerprints, photographs, tattoos and DNA; if the person has an existing criminal record it will be available, with information about modus operandi, present location, associates; the systems extend to property and vehicles – a vast storehouse of useful information. There have been difficulties in the past with the integration of systems, but these are rapidly being ironed out, and the overall network is being enhanced by new or augmented applications (e.g. EVE, p 49).

Supervisors mentioned one problem with the field of *tally* – too much use of the existing computer systems as the source of information, rather than obtaining fresh data by face-to-face enquiries. Detective Inspector Graham Bell has expressed this colourfully:

Most police work is still knuckle skin on doors and shoe leather on footpaths.
(Sunday Star Times interview, 8 November, 2009).

This seems to be more a human and supervisory problem than a systems defect.

The second aspect is *grasp* – synthesising a consistent and credible narrative from the various information. This is a process of comparative clarification and decision making.

One respondent describes the process vividly:

I get in hand all the information I can, and suddenly there comes a moment of clarity when I remember every separate fact completely and vividly, seemingly all at the same time, and a probable account of how it all happened just bursts upon me.

This is the essence of abductive insight in practice, and the investigator's cognitive abilities and confidence play the vital role in this.

A third aspect is *match*. This is the skill of comparing the factual content of a narrative being given by a victim, witness or postulated offender against the narrator's body language and patterns of speech. There may be a mismatch with the normal emotions and reactions to be expected, manifested by behaviour such as histrionics or an absence of emotion; involuntary movements; uneasy eye contact or sweating. Though interviews can be recorded for later, more scientific, analysis, the first impressions will be useful if the investigator has a sound grasp of the principles of body language analysis, wide experience in the field, and an awareness of his own background and possible biases. This skill of *match* is therefore investigator-activated, rather than system-based, but the impressions received by the interviewer still have to be evaluated and recorded.

Match also includes assessing the balance between what information is already available and the evidential needs for a court case: whether there is sufficient information of sufficient quality and appropriateness, and is therefore also a function of *tally* and *grasp*. For this type of *match* there are useful formats in the computer system.

The fourth aspect is *slant*. *Slant* is the spin given to a narrative by how it is expressed. The first consideration is what type of information is being given, what amount there is, and how it is emphasised or weighted by the narrator for his or her

benefit. The second is the nature of the material that is being repressed, and the avoidance strategies being adopted under questioning. A third is the use of euphemisms; a fourth the use of a passive verb construction describing what was done, rather than what the narrator actively *did*. There is a need to delve for subtext and to screen the text for the use of revelatory metaphor. Successful coping with *slant* is a skill that can to some extent be taught, though many investigators seem to possess a natural flair for the identification of deceit based on *slant*. It is, however, a necessary human skill that lies at the heart of what the investigator must do for himself, rather than rely upon a knowledge-management system to do for him.

The fifth aspect is *filling the gaps*. This involves identifying lacunae in the narrative and devising imaginative ways to bridge them. Here the investigator is reaching into the world of the unknown; he may have to construct whole alternative narratives (Schum's meta-abduction [2001]) or probe the loose threads of the existing narrative and hypothesise links that make the mesh more firm and subtle. Whether this is done mechanically by the use of a logic tree or comes welling up in the investigator's mind as a flash of intuition, this musement and abduction is often a fruitful process. The subsequent testing of the new hypothesis will presumably involve computer-based systems as well as face-to-face questioning, but the abductive insight will provide a sharper focus for the investigator.

Thus within the framework of the investigative entity and its interrogative interface with the architecture of knowledge the investigator uses more and more complex cognitive skills as the narrative develops into a meta-narrative (Riessman, 1993; Josselson, 2007) that will satisfy both the court and the investigator himself.

The three strands of the research question unite in these five aspects of dealing with investigative information, which underpin the use the investigator makes of the play between what he alone can do, what the interaction with colleagues in his investigative team can do, and what knowledge management systems can do, in navigating his progress through the architecture of knowledge as the central figure in the investigative entity.

It became clear also that there is a productive tension in investigative decision making between what can easily be verified, and theories and narratives that arise from the investigator's intuition, or abductive insight, and for which justification must be found if they are to be entertained further. This understanding of the need for the investigator to appreciate ideas that seem to arise spontaneously rather than out of the elements of the overt knowledge management process, but to seek confirmation of them rather than ignore them in the pursuit of standard procedures, underlies the Investigative Entity model. While inclusive of the traditional methods of induction and deduction, the research emphasises the early definition of investigation (p 69) as 'an *abductive* process, both internalised and manifest, and sited within the prevailing culture, undertaken by an investigator upon the explicit, implicit and unknown facts available to him...' The particular importance of tacit knowledge, and the need to weigh whether there was material as yet unknown to be sought for, and where it might be found, was shown to be of crucial importance. It was confirmed in interviews that the prevailing culture was indeed highly influential on the actions of all investigators, and that human rights, privilege and privacy legislation, coupled with the clear requirements of the court in regard to evidence, acted as guidelines in their approach to the task, rather than being felt as constraints.

Finding evidence for the second half of this early attempt at a definition – 'thus creating a continuing, unselfconscious, productive interplay between the skills of one and the complexity of the other', proved to be interesting, as it involved listening to many narratives of incidents attended by investigators, some being part of the formal interviews conducted with members of the operations group, and others from 'war stories' past and present. The assiduity displayed by Epsilon in his role in a major investigation and Kappa handling a serious accident evince the continuing and productive interplay between their skills and the complexity of their tasks; in particular, 'unselfconscious' seemed closely linked to the confidence of all investigators, based on their training, development and experience.

11.1.3 Investigative teamwork

The second strand of the research focused on investigative teamwork. The centrality of each individual investigator's skills, integrity and abductive insight to the

investigative process, later explicated in the Investigative Entity model, was incorporated into a nexus of such individuals working as a group.

Each had in common training for the task and a similar share in the constraints and opportunities provided by the working environment, though the level of success might vary from one investigator to another. Should an investigator desire it, there were many formal and informal conduits for sharing explicit and tacit information. It became clear to me that for a behaviour such as entertaining intuition or using abductive methods to continue, there must be rewards in using it, even if that is simply personal satisfaction; for an investigator to be unselfconscious, there must be a working atmosphere where intuition and abductive thought is appreciated and innovation welcomed.

The research into the nature of an investigative team, reflecting both the scholarly framework and the nature of the investigative task as depicted in the Investigative Entity model, supplemented by interviews and observations, resulted in a list of criteria for identifying a productive investigative team that could be a useful framework for police organisational evaluators.

Devising the criteria brought to light the need not only to consider the qualities that make for competent investigators and assiduous investigative teams, but also to reflect on some reported shortcomings in a few individuals in the Police: the occasional example of lack of ethics, or unwillingness to share information, or disclosing information to unentitled recipients; even a few examples of improper use of computer information (Steward, 2009). Though the 400 investigations of misconduct dealt with since the introduction of a new Code of Conduct in 2008 represented the actions of a very small proportion of the New Zealand Police, and certainly none in the group studied, it confirmed my decision to concentrate on proposing a set of criteria for *designating* an ideal environment for an investigative team rather than prescribing a procedure to *create* one, which would have had to include practical provision for procedures of control and evaluation of performance (Neyroud & Disley, 2007) and for dealing with recalcitrance and reluctance to continue in the group (Hirschman, 1970). However, my exploration of the concept

covers new ground, and it presents a useful basis for further study into the nature of investigative teams.

11.1.4 Police knowledge management systems

Before the new model of the investigative entity was created, I had envisaged that the knowledge management of an investigator or a team was fed from the four sources traditionally accepted by the literature: managing material evidence from objects and scenes; managing narratives derived from people; using information systems; and using information from one's own experience. But this research showed that there is a significant fifth element, dealing with insights that arise from intuition. Since there is little research relating this fifth element to an investigative entity model, or to the demands of practical police work, there is scope for further study.

11.2 Recommendations

The investigators in the living investigative entity, with their immediacy of action and less time for musement, have a different perspective from the policymakers on their conditions and resources. This has ramifications for those responsible for providing the working environment for investigative teams, who must recognise their unique skills and potential for contributing to knowledge-management policy and practices.

11.2.1 Investigative teamwork

If police policy dictates that new ways of working collectively need to be sought, investigators can help create groups in the nature of communities of practice by sharing both explicit and tacit information and providing an open forum for innovative ideas and approaches. This is especially marked by the acceptance of any member's right to differ from the opinions of others in the team (Hirschman, 1970). There needs to be an extended emphasis on cooperation, communication, openness, acceptance of others' insight, and willingness to resolve conflict, in the interests of the task and the group's wellbeing.

The research recognised the need in a uniformed police service for positive operational leadership and a pragmatic organisational management structure. However, having an investigative team work as a community of practice might yield benefits in efficiency and job satisfaction.

The positive efforts being made by the police to change the police culture decried by the Commission of Enquiry may well enhance the ability of investigative teams to work as communities of practice. The strong bonding of colleagues noted by Dame Margaret Bazley might become more productive under the aegis of the new code of conduct and equate more to the atmosphere of trust and respect outlined in the criteria. In particular, the emphasis on the ability to blow the whistle on colleagues without recriminations could militate against compulsory group-think; the inclusion of more female investigators and those from different cultures and with different values may temper the 'male-oriented culture' defined in the Commission's report. It is to the Police's credit that these concerns were taken seriously: already the careful introduction of the Code of Conduct and a new thrust in recruiting have emanated from the crisis.

Though one criterion for an investigative team is laid down as 'Relationships are fluid, with little regard for hierarchical status when on task', there may not be the same scope for this in a police agency as in business organisations or other social service agencies. Over the years some softening of the rigours has been achieved for detective units embedded in a uniformed, highly structured department. The most obvious of these is the flexibility when creating investigative teams and the use of specialist support staff. However, in the New Zealand Police, a detective seeking promotion may need to apply for a position in the uniformed branch for a period; whether this easy interchange of supervisors within the agency from non-uniformed to uniformed areas is fruitful for both sides has not yet been explored.

11.2.2 Police knowledge management systems

The lifeblood of investigative knowledge-management systems is the information entered into it by practitioners. The first essential is for all parties, from the Minister of Police and the Commissioner and his cohorts, to staff at every level of the

organisation, to assume responsibility for understanding the process by which investigators navigate the architecture of knowledge, so that the purposes for which the agency exists may be carried out effectively. This must be based on the acceptance of the centrality of the investigator to the process – not by focusing on topic areas such as ‘the preservation of order’, ‘the prevention of crime’, but by focusing on the actual people working in these areas and their skills and needs. Once the responsibility for understanding the process is accepted, the next stage is to assure that selection, training and evaluation procedures produce investigators fit for the task, with the mental, physical and moral fitness to do the job, courage and motivation outlined in the Investigative Entity model. Arising from this, and focusing again on the capacity and cognitive style of the individual investigator, is the responsibility for supervisors to deploy investigators wisely. Such deployment includes not only the recognition and use of unique capabilities, but their effective interweaving with others into an investigative team and more mundane matters such as the allocation of sufficient time, the supplying of necessary resources, and a concern for staff welfare.

There is a responsibility to ensure that any reporting or personal inputting of data is as correct and complete as can be achieved. Faults and deficiencies need to be reported; any perceived reluctance or recalcitrance on the part of gatekeepers must be dealt with. Where ingenious local solutions to system problems have been found practicable (*Police News*, November 2009), there is a duty to inform the system designers, as they may be of national use.

Investigators should also be proactive in demanding to be part of the selection and evaluation process for new or amended systems; where an offer to be part of the consultative or feedback process is proffered, there is a responsibility to find time to take part.

There are already procedures to deal with complaints, and the assistance of the Police Association can be invoked as a powerful advocate for better tools for investigative staff.

There is a need for the use of systems to be ethical. Some recent misuses of police systems to gain information for personal purposes (Steward, 2009) highlight the responsibility to use information solely for the purposes for which it is intended.

In terms of police knowledge management, it is the responsibility of immediate supervisors to see that the staff under their care are aware of all sources of information and are comfortable with systems. Supervisors interviewed for the case study overwhelmingly felt that they should take the lead in encouraging staff to get out in the field and develop informants, searching for new sources of information where they could, and making an emphatic effort to verify data so that information recorded in investigative systems is accurate and up to date.

There is also the responsibility of supervisors for fostering a comfortable and creative environment for working. Here the criteria established for a team to work as a community of practice may provide guidelines: the need to communicate and share knowledge in an atmosphere of respect, cooperation and ethical behaviour; the need to encourage innovation and the acceptance of abductive insight and cognitive differences. If there is a need to change the existing police culture to achieve this, the responsibility rests upon all.

The easiest area in which to identify responsibility is in the work of IT staff and consultants. These staff are tasked to ensure that knowledge-management systems fulfil the requirements laid down in Chapter Seven: sufficiency, suitability, accessibility and speediness, up-to-dateness, reliability, and universality: and are thus forensically sound tools for intuition. It is not envisaged that designers of investigative knowledge systems should be the deciders of content for their systems, but that they should be familiar enough with the investigative task and the practitioners to enlighten their design of systems to meet information demands. Designing a system that allows for storage and manipulation of information is just the beginning – there must be particular attention to the knotty problem of dealing with questionable information, with capacity for some level of verification and perhaps covenants for its use. Attention should be paid to research innovations in other fields that could be applicable to investigation, such as the eye-tracking

technology designed by Matthew Gerrie (2009). Here is an area where an understanding of the Investigative Entity model would be particularly illuminating.

The designers and maintainers of the systems should be in constant consultation with investigators to identify areas for improvement, and no new system should be imposed from above without extensive consultation with investigators at the interface with the architecture of knowledge.

It became apparent in the course of the research that there were some underlying organisational matters that might affect the investigators at the centre of the Investigative Entity model in the decision making in the initial part of the task.

An example which was frequently mentioned was the hasty imposition of policy which required changes in work processes, or affected elements such as the provision of resources and staffing, or imposed limitations on time. The latest example was the way in which investigators had to accommodate the entirely worthy aim of shortening the time it takes for cases to be brought to court, an aim with which they agreed in principle but found very hard to implement in practice.

It is essential to establish the right sort of consultative process when devising operational policy so that the input of skilled investigators, both supervisors and practitioners, is incorporated. This should be followed up by careful observations of work practices before instituting new knowledge-management systems. There should be longer 'shake-down periods' when new systems are installed to make sure that all members both understand what is required of them, have had training and practice, and are actually doing it.

Linked to the problems investigators and supervisors have with introducing new policy is the disquiet felt by Headquarters evaluators and policymakers when attempting to ensure that new regulations are understood and complied with. There perhaps needs to be more study of how to communicate new ideas, procedures and requirements in this particular culture, to achieve a more subtle play in the area between compulsion, compliance and willing acceptance.

In particular, there should be a forum where members who have devised improvements, short cuts and ingenious uses for the new systems (as enthusiastically reported in the Police Association News of December 2009) are encouraged to share them with the policy makers and system designers.

The biggest practical problem facing investigators at field level is that though useful knowledge-management systems are in place, there is not always immediate access to them. Interviewees felt that the ability to input material on the spot, rather than making notes for later input by themselves or typists, would by its immediacy help to overcome the perceived shortfall in detail or suspected inaccuracy often experienced when trying to get information from the computer system. The need to equip all police vehicles with computer access, and to provide every member with a personal access facility, seems to be paramount.

The concern of supervisors that members are sitting at desks manipulating material already input, rather than actively seeking new information from witnesses, informants and scenes must also be considered. Whether the problem is lack of time, lack of understanding of its importance, or lack of inclination, it is one that perhaps only the immediate supervisor can handle, and he or she deserves to be given whatever training and support they need to achieve a satisfactory outcome.

In looking back over the years between 1974 and 1996 when I was on the staff of the New Zealand Police, and comparing the working atmosphere then with my observations during the current research, it seemed to me that the most obvious trends in the agency's culture were a growing professionalism, a greater interest and involvement with overseas agencies and international trends in crime and law enforcement, and perhaps a wider acceptance of the constant demands for change or accountability made by the restless public or governments seeking more political control over the police. In the organisation of work some ambitious attempts had been made at providing knowledge-management systems, and the dedication and skill of present project managers, their ability to imagine and design for unknown and future needs as well as the present, boded well for the provision of investigative knowledge-management systems to the agency.

The Investigative Entity model of investigation focuses on the investigator and his skills in penetrating the architecture of knowledge. Throughout the research it was always clear that the success of any knowledge-management system lay in its role as a tool for intuition rather than being the governing factor in the investigation process. It is appropriate, therefore, to end with a quotation that is both essentially New Zealand and yet applicable to any investigative agency and its people in the world: Sir Apirana Ngata's⁴ famous statement:

*E patai atu ahau ki a koe, he aha te mea nui o te Ao?
He tangata, he tangata, he tangata!*

You ask me what is the most important thing in the world?
It is people, it is people, it is people!

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Epigraphs

- 1 Margery Allingham, *Death of a Ghost*. 1934, London, Heinemann.
2. Charles S. Peirce, *The Collected Papers of Charles Sanders Peirce*. 1960, Cambridge, Mass., Harvard University Press.
3. Tony Bastick, *Intuition: how we think and act*. 1982, Chichester, John Wiley & Sons.
4. A. Conan Doyle. *The Adventures of Sherlock Holmes*. 1984, London, Book Club Associates.
5. Jane Haddam. *Festival of Deaths*. 1994, New York, Bantam Books.
6. Sir Apirana Ngata (1874-1950) was an inspirational leader of the Maori people of New Zealand: educationalist, negotiator, Member of Parliament, linguist and philosopher.

Appendix 1: HEC Consent form

Research on the Use of Knowledge Management Systems for Decision-Making in the Initial Investigative Process

Consent to be interviewed

This interview is to provide factual information as part of a thesis for the degree of Doctor of Philosophy being written on this topic by Peggy Gordon.

The questions will be open-ended and will cover:

What systems for knowledge management are provided by the New Zealand Police; what use will typically be made of them in the initial stages of an inquiry; what the desired qualities of an investigative knowledge management system are; comments on the opportunities and constraints of the present system.

ρ I agree to be interviewed

ρ I agree to be tape recorded; I understand that the tape will be transcribed and that I will be given the opportunity to review the transcript and correct any errors

ρ I understand that I can withdraw from the research at any point up to 6 September 2009 without providing a reason

ρ I request that all materials, tapes, transcripts be returned to me on completion of the research.

Name.....

Signature

Date

Contact address:

Peggy Gordon

c/o School of Government

Victoria University of Wellington

E-mail: peggygordon@xtra.co.nz

Appendix 2: Research information sheet

Knowledge Management for Decision-Making in the Initial Investigative Process

Research Information Sheet

Dear

I am a PhD student in the School of Government at Victoria University of Wellington. I invite you to participate in my research, which investigates the use made of knowledge and information systems by criminal investigators. My particular focus is on investigators' use of knowledge, and the knowledge management systems available to them in the initial stages of an enquiry.

This research has a theoretical framework based on published studies of concepts of decision-making, the initial investigative process, the types of knowledge needed, and knowledge management systems. The main objective is to inform the improved provision of knowledge to investigators in a form that is useful and accessible.

I am inviting you to participate in this research because you have been recommended by your supervisor. If you agree to be interviewed, I will arrange a time and venue convenient to you. I expect the interview to be between 1 and 2 hours, and to cover the types of knowledge management systems known to you, in terms of their accessibility and usefulness. I also include with this letter a copy of a consent form that I will ask you to sign, with further details.

The interviews will be recorded and transcribed solely to assist the accuracy of my research. You will have the opportunity to review the transcription of the interview and to correct any errors or omissions. Data gathered in the interview process will be reported in an aggregated form with nothing being attributed to, nor attributable to, you individually. Tapes and transcripts of interviews will be returned to you at the end of the research, if you wish. This research has been approved by Victoria University's Human Ethics Committee as meeting the requirements relating to ethical research.

The completed thesis will be lodged in the Victoria University of Wellington library, where it can be used by students. A copy will be made available to the New Zealand Police. I may also publish articles based on the research, or make oral presentations to interested professionals or academics.

If you have any questions on this research, or you wish to receive further information about the research, please contact me via e-mail at peggygordon@xtra.co.nz or phone (03) 3822082. Alternatively, you can contact my academic supervisor – Dr Amanda Wolf – at Victoria University via e-mail @ Amanda.wolf@victoria.ac.nz or phone (04) 463 5712.

Appendix 3: Schema for questioning

Questions for the individual selected for the case study:

- Why did you choose to be a detective?
- How were you selected / trained? Did your face have to fit?
- Were you given any induction or coached when you first started the job?
- What does your job entail?
- How does your work get assigned to you?
- How are you supervised?
- How do you report to your supervisor or the team?
- Do you ever work as the only detective assigned to a case?
- How do you work with other members of your team?

Describing a case

- How was it assigned to you?
- What was the first decision you made about how to tackle it?
- Did this plan work well? Did you change tack in the first hours of the case?
- What sources of knowledge did you use? Why?
- Is the procedure and use of KM systems you used in this case typical of the way you work?

Questions about knowledge management systems

- What other sources of knowledge do you know, but did not use this time?
- What sources do you know that you would choose not to use? Why?
- What other sources and knowledge systems would you like?
- Elicit comment on efficiency and effectiveness of existing systems:
 1. sufficiency
 2. suitability
 3. accessibility
 4. ease of use
 5. speediness

6. up-to-dateness of information; systems maintained, amended
7. accuracy of information
8. reliability of system
9. universality

Further comment on criteria for investigative teamwork