

Practitioner Perspectives of the Utility of the National Decision Model in Relation to Criminal
Investigations and Response Policing

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Abstract

This research explored the under-researched area of how the National Decision Model (NDM) is utilised, focusing on how professionals (n=15) from one Police Service in England and Wales applied the model while responding to incidents and during criminal investigations. The NDM was introduced in 2012 for police officers to apply to all decisions, regardless of location, rank, or situation. While the ethical principles of the NDM have been explored in research (Adams, 2014; Lax, 2014), its practical application for decisions has not been evaluated. This research provides an exploratory study intended to fill this gap in knowledge. Based on a review of literature, four research questions were identified: (1) What are practitioner perceptions of the NDM? (2) Are practitioners using the NDM intuitively or consciously? (3) How does practitioner utilisation of the NDM vary between different levels of the Professionalising Investigations Programme (PIP)? (4) How does practitioner utilisation of the NDM vary between investigations and response? Naturalistic Decision-Making was used as a theoretical framework, exploring the use of the Recognition Primed Decision Model (RPDM) in police decision-making. Qualitative data was gathered through semi-structured interviews and thematically analysed using the software platform, NVivo. The findings identified three themes: Intuitive Thinking versus Conscious Thinking, An Effective Model, and Investigation versus Response. This research concluded with recommendations for the College of Policing, the participating Police Service, and further research, in the hopes of creating a foundation for Evidence-Based Practice. This research was limited by its small sample size and the effects of COVID-19 restrictions impeding access to participants. There was difficulty in obtaining an equal number of participants from each PIP level due to fewer more experienced officers and due to officers being redeployed in different departments due to COVID-19.

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List of Abbreviations

ACPO	Association of Chief Police Officers
APP	Authorised Professional Practice
CCCU	Canterbury Christ Church University
CD	Core Doctrine
CJS	Criminal Justice System
CMM	Conflict Management Model
CoE	Code of Ethics
CoP	College of Policing
CPIA	Criminal Procedure and Investigations Act
CPS	Crown Prosecution Service
DC	Detective Constable
DCI	Detective Chief Inspector
DDMM	Discretionary Decision-Making Model
DS	Detective Sergeant
EPNB	Electronic Pocket Notebook
EU	European Union
GDPR	General Data Protection Regulation
HOLMES	Home Office Large Major Enquiry System
LDD	Learning and Development Department
MICA	Major Incident Computer Application
MoJ	Miscarriage of Justice
MPS	Metropolitan Police Service
NDM	National Decision Model
NPCC	National Police Chiefs Council
NPIA	National Police Improvement Agency
PACE	Police and Criminal Evidence Act
PC	Police Constable
PIP	Professionalising Investigations Programme
RCCJ	Royal Commission on Criminal Justice
RPDM	Recognition Primed Decision Model
SHDCI	Structured Hypothesis Development in Criminal Investigation
SIO	Senior Investigating Officer
UK	United Kingdom

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Chapter 1: Introduction

Much like the activity of policing itself, the causes of Miscarriages of Justice (MoJs) have also developed over time. Some historic MoJs, such as the Birmingham Six, were frequently caused by improperly obtained confessions (*R v McIlkenny, Hill, Power, Walker and Callaghan, 1991*; Campbell, 2012) and the mismanagement of police information found in cases such as the Yorkshire Ripper investigation (Byford, 1981). Subsequent reforms in legislation and police practice have taken strides in reducing the likelihood of MoJs, with the Police and Criminal Evidence Act (PACE) 1984 providing safeguards for suspects during interviews and governing the way in which police exercise their powers (Poyser, Nurse and Milne, 2018), and the development of the Home Office Large Major Enquiry System (HOLMES) in 1985 ensuring a more effective management of police information during major investigations (Allsop and Pike, 2019). Despite the introduction of PACE, the Cardiff Three is an example that demonstrates reforms do not always translate from paper to practice, with suspects refused the right to a solicitor and being interviewed without an appropriate adult present (*R v Paris, Abdullahi and Miller, 1993*).

One commonly cited cause of MoJs, still arguably unaddressed, is that of poor decision making (Maguire and Norris, 1992; Ask and Fahsing, 2018; O'Neill, 2018; O'Neill, 2019) and more specifically the influence of cognitive biases on the development of hypotheses during investigations (Ask and Granhag, 2005; Findley and Scott, 2006; Brookman and Innes, 2013). Decision making was not explicitly stated as a cause of poor investigations outside of academia until the Royal Commission on Criminal Justice (RCCJ) in 1993, which suggested the introduction of measures to improve decision making during investigations, most notably policy files for recording key decisions and post-investigation reviews to disseminate good practice and develop new lines of enquiry (Runciman, 1993, p.190). However, the Macpherson inquiry, focused on the investigation into the death of Stephen Lawrence, demonstrates that the recording of decisions in a policy file by the Senior Investigating Officer (SIO) can be absent, hindering the investigation from the outset (Macpherson, 1999, p.122). It is the responsibility of the appointed SIO to manage the course of the investigation and the available resources, and they are answerable to the Chief Officer. In the case that serious offences such as murder

or stranger-rape remain unsolved, SIO's are supported by 28-day reviews which aim to provide new lines of enquiry and ensure a thorough ethical investigation has been conducted. However, recent research by Allsop (2018) and Hill and O'Neill (2019) has suggested that 28-day reviews of unsolved murder investigations are a bureaucratic endeavour that provide little assistance to the SIO, potentially indicating that the decision-making stage of an investigation remains inadequately checked because of a focus on administrative duties.

A relatively recent change to the decision-making process in policing (and the focus of this research) is the NDM (see Figure 1), introduced in 2012 by the National Policing Improvement Agency (NPIA). The NPIA was the organisation responsible for providing expertise for police officers and for helping with the training of recruits; it was in operation between 2007 and 2013 and was superseded by the College of Policing (CoP), who provide training materials for police officers and disseminate good practice. The NDM was implemented following the recommendations of Flanagan (2008) that all policing procedures, doctrine, and codes of practice be consolidated, and is derived from the Conflict Management Model (CMM), a former model designed as a tool for justifying use of force by practitioners (O'Neill, 2018). The model is designed to provide a step-by-step framework for all decisions in policing, with the CoP arguing that it is suitable for all areas and for use by officers at all levels (College of Policing, 2014b). It encourages the reviewing of decisions to the extent of stating a review should be performed by the officer, with officers being supported by the CoP during disciplinary action if their actions are investigated, provided they can demonstrate they followed each stage of the model appropriately, regardless of the final outcome of a decision (CoP, 2014). Bryant and Bryant (2016) argue that this does seem counter intuitive; if an officer can follow the model and make a decision that produces a less than desirable outcome, maybe the model itself needs addressing. What separates the NDM from previous models is the central Code of Ethics (CoE), added to the model in 2014 and positioned to ensure that every decision made by an officer takes into consideration the values of the Police Service and meets their professional standards. The CoE is comprised of ten Standards of Professional Behaviour and nine Policing Principles (Appendix A), taken and amended from the Police (Conduct) Regulations 2012 and Principles of Public Life by the Committee on Standards in Public Life

1995 by the CoP and implemented into the NDM in 2014 (College of Policing, 2014a). This focus on ethics as central to every decision is argued to stem from the criticisms against senior police officers in the United Kingdom (UK) phone hacking scandal of the mid 2000s, where allegations of police corruption called into question the legitimacy of the Metropolitan Police Service (MPS) (Newburn, 2011; Leveson, 2012; Adams, 2014).

Figure 1



National Decision Model, taken from CoP (2014)

The model is of a cyclical design with five outer circles detailing the steps an officer should take to reach a decision, and with the CoE centred in the middle to emphasise that policing standards should factor into every decision made. The five steps are, in their given order, as follows: information and intelligence, assessment, powers and policies, options, and action and review. During the information and intelligence stage, the officer is instructed to define the problem and clarify how any information relates to the scenario, reflecting on what is happening, what they know and what they need to know. The assessment stage involves analysis, specifically of any threat or risk, as well as working out what

action needs to be taken, what is required to take action, and if the action taken will resolve the situation. Moving on to powers and policies, it is here that officers are encouraged to consider what legislation, policies, or guidance may be necessary to carry out their chosen action, with an addition by the CoP (2014b) that acting outside of policy is permitted if it is considered reasonable and if there is good rationale for doing so. The options stage of the model involves reflecting on the options available to resolve a situation, giving consideration to factors such as immediacy of threat, information available, resources and time available. Lastly, action and review focuses on implementing the chosen action, recording what happened but only so far as if the individual thinks it is appropriate, and then reviewing the action to identify any lessons or learning that can be disseminated (College of Policing, 2014b).

Past research into the NDM has tended to focus on the relevance that values have in police decision making (Adams, 2014) and how aware officers are of police values (Lax, 2014). There has to date been no empirical research on the applicability of the NDM to criminal investigations, although academics have started to question its effectiveness at supporting investigators during the decision-making stage of an investigation (Fahsing, 2016; Dando and Ormerod, 2017; O'Neill, 2018). What this research hopes to provide is a first of its kind, preliminary investigation into the use of the NDM by practitioners during different levels of investigations: Volume crime investigations, Serious and Complex crime investigations, and Major crime investigations, reflecting three of the four levels of the Professionalising Investigations Programme (PIP). PIP was first introduced in 2003 by the National Centre for Policing Excellence (NCPE), who were in operation between 2001-2007 and were responsible for the design and delivery of police and investigator training. They were later replaced by the NPIA who were subsequently replaced by the CoP. PIP is designed to establish a set of national benchmarked standards for effective and ethical investigations and is comprised of four levels of investigation. Firstly, volume crime is any crime that through its volume has an impact on the community (e.g., burglary, robbery, criminal damage). Next, serious and complex crimes are those which involve a greater deal of harm or loss to a victim (e.g., assaults with a weapon, substantial financial loss, sexual assaults). The next level, and the highest this thesis will look at, is major crimes, which involve serious violence and/or death (e.g., homicide, manslaughter). The final level, which this

thesis will not examine is strategic management of highly complex cases, which usually carry high levels of public or political scrutiny (College of Policing, 2018).

This thesis will provide a practitioner perspective by offering professionals from a UK Home Office Police service the opportunity to present their own views on how the NDM is used in investigations, whether it delivers a positive experience and if the model is an effective barrier to potential MoJ causing factors such as cognitive biases. This thesis utilised Naturalistic Decision-Making as a theoretical framework with which to view participant answers, to align itself with existing research that aims to understand how professional practitioners are making decisions. It is a decision-making approach that seeks to understand how professionals make decisions in high stress situations, characterised by incomplete and changing information, time pressure, serious consequences, etc., (Klein, 2008). Recognising the roles that experience and intuition play in police decision-making will aid for future developments in Evidence-Based Practice (EBP), defined as using best available evidence and research to support policing decisions, policies and practice (College of Policing, 2022). This research was limited by its small sample size due to the effects of COVID-19 restrictions; access was impeded and interviews had to be conducted via video-calling or telephone calls, and a number of officers were redeployed to other departments or were at home shielding under government advice.

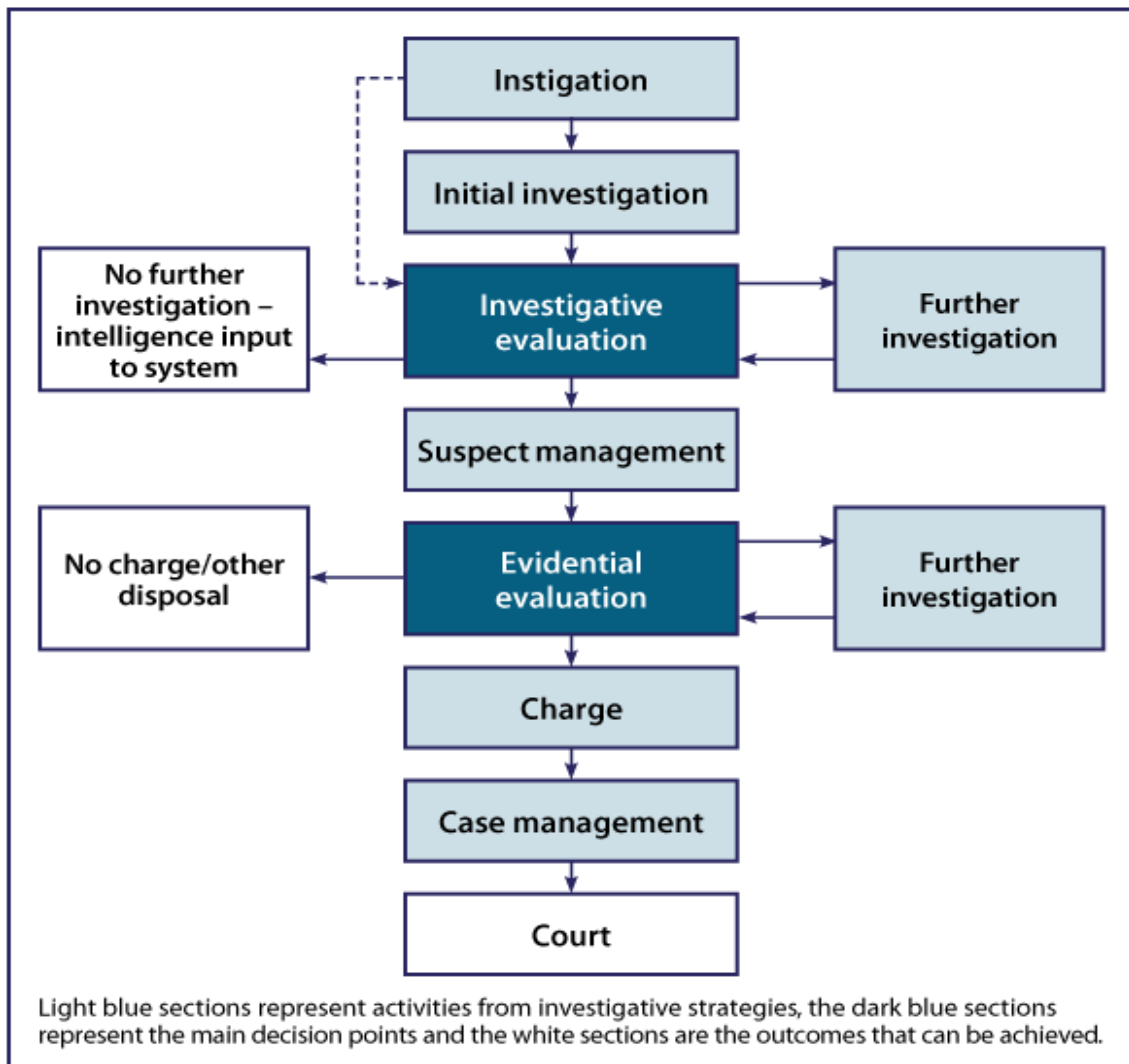
The following chapters begin by reviewing current literature relevant to criminal investigations. The methodology chapter discusses the chosen method of data collection and why semi-structured interviews were used to provide the best representation of practitioner perspectives. The captured data is then analysed in the findings chapter to identify themes on the use of the NDM in investigations which is then discussed in relation to the gaps in knowledge identified by the literature review. The conclusion will summarise the findings and how they can support future research into the relationship between the NDM and criminal investigations, finishing with recommendations in improving decision making guidance for practitioners.

Chapter 2: Literature Review

Introduction

When compared to other policing functions such as beat patrol or the reduction of crime, criminal investigations are relatively under researched (Brodeur, 2010; Westera *et al.*, 2014; Tong and O'Neill, 2020). There is even less research exploring decision making during investigations. Studies that do focus on decision making have tended to be descriptive and fail to identify what actually works (Fahsing, 2016). A possible explanation is that most knowledge of investigations and their procedures is developed through 'on-the-job' experience rather than classroom training or scientific guidance (Tong and O'Neill, 2020). Guidance for investigators such as Core Doctrine (ACPO, 2005), offers a process map of investigations (see Figure 2) and knowledge on key legislation and is to be used by practitioners throughout the course of an investigation (Hill, 2018). If practitioners are relying on occupational experience rather than utilising the available guidance, how can the police, an organisation known for operational independence (Rowe, 2020), assert that their developments in practice and policy are effective and appropriate? The current trend of police professionalisation is through higher education (Tong and Hallenberg, 2018) and advancements in police services developed from evidence-based research (Lumsden, 2017; O'Neill and Jones, 2018; Sutton, Cherney, White, and Clancey, 2021). The CoP promotes EBP through an emphasis on collaboration of police officers with academic researchers to identify 'what works' (Lumsden and Goode, 2018). However, the NDM is not supported by any collaborative empirical research (O'Neill, 2018).

Figure 2



Process Map of Investigations, taken from College of Policing (2019)

Whilst this thesis aims to provide a practitioner perspective of the use of the NDM during criminal investigations, this chapter will explore the literature around police decision-making in the UK before moving on to examine the development and implementation of the NDM. Subsequently, this chapter will explore the literature around the current perspectives on the applicability of the NDM to both policing as a whole and investigative decision-making, how Naturalistic Decision-Making offers an explanation for the way in which police officers make decisions and will finish by discussing the common pitfalls of investigations. These themes were chosen for examination to provide a background of how the NDM fits into police decision-making and highlight a contemporary perspective of the

science behind police decision-making through Naturalistic Decision-Making. The importance of discussing common pitfalls of investigations is as significant as ever in order to develop practice and prevent MoJs.

Police Decision-Making

Police decision-making in the UK is almost entirely unique, firstly for existing as a non-militarised service, and secondly for the necessity of a liberal democratic society that there is a balance between the liberty and security of the public (Kleinig, 1996). Officers have the use of their discretion when dealing with offenders, from deciding to offer words of advice or caution through to arrest, which is considered critical to promoting confidence and trust within the public (O'Neill, 2018). In a historical sense, police discretion has been described as key to the maintenance of police legitimacy, where it is argued that a rigid application of the law is of less significance than public peace (Scarman, 1981). In contemporary policing, discretion is essential as it allows the police to prioritise courses of action (Rowe, 2020), a necessity due to the dwindling of police numbers and resources under austerity (Rowe, 2007; Innes, 2010; Turnbull and Wass, 2015). Between 2010 and 2019, there was a drop of 14.3% in officer numbers across Home Office police services, from approximately 143,700 to 123,200 (Home Office, 2019). There was furthermore a drop in police spending of 14% between 2010-2015 due to a reduction in government grants (Disney and Simpson, 2017). There have been attempts in the past to limit police discretion, such as PACE 1984, which replaced an officer's power to stop and search under section 4 of the Vagrancy Act of 1824 with section 1 of PACE 1984. Section 4 of the Vagrancy Act was commonly known as the 'sus law' and allowed officers to stop and search individuals whom they suspected had the intention of committing a crime. It required two witnesses, which were usually the two officers on patrol. This 'sus law' was argued to have been the catalyst in causing the Brixton Riots of 1981, where the oppressive use against Black people by police officers caused tension in the relationship with the Black communities (Scarman, 1981). Section 1 of PACE 1984 affords officers the power to stop and search people and vehicles but now with the limitation that the power cannot be based on a personal characteristic, such as ethnicity, in attempt to prevent arguments of discrimination. However, recent statistics from the Home Office (2021) still show that Black people are stopped and

searched at a rate 7 times higher than White people, demonstrating that over-policing against minority ethnic groups still exists today. PACE 1984 was developed not solely to reduce the police's ability to exercise discretion but also to enshrine the rights of the citizens in statutory form. This was done through inclusion of Codes of Practice which police officers must comply with when exercising their powers, although they were not added until much later, between 2006-2010 (Home Office, 2020). For example, Codes of Practice within PACE 1984 detail procedures around stop and search, questioning of suspects, identification of suspects, and custody time limits.

Rowe (2007) explored the impact a 'positive arrest policy' had on constables from a UK police service, where officers were instructed by Senior Officers to arrest and intervene early in attempt to secure convictions and act as a deterrent to reduce the level of domestic abuse incidents. This policy removed the officer's ability to exercise discretion and contravened the wording of section 24 of PACE 1984, where constables have the power to arrest but may choose whether to do so based on the circumstances of the situation. Rowe argued that even though officers agreed that domestic abuse was abhorrent behaviour and required appropriate punishment, the inability to exercise their discretion with regards to arrest was unwelcome, reporting that arrests were sometimes against the wishes of the victim, or were a waste of time without sufficient support from other areas of the Criminal Justice System (CJS). This feedback from officers demonstrates the centrality of discretion to police decision making, where Rowe (2007) argued that the lack of choice meant that the professionalism and function of the constable were being eroded.

An unsuccessful attempt to measure and organise police discretion came in the form of the Discretionary Decision-Making Model (DDMM) (see Figure 3) by Lee (2000, as cited in Adams, 2014), where officers were instructed to follow a 7-step structure on reaching a judgement. The model encouraged officers to consider their knowledge of laws and available options in line with the Police Service values, to take action that builds trust within the public, and to review the action. Whilst the NDM has no mention of recording decisions, the DDMM explicitly instructs officers to record their decisions and actions. Whilst each step succeeded in measuring the processes and questions that officers internalise before reaching a conclusion, it was argued that the model's step-by-step structure unintentionally

removed the ability of an officer to exercise discretion (Adams, 2014). There is no further mention of the DDMM in literature, where it can be assumed its negative impact on police discretion prevented it from becoming widely accepted.

Figure 3



Discretionary Decision-Making Model, taken from Adams (2014)

Enter the NDM

The NDM differs from the DDMM in the sense that it is not a strict process that must be adhered to by officers, but rather a guide centred on ethical policing and allowing the officer discretion to choose whether or not to take action (Bryant and Bryant, 2016). Upon its introduction in 2012, it was positioned by ACPO (2012) as suitable for police officers, police staff, and senior leaders for all decisions, covering patrol, investigations, planned operations, etc. Although the NDM is an attempt at professionalising the police decision making process, there was very little empirical research behind its implementation. Before its introduction in 2012, the NDM was trialled by senior command officers in a pilot scheme,

where the feedback provided mixed results (Adams, 2014). Some senior officers felt a values-led decision-making tool was important as it would shape the unconscious thought processes to develop a default method of ethical policing, whilst others questioned why a values-led tool was necessary or felt it was significant only to the career development of future leaders. Although these sentiments were from only a handful of senior officers, it raised questions as to the effectiveness of the NDM at encouraging officers to consider values when making decisions, with Adams (2014) arguing that the model had insufficient signposting towards the policing values. At the time of Adams' research, the NDM's central core was the ACPO Statement of Mission and Values, the predecessor that was assimilated into the current Code of Ethics.

The NDM in relation to policing and investigative decision-making

A suggested success of the decision models such as the NDM and DDMM however, is the protection it affords officers who can demonstrate they have followed its steps and provided their rationale for decisions, as they will be supported by the CoP regardless of the outcome (CoP, 2014). The benefit of this is the reduction of decision inertia (Flanagan, 2008; Lee, 2009, as cited in Adams, 2014; CoP, 2014; Bryant and Bryant, 2016), defined by Power and Alison (2018) as the continuing deliberation on a choice to such an extent that no decision is made. Whilst it is not the decision maker's intention, the constant assessing of a situation and evaluation of potential outcomes can risk the safety of the public in critical incidents or hinder the gathering of evidence during investigations. The argument that decision inertia is reduced by a decision-making structure is supported by the research of Alison, Power, van den Heuvel, Humann, Palasinski and Crego (2015, p.315), but only to the extent that "clear strategic direction" supports decisive action as there has been no empirical research exploring the direct link between decision making models and the reduction of decision inertia. Adams (2014) furthermore highlights that despite the lack of engagement with the ethics aspect of the NDM, it does provide a singular holistic model that can be understood and used by officers at all levels, ensuring consistency across all areas of policing.

It has been argued that there is a need for specialised decision-making tools for areas of policing where decisions are more likely to be subjected to scrutiny and review, such as major crime investigations,

which, when seen as inadequate through poor policing, can be vilified in the national media (Alys, Massey and Tong, 2013; Adams, 2014; O'Neill, 2018). The first iteration of investigation guidance was the Murder Investigation Manual (MIM), released in 1998 and then updated in 2006, which provides a framework for successful investigation and possible actions that an SIO could take (Association of Chief Police Officers [ACPO], 2006; Stelfox, 2009). It was developed following the highly criticised investigation into the death of Stephen Lawrence (Macpherson, 1999) and the anticipated loss of knowledge and experience due to the expected retirement of SIOs, who had previously been the instructors and trainers of novice detectives (Brookman, 2005; Tong and Bowling, 2006; O'Neill, 2018). Like much of the police guidance available, the MIM was subjected to very little research, as was the CD, ACPO's guidance that highlighted points for key decision and reflection (ACPO, 2005). The CD furthermore describes an investigative mindset for detectives, where its principles of being openminded and analytical aim to assist investigators in conducting consistent and successful investigations. However, upon interviewing volume crime investigators, O'Neill (2011) found that not one participant explicitly mentioned the CD as a structure they follow during investigations, instead relying on common sense and experience. Although it was by no means a large-scale study with 64 participants from 6 sizeable forces from across England and Wales, it demonstrates a reluctance of detectives to consciously use guidance during investigations, as Ask and Fahsing (2018) argue that detectives prefer to focus on concrete, case specific information rather than the science behind decision making. As O'Neill's research focuses on volume crime investigations, it is unknown whether the CD held more influence in serious and complex investigations or major crime investigations. As O'Neill argues that investigators were not using the CD for decision making in 2011, this research aims to examine whether investigators are still relying on experience to inform decisions, or whether the NDM has been successfully incorporated into investigative decision-making.

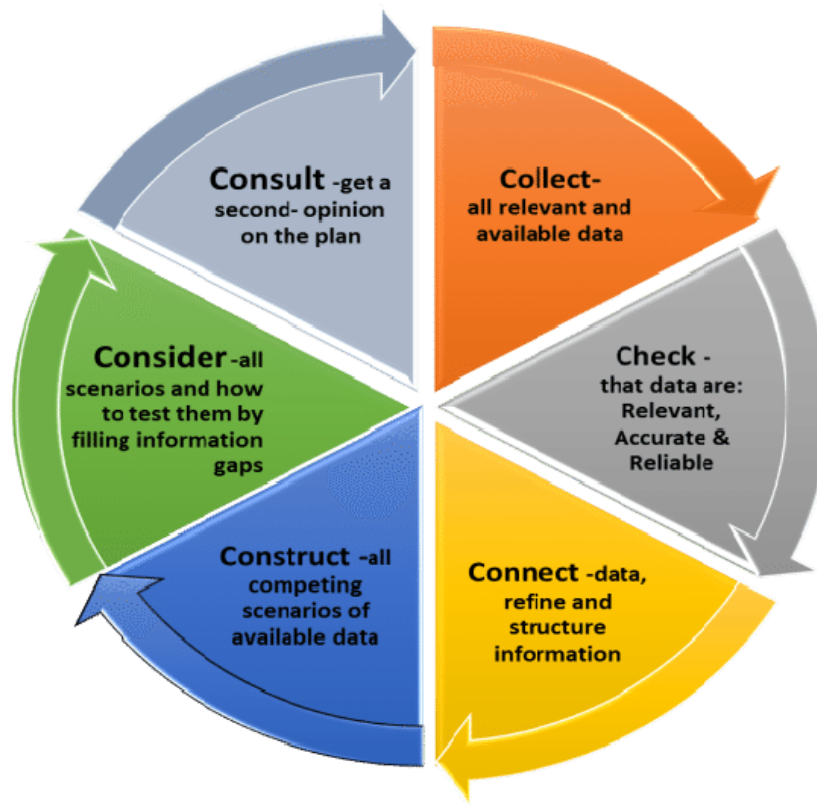
The guidance from the CD has now been incorporated into the Authorised Professional Practice (APP) which is a publicly available platform offering guidance and information on all policing activities (with some sensitive information unavailable), from investigations to armed response, intelligence management, covert policing, etc (CoP, 2019). The investigation model from CD is displayed in APP

as a structure available to detectives for different levels of investigation, where it also details what key stages are involved and what possible actions can be taken. It has however, along with the NDM, been criticised for its failure to encourage the generation and testing of hypotheses in investigations (Fahsing, 2016; O'Neill, 2018; Andersen, 2019), an aspect that is deemed essential to prevent MoJs (Ask and Granhag, 2005; Tong, Horvath and Bryant, 2009; Ask and Alison, 2010; Jones, 2016; Dando and Ormerod, 2017; Ask and Fahsing, 2018). Outside of the investigation model, APP does mention the importance of hypotheses during investigations (CoP, 2019), but only to the extent that they should be generated once all information has been gathered, which for investigations is impossible (Ask and Fahsing, 2018). Investigations that progress to the suspect management stage when using an ill-founded hypothesis based on incomplete information pose a threat to the security of the public and the effectiveness of the CJS (Ask and Granhag, 2005).

In response to the criticisms of ACPO's investigation process map from CD (ACPO, 2005), Fahsing (2014, as cited in Fahsing, 2016) developed the Investigative Cycle (see Figure 4), a model for criminal investigations focused on generating and testing hypotheses. The model is an extension of Dean's (2000) '5 Cs' stages (collect, check, consider, connect and construct) with the addition of a 6th C: consult. As well as promoting the seeking of information by answering the 6 Ws (who, what, when, where, why, and how), the cycle also encourages engaging with another detective to provide some form of scrutiny and review which, although an ideal feat, has varying degrees of success. Salet and Terpstra (2014) conducted research to measure this success by examining 26 cases of investigative reviews over 5 police services in the Netherlands and identified different approaches that investigators may take when reviewing an investigation other than their own. For example, the Devil's Advocate was the most effective approach of critical review, as the reviewer offers alternative hypotheses and challenges the decision-making of the initial investigation. The least effective approach is described as the Ritualist, who sees little benefit in reviews and offers only minor suggestions or criticisms. The approach that Salet and Terpstra (2014) identified as the Proceduralist focuses only on administrative aspects and ensuring the investigation meets organisation standards which, although beneficial, does very little to advance the progress of the investigation. This approach has been identified in more recent research

from both Allsop (2018) and Hill and O'Neill (2019), who describe SIO's feeling that investigative reviews focused on administrative duties.

Figure 4

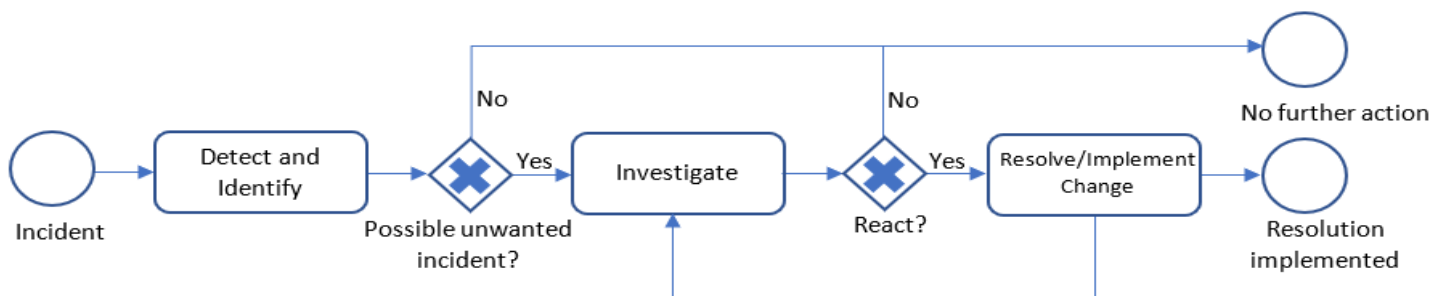


Fahsing's Investigative Cycle, taken from Fahsing (2016)

However, as highlighted by Andersen (2019), the Investigative Cycle omits the instigation of an investigation and fails to detail possible outcomes. In response to this, Andersen developed his own models that demonstrate the process of a criminal case and the steps to be taken during the investigation stage. The General Case Process model (see Figure 5) covers the incident and identification of whether an investigation is necessary, leading into the investigation itself and implementing a resolution such as prosecution or no further action. The Criminal Investigation Process model (see Figure 6) is a focus on the investigation stage, where it instructs users to generate hypotheses, collect information and data to then evaluate the hypotheses, before then feeding back into the resolve stage to implement a resolution. While Andersen's own models cover the beginning and end of an investigation, as well as exploring hypotheses, it differs from Fahsing's Investigative Cycle in one aspect; Fahsing's model

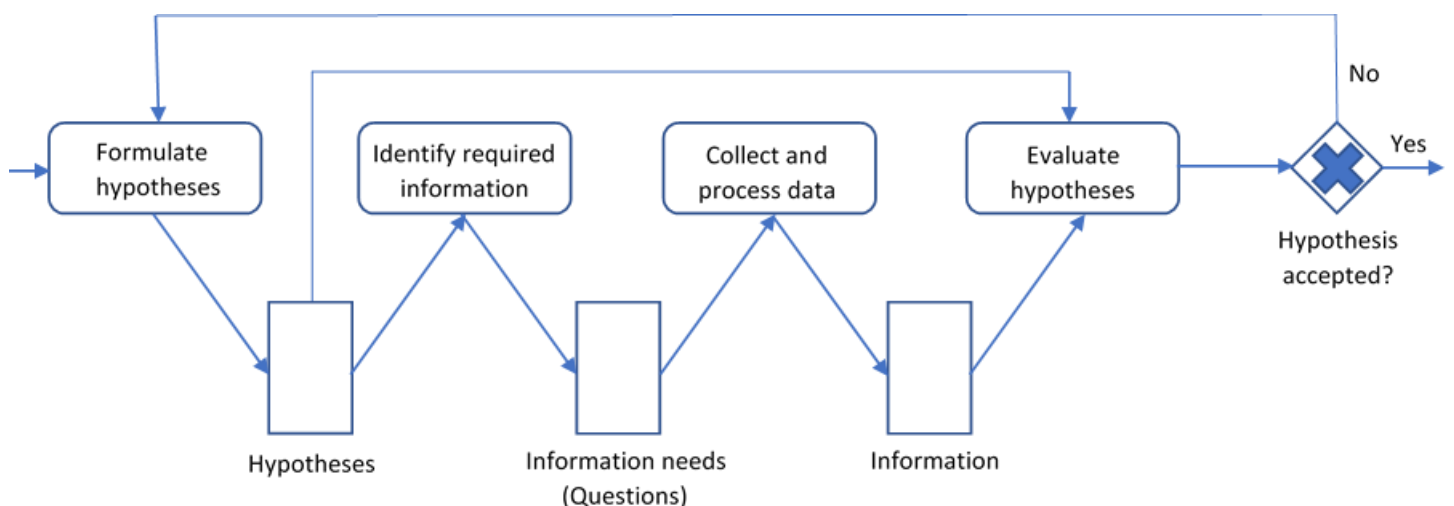
instructs users to collect data and information before generating hypotheses, whereas Andersen's model instructs users to generate hypotheses and then gather information and data. This has the potential to lead to confirmation bias, where Fahsing and Ask (2013) argue that once a hypothesis is developed, there can be a tendency to interpret data in favour of that theory. Although both Fahsing's and Andersen's models represent promising inclusions of the importance of hypotheses in policing literature, neither offer guidance on how to generate hypotheses, nor have they been subjected to empirical testing in a practical or academic setting.

Figure 5



Andersen's General Case Process Model, taken from Andersen (2019)

Figure 6



Andersen's Criminal Investigation Process Model, taken from Andersen (2019)

The Structured Hypothesis Development in Criminal Investigation (SHDCI) method is an approach developed in Norway that has been taught on a postgraduate course to police practitioners between 2016-2020. It is split into two main stages, the brainstorming phase and the articulation phase, and is designed to be an objective starting point for planning an investigation while safeguarding the presumption of innocence and preventing cognitive biases. In the brainstorming phase, officers are instructed to consider what has happened and who is involved, whilst also considering what more or less serious offences may have occurred and how this person involved may be innocent (Sunde, 2020). Having to then evidence this information during the articulation phase is likely to guard against biases such as tunnel vision and looks a promising method of producing objective and reasonable hypotheses. It must be said however, that the NDM fails to mention hypotheses, an omission that Dando and Ormerod (2017) argue will lead to procedural and formulaic decisions. Furthermore, it was not empirically researched with regard to criminal investigations before being recommended nationally, which is where this research hopes to fill a gap in knowledge.

The concept of police having values and being seen to demonstrate those values is key to maintaining public trust and confidence (Adams, 2014) but they need to be more established than something pinned to a noticeboard (Lucas, 1999 as cited in Adams, 2014). Ethical policing was integral to the image of the police in 1829 by Sir Robert Peel, whose focus was creating a protective service that operated with the acceptance and consent of the public to whom they were ultimately accountable (Reith, 1956; Lyman, 1964). It was the accountability of the police, or the lack thereof, during the UK phone hacking scandal which heavily influenced the presence of the central CoE to the NDM (Adams, 2014; Rowe, 2020). Allegations of police corruption from selling information, tipping off the media and accepting inappropriate hospitality called the Metropolitan Police Service's (MPS) reputation into disrepute, with then Commissioner Sir Bernard Hogan-Howe conceding that the relationship between the press and the police was abnormal and needed resetting (Leveson, 2012). Despite a healthy relationship between the press, police, and public being a cornerstone of a democracy and essential to an effective CJS (Leveson, 2012), the relationship between the press and the police has long been criticised and described as an affiliation contrary to democratically accountable policing (Chibnall, 1977; Mawby, 1999; 2002;

Colbran, 2017). Whilst the introduction of the CoE in 2014 acted as a symbol of police integrity and encouraged ethical policing, it is concerning that little research exists which shows that the police are consciously aware of their values and are considering them when carrying out their functions.

Lax (2014) studied the NDM in relation to values using questionnaires and semi-structured interviews with police officers and staff from the Learning and Development Department (LDD) from a single Police Service in the UK. Although the results only apply to that particular force, it was worrying that most participants could not describe the force's values unless a poster was in view and that values were only mentioned in one of the four document sets submitted for analysis, severely undermining the effectiveness of the NDM at supporting ethical decision making. This concern is furthered by the research of Adams (2014), whose interviews with senior police officers regarding values in police decision making uncovered that many had not considered what values were or how they translated into behaviour. Participants also highlighted that a cyclical decision model was likely to become a pointless administrative exercise, preventing outside the box thinking, echoing the argument of Fox (2014) that guidance documents restrict innovation, especially during investigations. Whilst these developments are clearly aimed at repositioning the police as an ethical and professional organisation, their limited success in improving ethical decision making only reiterates the argument of Waddington (2015), who surmised that the police have a history of claiming that lessons have been learned and their service is improving but often provide nothing more than empty rhetoric.

Developments and reforms in investigative practice

Another area explored by academic researchers is examples of when poor investigations have translated into positive change for the police, as MoJs are usually followed by a reform in police practice (Bryant, 2009; Bull, 2014). Following the Yorkshire Ripper murders from the mid-1970s to late 80s, the Byford (1981) report highlighted several failures during the police investigation, from mismanagement of information relating to suspects and interviews to the lack of a singular authoritative figure for the investigations. Byford's recommendations subsequently led to the development of the Major Incident Computer Application (MICA), later replaced by the HOLMES computer system, to computerise police information and provide an organised and methodical approach to major investigations. Although the

recommendations from the Byford report have guided major crime investigations decades later (Brain, 2010) and the technological developments have been invaluable to investigators (Stelfox, 2009), there was little change or guidance that focused on decision making during investigations (Ask and Fahsing, 2018).

Another successful police reform followed the 1993 Royal Commission on Criminal Justice (RCCJ), which recommended several improvements for police decision-making: policy files for major investigations, documentation of lines of enquiry and critical decisions, and the external scrutiny of ongoing cases (Runciman, 1993). These changes mainly come in the form of record keeping for decisions, which are arguably more tailored towards accountability rather than improving decision-making, as research from Spanoudaki, Ioannou, Synott, Tzani-Pepelasi and Pylarinou (2019) identified that officers in their study felt that current practices of record keeping are not aiding officers in recalling specific information or details of a case. Furthermore, the inadequate record keeping identified by Macpherson (1999) in the investigation into the death of Stephen Lawrence serves as an example of how poorly organisational policy changes can translate into effective policing when record keeping is left to the discretion of an officer. Detective training then underwent an overhaul following recommendations from the RCCJ, where the PIP established a solid body of knowledge on investigative practice and provided a framework for the development of investigators (Flanagan, 2008; McGrory and Treacy, 2012; CoP, 2017). However, upon analysis of reports from the Independent Office of Police Complaints (IOPC), O'Neill (2018) found that inadequate recording of rationale and poor note taking were still present in investigations, with the failings being highlighted in 10 out of 21 reports between 2004-09 and again in 7 out of 41 reports between 2010-15. What this demonstrates is what Maguire and Norris (1994) call a return to business as usual, with officers reverting to existing methods of investigation once training is finished. This again echoes the argument of Waddington (2015), where police reforms in training are successful at identifying the underlying causes of poor investigations but are ineffective until the values of police culture are addressed. It may also be due to the ineffectiveness of decision logs, as Dando and Ormerod (2017) found that officers are hesitant to note down something which may later hinder the prosecution or may cause embarrassment if a theory turns out to be incorrect.

Within O'Neill's (2018) research however, it does not explain which failings were applicable to which types of investigations, nor does it explain what level of experience the individual officers had. Without excusing the actions of the officers, it is not possible to tell how far they had been trained under PIP or how much training they had been exposed to which emphasised the importance of record keeping.

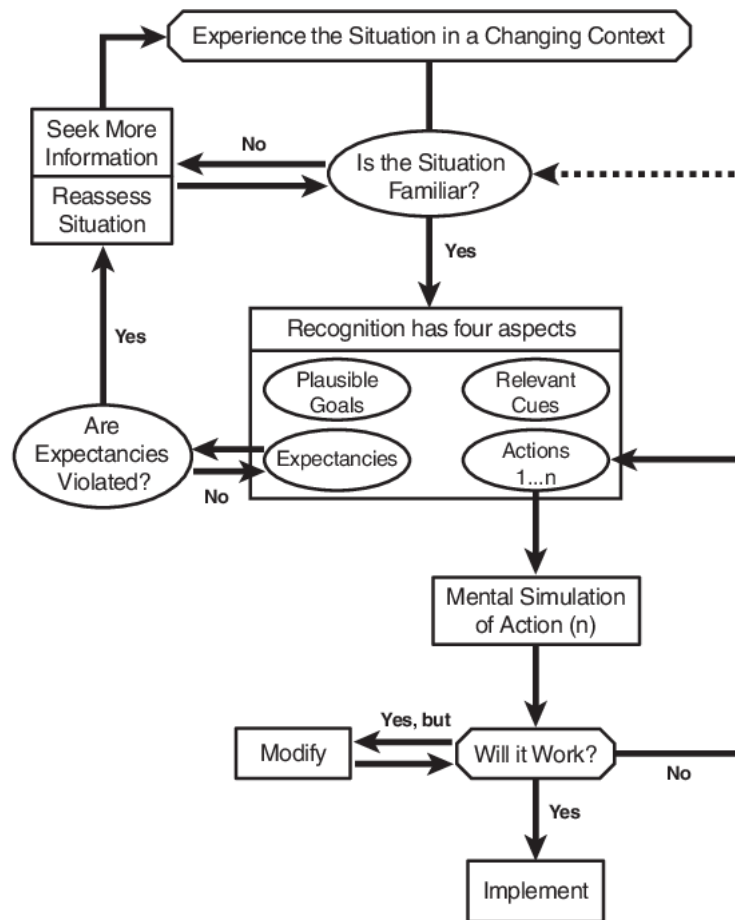
There is little research behind the implementation of the PIP (James and Mills, 2012; O'Neill, 2018) but its effectiveness has been observed when compared to detectives from abroad. Fahsing and Ask (2016) compared English officers and Norwegian officers to evaluate the number of actions and hypotheses generated from fictitious events. For experienced officers, they had to have had 10 years of experience as a detective and be in charge of major crime investigations, with the English experienced officers also needing to be PIP level 3 (SIO). Novice officers had to have had less than 2 years of experience and be a patrolling officer. In all areas of the research, the English experienced detectives outperformed their own novice colleagues and both their foreign counterparts. Their research was later extended by Valberg (2016), who compared the statistical results to Icelandic novices and experienced detectives, who again found that the English detectives who had trained through the first 3 levels of PIP were the strongest performers. This argument is supported by the research of Dando and Ormerod (2017) who analysed 60 decision logs from 2 police services from E&W in order to discover the difference in hypotheses generation and testing between experienced and inexperienced detectives. Their results highlighted that experienced detectives develop more theories at the beginning of an investigation when compared to the inexperienced officers (2.84 v 1.38), signifying experience and training support the ability to consider alternative hypotheses. What's more, participants with less than 3 years of experience tested more hypotheses against available evidence than their experienced colleagues (3.96 v 3.09), suggesting a focus on a singular theory in the early stages of an investigation. However, the study acknowledged that experienced detectives often document new evidence sources towards the end of an investigation in what they term 'withholding the obvious', which Dando and Ormerod interpreted to be a final challenge to hypotheses before charging someone with an offence (Dando and Ormerod, 2017, p.1212). Despite these studies succeeding in identifying the role experience plays in generating hypotheses, no study goes into any detail of how the participants developed and

tested their theories, leaving it unanswered as to whether the investigators relied on a specific model of decision making or whether they relied on their own experiences and training.

The role of experience in police decision-making can be explained by the arguments of Naturalistic Decision-Making, an approach that favours an individual's experience in informing their decisions. For example, police officers face repeated similar situations e.g., burglaries, domestic assaults, homicides. When these situations are unfamiliar to an officer, they analyse the environment and scenario to develop their own interpretation, where they then use cues such as visual and audio stimuli, organisation goals and norms, typical reactions etc., to develop intuitive patterns. Upon next encountering a similar scenario, officers then recognise these patterns and have a primed decision and action to employ that they know have previously worked (Klein, 2008). This process is demonstrated in the Recognition Primed-Decision Model (RPDM) (see Figure 7), first introduced by Klein (1993).

The RPDM describes the mental processes its user goes through when dealing with a scenario; firstly, identifying whether the situation is familiar based on relevant cues, and if so, implementing previously used actions which are known to be successful in achieving the goal. The goals are often defined by policies and doctrine (Klein, 1993), for example, police goals are regularly the identification and arrest of suspects, enter and search premises, preserve life and limb of the public. Once the situation is identified as familiar, the user develops expectations of how it will evolve; if these expectation differ or are not met, the scenario is then reassessed and these changes are taken into consideration for next time a similar situation is faced. The model also acknowledges that just because the current scenario is similar to a previous scenario, it doesn't necessarily mean that the same actions will be effective, and it therefore allows for modification of actions before implementation (Klein, 1993).

Figure 7



Recognition Primed-Decision Model, taken from Klein (2021)

A review of literature surrounding the RPDM approach to police decision-making suggests it carries a number of benefits, noticeably that it is more suitable to decision-making in emergency service scenarios than existing decision-making approaches because of the reliance on its user being able to recognise familiar situations (Lintern, 2010). Firstly, potential actions are evaluated serially rather than concurrently, reducing the likelihood of decision inertia and cognitive overload. The focus on identifying a workable option rather than the best option improves the speed at which a judgement is reached, a necessity in fast-paced, dynamic policing situations. Furthermore, an element of Naturalistic Decision-Making recognises that individuals do not simply accept actions as they are, but rather modify them depending on the current situation and work to improve their efficacy (Klein, 2008). Whilst this approach promises rapid, successful actions from experienced individuals, this method of thinking does

contradict the NDM: how can intuitively choosing an option in seconds be classified as a model that relies on analytical cognitive processes?

Pitfalls of investigations

A further area that attracted academic interest in the field is the importance of understanding how detectives are generating and testing theories during investigations because of how vital they are to limit the influence of cognitive biases, one of the biggest undermining factors in investigative decision-making and causes of MoJs (Ask and Granhag, 2005; Wastell, Weeks, Wearing and Duncan, 2012; CoP, 2019; Rossmo, 2016; Valberg, 2016; Dando and Ormerod, 2017; Ask and Fahsing, 2018; O'Neill, 2018; Rassin, 2018; Andersen, 2019). There is no universal definition of a cognitive bias but is generally accepted that the term refers to a decision or belief that carries prejudice or favour towards a certain outcome (Cummins and Nistico, 2001). They arise due to the imperfect way in which the human mind operates and subjectively interprets the world around it, applying more weight to certain pieces of information over others (Rossmo, 2009). Stanovich and West (2000) have argued that there are two distinguishable systems within the human mind, each using heuristics differently to understand information and formulate actions. A heuristic can be defined as a shortcut for decision making, whereby a decision is made by ignoring some of the available information and focusing on only a few relevant indicators (Marewski and Gigerenzer, 2022). The first cognitive process, given the generic label of 'system 1', is mainly performed subconsciously and is quick, effortless, and involuntary. It is therefore difficult to explicitly recognise the heuristics involved at this stage and subsequently difficult to identify the biases and misinterpretations that occur (Hammond, Keeney and Raiffa, 1998). It is the impressions made by system 1 that are then evaluated and analysed by 'system 2', the cognitive process that requires concentration and attention in order to construct an order of thoughts and where beliefs and choices are made (Stanovich and West, 2000; Kahneman, 2011). Biases developed by the initial system 1 reaction can only be identified from careful monitoring from system 2 which becomes increasingly difficult when another instance is demanding attention.

Whereas typical system 1 definitions of intuition fall into the heuristics and bias community that focus on innate heuristics based on statistical value (i.e., repeated phenomena), Naturalistic Decision-Making

explains intuition as patterns developed from experience that enables individuals to make rapid decisions without comparing options (Klein, 2015). It has little interest in cognitive heuristics and places more value in insight and expertise developed through experience in dynamic situations rather than laboratory settings.

With regard to criminal investigation, one of the more common cognitive biases found in decision making is confirmation bias (Evans, 1989; Ask and Granhag, 2005; Rossmo, 2009), defined by Nickerson (1998) as the focus on inculpatory evidence or information that supports an existing hypothesis. This definition is then extended by Ask and Fahsing (2018) who identify two different types of confirmation bias: the seeking of evidence that supports a current hypothesis and the ignoring of evidence that contradicts it, and the interpretation of ambiguous evidence in favour of the current hypothesis. As highlighted by O'Neill (2018) the effect of confirmation bias is found within the research of Fahsing and Ask (2013), where detectives from Norway and England were asked at what point an investigation moves from suspect identification stage to suspect verification stage. The main responses were arrests or charges of a suspect as well as certain hypotheses or lines of enquiry suggesting that once a theory is developed, an investigator's focus is to then prove this theory. This argument is later supported by Fahsing and Ask (2016), who measured the hypotheses and actions developed by English and Norwegian detectives both before and after a tipping point was introduced. Their results show that a tipping point, such as arrest or charge of a suspect, leads to a decline in the number of hypotheses developed but an increase in the amount of actions performed, where it could be suggested other plausible lines of enquiry are left under investigated in favour of proving the winning hypothesis. Interestingly however, the experienced English detectives increased the amount of hypotheses developed after a tipping point, suggesting experience plays a role in the prevention of confirmation bias. Whilst this was a sizeable study with 124 participants and the international aspect provided an effective comparison of different training, the differences in the statistical results were not significant enough to provide a definitive conclusion as to how strong experience and training are at preventing confirmation bias, although the area should be further researched both domestically and abroad.

Beyond the experience and training of detectives, there are a number of elements of police culture that contribute to the level of confirmation bias during investigations. Ask and Alison (2010) argue that time pressure plays a role in determining the influence of confirmation bias, where investigators often manage several investigations simultaneously and run the risk of foregoing thoroughness for the sake of efficiency. This can be done through the process of increased selective processing of information, or what Edland and Svenson (1993) term 'filtering', defined as applying more weight to attributes that would have otherwise received equal consideration in a non-time sensitive situation. This is later supported by the research of Ask and Granhag (2007b) who analysed the effect that time pressure had on the perceptions of Swedish investigators with regard to the guilt of a suspect in a fictional vignette. Whilst they concluded that detectives were more inclined to apply weight unequally to a singular attribute, such as witness ability to recall the event or alibi of a suspect, they also found that detectives were less likely to review their decisions or arguments when under increased time pressure. Participants stated that they viewed the time it would take to complete this task as costly and instead favoured their initial judgement of guilt due an increased need for closure. This concept is later supported by Kim, Allison and Christiansen (2020) who found that high time pressure on a sample of 133 Korean detectives resulted in a higher need for closure and decreased both the quantity and quality of hypotheses generated. Whilst both groups of detectives ($N=66$ high time pressure vs $N=67$ low time pressure) received the same amount of time to solve the fictional scenario, it was the expectation of running out of time that the authors argue resulted in cognitive overload and the replacing of traditional methods with mental shortcuts to reduce the negative effect that time pressure had on quality of hypotheses. Interestingly, they furthermore highlight that more experienced detectives were more resistant to the effect of time pressure and were still able to produce a high number of hypotheses with a high standard of quality. However, this research does not go into any specifics of how the detectives generated these hypotheses, so it is difficult to judge how far decision models have any success at reducing the impact of time pressure.

Furthermore, it has been argued that the occupational norms of efficiency and a results orientated environment are causes of confirmation bias (Ask and Alison, 2010), where Ask, Granhag and Rebelius

(2011) highlight that the main measurement of efficiency in investigations is clearance rates, placing a pressure on detectives to provide rapid conclusive results. Consequently, Mortimer and Shepherd (1999) identified a tendency of the police to have a frame of mind where they assume the guilt of offenders which then influences the way in which interviews are conducted. Any information that the offender gives is potentially then interpreted by the detective into evidence that supports their initial belief of the offender's guilt, detailed in Rosenthal and Jacobson (1968), and described as a self-fulfilling prophecy (Kassin, Goldstein and Savitsky, 2003). This argument comes even after the advent and implementation of the PEACE model of interviewing in the early 1990s, which stands for the different stages of an interview: Planning and preparation, Engage and explain, Account, clarify and challenge, Closure and Evaluate. It was introduced to provide an ethical form of interviewing following a string of police interviews that received negative attention in the media (see Guildford 4, Birmingham 6) and is designed to obtain information or an account of a suspect or witness to an event.

Irving's (1980) study conducted research into police questioning and found that half of those being interviewed showed signs of mental distress during the interview which went unaddressed by the police and that in 75% of cases analysed, the interviewer used manipulation or persuasive techniques in order to encourage a confession from the suspect. Although Irving's research was conducted before the interview safeguards introduced in PACE 1984, Baldwin (1993) furthermore identified several shortcomings after the implementation of these safeguards, after analysis of 600 recorded interview tapes demonstrated amongst failings such as incompetent interviewers (lack of planning and structure) and poor interview techniques (loss of control of interview or failure to establish facts), the assumption of guilt was shown through repetitive leading questions in 89 of 600 interviews (14.8%). Although only a small portion of the total number of interviews analysed, this figure represents the presence of confirmation bias in detectives despite the existence of a model designed to remove such biases. This is also supported by the later research of Daniell (1999) who evaluated 7 police interviews and concluded that detectives still considered interviews a process for proving for what they already felt to be true.

As well as an assumptive mindset, it has been suggested that the emotions of a detective also influence their cognitive decision making due to the high-stress situations they regularly encounter e.g., victimisation, deception, violence, moral violations (Ask and Granhag, 2007a; Ask and Alison, 2010). Ask and Granhag (2007a) conducted research with 61 Swedish investigators with an average length of experience of 23 years, with none of the participants having less than 10 years of experience. Their aim was to identify any differences in investigative judgements by inducing either anger or sadness in the participants when presenting them with witness statements about a fictional situation and then measuring the feelings of guilt against a suspect. Their results found that participants who were induced with sadness felt significantly more convinced of a suspect's guilt and perceived the evidence as more incriminating than angry participants, demonstrating the influence emotions have on decision making by investigators. However, a recent study by Hopps (2019) interviewed 7 UK police detectives contradicts this argument, where participants claimed their emotions did not factor into the cognitive decision-making during investigations. Obviously a small sample, these results may also be a representation of the expected professionalism and stoicism of detectives rather than fact.

A so-called symptom of confirmation bias, identified by Rossmo (2016), is that of 'group think', where the aforementioned elements of police culture create an environment where individuals may become reluctant to challenge the dominant theory for fear of being seen as disloyal or as argued by Ask and Granhag (2005), fear of embarrassment if counter theories are found to be incorrect. Whilst this concept does not directly cause confirmation bias, it enables it and does nothing to reduce its influences due to the removal of critical thinking and objectivity within a group. The issue here is that knowledge of biases is not enough to reduce their impact (Gilovich, Griffin and Kahneman, 2002) and it is argued that there needs to be constant active counter measures in order to limit the impact confirmation bias has on the direction of an investigation and the hypotheses that are generated (Ericsson, Prietula and Cokely, 2007).

Although the obvious method of overcoming cognitive biases such as confirmation bias and tunnel vision would be the use of hypotheses (Ask and Granhag, 2005), this chapter has explored how biases can still influence the generation of hypotheses without appropriate external countermeasures. One

suggested method is offered by Rossmo (2016), who developed his own ‘rethinking protocol’, which he argues differs from existing protocols that seek to discover new information, which may be interpreted subjectively by an investigator, but rather to rethink existing evidence to identify whether it supports or disproves the current theory. It consists of 4 stages: identifying and evaluating evidence; the evidence is then interpreted both individually and collectively; inferences from the evidence are then organised into a story of events; the remaining hypotheses are then reassessed against the available evidence. There is an overarching principle at all times that investigators should be seeking to disprove theories rather than interpret the evidence into supporting their theory, arguably allowing for more critical decision making at this stage of an investigation. This concept also ensures that an investigation remains evidence based rather suspect based, which is when the majority of decision-making errors can be identified (Fahsing and Ask, 2013; O’Neill, 2018). This protocol, although promising, has not been subjected to empirical testing so its ability to reduce confirmation bias is unknown, nonetheless it goes into far greater details than the NDM at exploring how investigations can be continually reviewed.

Another measure designed to combat cognitive biases during investigations is Rassin’s (2018) ‘Pen and Paper tool’. Here, investigators list known information and evidence about the case, then produce 2 or more theories and numerically rate each piece of evidence or information on how well it supports the chosen theories, allowing for individual evaluation rather than judging the evidence as a collective. In Rassin’s study, a total of 218 undergraduates were presented with a fictional vignette and split into 3 groups, one was given a singular theory, another an alternative scenario and the third instructed to use the pen and paper tool. Participants then rated how strongly they felt the fictional suspects were guilty and whether they would convict based on the given information. There was a significant difference in the results, with only 5 of those having used the pen and paper tool convicting compared to 36 and 22 from those with a singular theory and those given an alternative scenario. The overall guilt estimate was also a score of 32.5 compared to 60.76 and 54.34, demonstrating that as well as considering an alternative hypothesis, individual evaluation of each piece of evidence also reduces the level of confirmation bias and the assumptions of guilt to a greater extent. Although these results are derived from undergraduate students, the study was replicated with a sample of 45 professionals (11 police

officers, 13 district attorneys and 21 criminal trial judges). The results again show that the pen paper tool reduces feelings of guilt in suspects to a significant extent, with 22 convicting participants before using the tool and only 7 afterwards. While the tool has been shown to be an effective method of reducing confirmation bias in investigators, its biggest drawback is that it does not provide any guidance on how the original hypotheses are to be developed and is only effective once these have been conceived. However, being used in conjunction with Rossmo's (2016) rethinking protocol would ensure that the impact of cognitive biases and prejudice is limited at both stages of hypothesis generation and then hypothesis testing.

Another measure, as suggested by Ask and Fahsing (2018), is applying the mathematical and scientific procedure of bifurcation, where a process branches and splits into two parts. Applied to investigations, one investigator would generate hypotheses whilst a different investigator would test them against available information and evidence. Utilising this method is likely to increase the critical analysis and evaluation of the theory because, as a detective is biased towards their own hypotheses (Nickerson, 1998; Wastell *et al.*, 2012), another having oversight removes the risk of a self-fulfilling prophecy. Although not to the same degree, the 28-day review process in the UK involves an independent detective reviewing undetected homicides and stranger rapes after 28 days, in attempt to ensure it meets the approved standards, was carried out objectively and that no opportunities have been missed with regards to gaps in knowledge or lines of enquiry (Sawers, 2008; ACPO, 2012). Despite the reduction of cognitive biases not being explicitly mentioned in the ACPO definition, it can be safely assumed that the analysis of existing lines of enquiry and hypotheses is designed to identify and remove any subjectively created theories.

Summary

This chapter has shown that there is little research into the NDM. Past research has focused on the role of ethics and how the police values were utilised in one Police Service, with more recent research starting to question its applicability to investigations. Criticisms of the model have been made without significant research and most importantly without considering the perspectives of practitioners. It would therefore be useful to understand how the model is being used by professionals in the present day.

Examination of cognitive decision making raised the question as to whether an analytical model such as the NDM can be used intuitively by its users or whether they retroactively use the model to justify actions. Arguments that the model is more appropriate for individual decisions rather the complexity and number of decisions required in an investigations necessitates a look at whether practitioners value the model more whilst responding to incidents or during investigations.

Chapter 3: Methodology

Introduction

Kothari (2004, p.8) defines a methodology as a “science of studying how research is done scientifically”, emphasising that it is more than just the researcher knowing their methods or techniques, but also the logic behind them. It is a process of evaluation to uncover which methods are most relevant in answering the research problem, as well as describing techniques not suited to the research and why. Not only does this demonstrate the knowledge of the researcher and the validity behind chosen research methods, but it also offers the reader insight into the structure and design of the research, allowing for easier replication. Firstly, the research design will be outlined to provide context for the research, with the chosen design being a qualitative study into the effectiveness of the NDM in investigative decision-making by professionals from one Police service in England and Wales, which will also provide a first look into the model in practice and offer detectives a chance to voice their perspectives of its applicability to the investigations they conduct. A qualitative design allows for greater depth and understanding to be extrapolated from the research in studies where the focus is on valuing perspectives of the participants in a specific context, in this instance their opinions of the NDM in use. Participants were provided by the Police Service and access was granted to a select number of officers on a voluntary basis, with a request for different lengths of service and different PIP levels to explore variation in attitudes. Once the interviews were completed, the transcriptions were thematically analysed to recognise themes arising from multiple interviews that were original and those that were identified in the literature review. Due to the voluntary basis of the interviews, informed consent and anonymity were paramount, thus this research was carried out with ethical principles outlined to participants prior to engagement.

Research questions

There is a worrying lack of research into the NDM that this report could draw upon, yet an exploration of literature around investigations and decision-making has identified that police decision making is considered to be intuitive and fast-paced. This contradicts the purpose of the NDM, which positions itself as a model where each stage requires conscious thought before a decision is made.

Most importantly, no research has been conducted that takes into consideration the perspectives of practitioners of the model in use at any level. To increase the extent to which future studies can extract useful and relevant research from this report, broad research questions were developed in the hopes to provide a foundation for future arguments. To that end, this research explores the following research questions:

1. What are practitioner perceptions of the model?
2. Are practitioners using the NDM intuitively or consciously?
3. How does practitioner utilisation of the NDM vary between different PIP levels?
4. How does practitioner utilisation of the NDM vary between investigation and response?

Research Design

A research design is a blueprint for how the research will be collected, measure and analysed (Kothari, 2004) and is a method of translating research questions into research projects (Robson and McCartan, 2016). In a simplified model, Robson and McCartan (2016) outline the key components to a research design, starting with the purpose, the *raison d'être* of the study and what it is trying to achieve, whether to assess the effectiveness of something or in the hope of implementing change. Following this, the conceptual framework describes what is currently known on the area of research and identifies what gaps exist, usually through a literature review. It is designed to justify why the research must be conducted and what contributions it can make to existing literature (Varpio, Paradis, Uijtdehaage and Young, 2020). Next, and central to the model, are the research questions, emphasising that all aspects of the research are expected to feed back to these questions in attempt to provide a solution. Many considerations must be made when developing the questions that underpin a body of research, namely what needs to be answered and what can feasibly be asked given time constraints, access to participants and resources. Once these have been identified, the researcher can begin to explore which methods or techniques are best suited to answer these questions, from collection and analysis to presentation of the results. Lastly, sampling procedures detail who the researcher wishes to gather the data from, down to when and where it will be gathered and how they will strike a balance between being selective about what is gathered while still having enough data to validate the findings.

This research has taken a phenomenological approach, defined by Guillen (2018) as a focus on lived experiences by a participant or participants who share a close relationship to the subject matter. The analysis of this collective experience offers greater explanation of the phenomenon (Creswell, 2013), which in turn is used to fuel future research or as a foundation for policy change. For the purposes of this research, the participants whose shared experience will be explored are professionals from a E&W Police service, where the phenomenon is their personal perspectives on how the NDM is utilised throughout their investigative decision making. There are differences in opinion regarding the necessary number of participants in a phenomenological study. Boyd (2001) argues between 2 and 10 participants is necessary, Creswell (1998) similarly argues that up to 10 participants is sufficient provided the interviews are long and in depth, while Polkinghorne (1989, cited in Creswell 2013) recommends between 5 and 25 participants. Due to the participants of this research being detectives varying across PIP levels 1, 2 and 3, a sample size of 25 was desired to allow for greater understanding and identification in variations in attitudes across the different levels. However, due to the effects of COVID-19, the access to participants was hindered and the resulting number of participants was 15.

Theoretical framework

While Ask and Fahsing (2018) believe police officers are not concerned with the nature of decision making and instead rely on case specific information in investigations, a great deal of research exists that studies the science behind decision making, tending to focus on exploring the relationship between the implicit and the explicit, which are commonly termed system 1 and system 2. System 1 refers to thinking fuelled by automatic, effortless, unconscious processing, while system 2 refers thinking that is conscious, effortful, and controlled (Stanovich and West, 2000; Kahneman, 2011). However, there is significant research arguing that both systems work in tandem using the same judgements to reach a desired outcome within the time frame that the individual has (Evans, 2008; Kruglanski, Erb, Pierro, Mannetti and Chun, 2006; Kruglanski and Orehek, 2007; Kruglanski and Gigerenzer, 2011), especially within high stress complex situations (Keren and Schul, 2009). This combination into a unified model is commonly termed the dual process theory and has been applied to police decision making research, especially with regards to use of force and emotions (Dror, I, 2007; Brown and Daus, 2015; Fyfe, 2015;

Hine, Porter, Westera, Alpert and Allen, 2018). This approach was initially considered as a lens to view the practitioner perspectives of the NDM until criticisms of the dual process model were identified.

Evans (2007; 2012) and Norman, Monteriro, Sherbino, Ilgen, Schmidt and Mamede (2017) highlight that many dual process models adopt the definitions of systems 1 and 2 and accept them as concrete. Whilst the common trend is that system 1 provides fast and accurate decisions (Cohen, 1981), it must be accepted that the same system can lead to errors and biases (Hine, et *al.*, 2018), where Fyfe's (2015) concept of 'split-second syndrome' inhibits cognitive functioning. On the other hand, system 2 is characterised as using rational, analytical, rule-based thinking that provides correct and optimum decisions (Hine, et *al.*, 2018), although Allen (2011) argues that this can act as an obstacle to rapid decision making in complex tasks. Furthermore, the heavy burden that system 2 places on an individual's cognitive ability is argued to lead to failures in detecting and correcting errors and biases (Norman, et *al.*, 2017).

Instead of using a dual process model as a theoretical lens for this study, it instead adopted the more recently developed approach that attempts to understand police decision making in a dynamic, natural setting: naturalistic decision making (Klein, 2008). It acknowledges internal and external factors that influence an officer's decision making, namely complex and shifting goals, time pressure, uncertainty, and high stakes. The RPDM furthermore takes a knowledge-based stance and acknowledges that the analytical rules used by system 2 are often developed on past experiences created by the fast responses from system 1. These experiences are translated into patterns that are then intuitively selected by decision makers. Due to this, Hine, et *al.* (2018) argue that novice officers do not have the experiences necessary to rely on intuitive decision making and take a more analytical approach to situations, and that the experience gained throughout one's careers leads to faster and more accurate decisions. It is therefore expected that participants in this study will detail unconscious use of the NDM at higher levels of PIP and with more years in service in comparison to PIP 1 officers who are relatively new to response and investigations. Using Naturalistic Decision Making as a theoretical perspective for this research aligns the study with existing research in the field and offers an insight into the role experiences play in relation to the utilisation of a decision-making model.

Research methods

Data collection

It is generally accepted in academia that there are three types of data collection used in research: qualitative, quantitative, and mixed methods (Kalaian, 2008). Qualitative research involves the study of participants in their natural environment with the goal of understanding the reason behind an impact a specific phenomenon has on their social world, or simply how it is interpreted (Denzin and Lincoln, 2011; Aspers and Corte, 2019). On the other hand, quantitative research involves the study of criterion of the phenomenon that can be measured and allow for statistical analysis (Holton and Burnett, 2005) which, although effective at identify trends, makes it difficult to demonstrate the reason behind such trends (Goertzen, 2017). Mixed method approaches are the combination of both forms of research (O’Cathian, Murphy and Nicholl, 2007); the quantitative aspect identifies relationships and associations from numerical data while the qualitative feature explores the motivations behind those relationships and provides context. Each form of research was considered for this study with a view for finding the most applicable given the purpose and the limitations.

While both qualitative and quantitative research share the same goal, of understanding the world, their methods and presentation of that understanding differ (Becker, 1966). Quantitative research was considered initially due to its general acceptance by readers as being credible, rational, and logical, where the researcher is seen as objective and trustworthy (Pierce, 2008). Its ability to gather large samples of a population provides a quicker representation of a phenomenon without being limited by the need for face-to-face interactions that are usually seen in qualitative methods (Pierce, 2008). In general, quantitative research allows for an understanding of demographics of a population, for example the measuring of how many customers use a service, the attitudes towards a certain phenomenon using a scale e.g., extremely disagree to extremely agree, demonstrate returns on investment and the numerical differences in shopping trends over time (Goertzen, 2017). It utilises methods such as surveys and questionnaires and seeks out correlations in the dataset (Creswell, 2013). It tends to represent this data as percentages, proportions, and frequencies, which is why it is usually favoured in business models where the statistical data is understood by shareholders (Basias and Pollalis, 2018) or by media outlets, where numbers are used for emphasising the risk or danger to audiences as ‘hard hitting’ news (Pierce,

2008). Despite this, it is argued that quantitative research does not explain the motivations behind the decisions of its sample population and when used in social research, is seen as too amoral and clinical to understand the complex social world (Pierce, 2008; Goertzen, 2017). As the nature of this research is to understand the decision-making process of detectives and how the NDM is utilised, it was deemed numerical data would not sufficiently understand the experiences of participants and showcase the underlying themes and relationships that exist.

On the other hand, qualitative research, is an interpretive approach of understanding phenomena in terms of the meaning that people assign to them (Aspers and Corte, 2019). It is more applicable to social contexts due to its goal of understanding a specific event or phenomenon and displaying its results in a way that explain the complexities of the social world (Creswell, 2013). The focus on verbal communication allows the researcher to see through the interpretative lens of the participants and understand their perspectives to a greater degree than quantitative research permits (Pierce, 2008). It achieves this by preferring conversationalist methods such as focus groups and interviews, or even in-depth analysis of historic materials which provide a comprehensive account of an event (Aspers and Corte, 2019). Another strength of qualitative research is that it can bring minorities or groups that would usually be missed by large scale surveys to the forefront, allowing for a more specific understanding of a phenomenon and its impact against a certain section of society (Pierce, 2008). This would in turn allow the implementation of change that is actually relevant to its participants, rather than effecting change on a society that would have little relevance to minority groups. However, qualitative research is not flawless, as it argued by Hood (2006) that linguistics are less specific and precise than numbers, which allows for the data to be more prone to subjective analysis, depending on the experience and skill of the researcher. Furthermore, qualitative research can also be seen as less reliable due to the researcher over identifying with the participants, or being prone to observer drift, where the results and accepted as the norm are increasingly less likely to be recorded. Pierce (2008) also identifies that research questions are developed alongside prior knowledge gained through research and learning, and there is therefore the potential for bias to influence data collection and interpretation. In order to avoid subjectivity at any stage of the research, certain measures were implemented; with regard to data

collection, an interview guide was created to give consistency to the interviews, the transcripts were accurately written and analysed with due diligence to the dangers of biased interpretation.

Lastly, mixed methods research was also considered due to its ability to compensate for the aforementioned weaknesses of both qualitative and quantitative research (Burke Johnson, Onwuegbuzie and Turner, 2007; Denscombe, 2008; Pierce, 2008; Caruth, 2013; Bazeley, 2017). It is the newest research paradigm, although Bazeley (2017) discusses that a blend of words and numbers in research has existed for a long while and has simply been reborn into social sciences to critical acclaim. Bazeley (2017, p.4) then furthermore offers a succinct definition of mixed methods research; "...they flexibly employ a diversity of approaches to embrace the multiple perspectives that behavioural, social, and professional complexities demand". There are however varying forms of mixed methods research, and arguments about its definition. Burke Johnson et al. (2007) describe a scale of research where at one end sits pure qualitative research and at the other sits pure quantitative research i.e., research that is conducted using only one or the other in terms of data collection and analysis. The authors then posit that in the centre sits pure mixed methods where there is an equal use of qualitative and quantitative research methods, with qualitative mixed and quantitative mixed sitting either side and using both but favouring one approach. However, Bazeley (2007, as cited in Burke Johnson et al., 2007) argues that research that uses both qualitative and quantitative research methods but does not integrate them until inferences are being drawn should be referred to as multimethod research, where mixed methods research integrates both approaches at data collection and analysis stages, rather than just its concluding point. The potential of using qualitative mixed methods for data collection was considered with interviews allowing for the motivations behind the participants decision making to be captured and participant surveys enriching the data and offering statistical value to individuals or organisations that should wish to extend the research. There are, however, limitations to mixed methods research that explain why it was not employed in this study. Firstly, the combination of qualitative and quantitative research methods may facilitate a deeper understanding of the social world but is naturally more time consuming than a single approach, any may require a team of researchers rather than one individual (Cronholm and Hjalmarsson, 2011, as cited in Watts, 2018). At the outset of this research, the aim was

to have thirty participants, and it was decided that analysing thirty transcripts and interpreting thirty sets of numerical data would be too time consuming for the researcher in a year-long Masters course. In retrospect, if it was known at the start of the research that only fifteen participants would be obtained then more consideration would have been given to the benefits that quantitative research could have provided. What's more, for mixed methods research, the researcher would have to learn multiple methods and be proficient to the degree of avoiding criticism that reflects their ability to collect and analyse data appropriately (McKim, 2015). For example, survey research measures characteristics of a population, where the results can be presented as percentages with a degree of certainty, although working with a statistician is recommended to build a valid survey (Sukamolson, 2007). However, survey research has historically been applied to research with large population sample sizes (Ponto, 2015), and it was felt inapplicable to this report's sample size. A quantitative research method that may hold some weight within this field is correlational research, where it aims to identify and measure relationships between two variables without attempting to influence them. This acts as a foundation for research where relationships are first discovered, where qualitative research into the meaning of those relationships can then be conducted (Asamoah, 2014). Within this research, an example of this method could be exploring any links between frequency of use of the NDM in contrast to level of investigation or rank of participant. However, Asamoah (2014) argues that correlational research can be problematic; relationships can be identified that are unassociated with each other, or correlation can be found between two variables without exploring whether one effects the other negatively or positively. Furthermore, as discussed by Friday-Stroud and Sutterfield (2007), the science behind decision making is difficult to express numerically and can only be quantified when its ability to accomplish a certain outcome is assessed. Since the assessment of decision outcomes is not the intention of this research, a quantitative approach was not deemed suitable, and a focus on qualitative research was chosen.

The method of data collection used in this research was semi-structured interviews, but a variety of methods were considered. Of the three types of interviews, structured interviews are the most rigid, where a predetermined set of questions are asked in the same order across each interview, the researcher does not deviate from the set topics and the participant may not introduce new topics to discuss. Next

are semi-structured interviews, where there is again a predetermined set of questions that the researcher will ask across each interview but the order in which they are asked may change and the participant may take the lead by introducing new but relevant topics. Lastly, unstructured interviews take the form of a free-flowing conversation, rather than an interview; there may or may not be an interview guide, but the researcher is not bound to ask each question across all interviews and the participant is sometimes encouraged to take the lead in discussing topics (Roulston and Choi, 2017).

Structured interviews are often found in clinical environments, specifically in diagnosis questionnaires, because the rigidity of the questions removes variability in the answers recorded and allows for easier diagnosis of patients (Segal, Coolidge, O'Riley and Heinz, 2006). This increases reliability, because it decreases both the amount of information that requires analysis and the variation that will be found in the data collected as there is less chance that different interviewees will elicit different responses (Segal and Coolidge, 2003). Increased reliability in turn increases the validity of a piece of research and its results, as being forced to cover all topics may prevent the interviewer taking a biased approach and asking only questions which favour their hypothesis (Rogers, 2001). However, whilst the rigidity of questions may lead to increased reliability and validity of the research, the trade-off is that rapport between the interview and the interviewee is hindered, as the participant feels obligated to cover only the topics raised by the researcher, and not to introduce or discuss new topics which they believe may be relevant to the field of study (Segal *et al.*, 2006).

On the other hand, unstructured interviews allow for all topics to be discussed that both the participant and the researcher believe are relevant in answering the research questions and give the potential for the most accurate description of the participants experience to be given (Mueller and Segal, 2015). Due to the style closer resembling a friendly conversation, the rapport between interviewer and interviewee is strengthened, encouraging the participant to offer more information. However, the freer flowing style creates problems at the data analysis stage, with the wide array of information being difficult to effectively compare and code between each participant and increasing the time required to do so (Alamri, 2019).

The final type of interview, semi-structured, is the most common and frequently used qualitative research method (Taylor, 2005; DiCicco-Bloom and Crabtree, 2006). It balances the rigidity of structured interviews by having an interview guide of open-ended questions against the loose format of unstructured interviews by allowing the researcher to ask probing questions that may vary between each interview (Roulston and Choi, 2017). The predetermined interview guide means that at the data analysis stage, coding the responses will be easier and more effective in comparison to unstructured interviews, by having potentially similar, but not the same, responses from the same questions. Ayres (2008) highlights that despite having an already agreed set of questions, the researcher is permitted to move between topics as they see fit and to change the order in which the questions are asked if appropriate, improving the flow of the conversation whilst still ensuring all relevant topics are covered. However, the existence of an interview guide in semi-structured interviews implies that the researcher developed those questions from prior knowledge after having studied the research area (Kelly, 2010; Kallio, Pietila, Johnson and Kangasniemi, 2016). This allows for bias to influence the questions, both when the interview guide is created and when the questions are asked in interview, as the researcher may pursue data they feel is more relevant to answering their research question.

To combat against this, Kallio *et al.*, (2016) explore a number of stages in which the influence of a researcher's bias can be reduced: retrieving and using previous knowledge, creating an initial interview guide and pilot testing the interview guide before making necessary amendments. Within the pilot testing stage are three methods of testing the guide: internal assessment, expert assessment, and field testing. Field testing involves an initial interview guide being tested on potential participants, which was outside the capability of this Masters programme. Expert assessment refers to critique by a subject specialist outside of the research team and internal assessment refers to critique by collaborators on the research team. Since the researcher was acting as an individual rather than as a team in this study, an initial interview guide of open-ended questions was scrutinised and approved by the supervisor which were deemed neutral and aimed solely at gaining a richer understanding of how the participants understood and felt about the NDM and its applicability to their investigations.

A good interview guide, and therefore a good interview, relies on open-ended questions that allow the participant the flexibility to explore their own experience without it being confined by the researcher (Roulston and Choi, 2017). They furthermore offer the participant a voice in the research and are argued to be more effective at eliciting truthful responses (Singer and Couper, 2017), which is vital to this research that aims to explore the participant's own perspectives of the NDM. As such, the interview questions were developed in line with previous research and with the aim of answering the research questions. For example, the NDM may be a universal model that is understood by officers across all England and Wales police services, but it was felt necessary to explore what the NDM meant to individual officers, therefore an initial question was asked to ascertain the participants' own perspective: 'what is your understanding of the NDM?'. This question aimed to discover the participants' view on its function, purpose, and effectiveness, although effectiveness was often assessed with the question: 'what is your opinion of the NDM?' and often 'how well do you think it achieves its purpose?'. The questions were then directed at how the participants felt the model had changed criminal investigations, if at all: 'how do you think the NDM has impacted criminal investigations?'. Along a similar thread, questions were asked surrounding certain aspects of criminal investigations that have been heavily discussed in academia in relation to MoJs, namely hypotheses (Rossmo, 2016; Dando and Ormerod, 2017; O'Neill, 2018) and cognitive biases (Ask and Fahsing, 2018; Rassin, 2018). As such, 'how do ensure that you are exploring all relevant hypotheses appropriately?' and 'how do you ensure that cognitive biases do not influence your decision-making?' were included to uncover whether the participants utilised the NDM at any stage or had developed their own working rules.

As the CoP (2014b) highlight how officers who can demonstrate their use of the NDM in decision-making will be supported by the organisation, with an implication that the decision-making process is more significant than the outcome, a question was created that asked participants to detail how they justify their decisions in order to explore the aspect of accountability: 'when your decision making has been scrutinised, how do you go about justifying your decision?'. The NDM was omitted from the question itself to see if participants mentioned the model unprompted, implying they felt support if they could justify their decisions using the NDM. Penultimately, among the claim that specialised decision-

making tools need be implemented where decisions are more likely to be subject scrutiny (Alys, et *al.*, 2013; Adams, 2014), a question was developed that encouraged the participant creatively explore what they felt were the most important aspects of investigation what would be most useful when amalgamated into a model: ‘if there was a decision-making model specialised for criminal investigations, what would you want it to look like or what do you think it should include?’. Lastly, interviews were always ended with the same question: ‘is there anything else you wanted to mention to clarify?’. This enabled the participant to either raise new topics for discussion or to highlight what they felt was the most important part of their perspective. The interview guide can be found in Appendix B.

The interviews with the participants were conducted both over the phone and through video calling software, due to restrictions placed on the UK by the government and by university rules in response to the COVID-19 pandemic. Participants were approached by their line managers following consultation with this study’s supervisor and emails were provided to be used as points of contact. Time and dates for the interviews were arranged with the participant’s work schedule in consideration, as well as the fact that as serving police officers, their work should always take priority. Participants were encouraged on their end to take part in a private room to avoid background noise and to feel comfortable in sharing their perspectives without being overheard. Both by email and verbally before and after the interview, participants were reminded that the interview was voluntary and were advised on their right to anonymity and their right to withdraw their participation.

It is generally accepted that qualitative data collection is made easier by computer aided communication tools due to the flexibility in time and location they offer (Jankowski and Selm, 2005; Cater, 2011). Video calling was preferred to conducting interviews over the phone as it is as close to face-to-face interviews as one can get during a pandemic. Lobe, Morgan and Hoffman (2020), in response to the move of data collection to online methods, created a detailed assessment of a variety of video calling software to be used by researchers and their findings were considered for this study. After a number of issues were encountered using video calling software, which are explained in the reflections section of this chapter, the decision was made to conduct all interviews over the phone and have them be recorded to an electronic recording device. The recordings were first uploaded a computer, then transcribed,

uploaded to the university's secure cloud server and both the recording and transcription were then deleted from the researcher's individual laptop, in accordance with approved ethics guidelines.

Sampling Method

Sampling is defined as the set of participants drawn from a population who serve as subjects for observation in line with the objectives of the research (Sharma, 2017; Seenivasan, 2020). Although it is only a subset of a population, as it is unfeasible to observe everybody, it is generally accepted as a representation of the society as whole where the validity of the study is impacted by sample size; if there are too few participants, reliability of any inferences drawn from the research is reduced, similarly if there are too many participants without a true representativeness of the population (e.g. all participants middle class, white, heterosexual men) then the sample is not a reliable source to draw conclusions about the society (Seenisavan, 2020). Sharma (2017) states that there are two types of sampling techniques: probability sampling, or random sampling, in which the probability of choosing each participant is the same, and non-probability sampling, where the researcher's judgement influences how the sample is drawn from the population.

From these two types are many off shoots of sampling but in order to answer the research question, purposive sampling was chosen, where the participants are deliberately selected due to qualities they possess that lead the researcher to believe they will offer more and richer data relevant to answering the research question (Etikan, Musa and Alkassim, 2016). Alongside Glaser (1978), who acknowledges that initial stages of research involve going to groups who are thought will maximise data, Etikan, et al. (2016) argue that a research using purposive sampling simply decides what needs to be known and approaches participants who can provide the information through knowledge or experience. Daniel (2012) argues purposive sampling is applicable when the target sample group is small and outlines a structure for participant selection that will be explored.

Firstly, defining the population for study was completed in the initial application stage once it was known what the research was aiming to achieve. Since the research aims to understand how the NDM is utilised in criminal investigations, consent was given by the participating Police Service for officers to be approached who could offer personal perspectives on how the model fits into their investigations

and decision making. Secondly, by identifying relevant criteria, it was decided participants had to be trained to PIP levels one, two or three, and be in charge of or work as part of a team in conducting volume crime, serious and complex crime, or major crime investigations. Initially, it was deemed necessary that participants were serving police officers, although this was later revised to include retired officers who could still provide insight on the utilisation of the NDM in order to increase the sample size and showcase the differences between investigations before and after the implementation of the model. Following on from this, the next step is determining how the participants are to be recruited. Contact was maintained through the research supervisor and a liaison at the participating police service, and officers were subsequently approached and means of contact were then provided between participants and the researcher, usually by email. In later stages of the programme, a new wave of officers were contacted and snowball sampling was used, whereby they were asked to enquire amongst their team if any colleagues would also wish to volunteer. Although Daniel (2012) then states the sample size should be decided, no upper limit was set for this research and interviews were suspended when there was not enough time left for the study and when the researcher felt meaning saturation had been reached, defined by Hennink, Kaiser and Marconi (2017) as no new ideas or topics being raised as interviews progress. Ultimately, the sample size was 15: three PIP 3 officers, five PIP 2 officers and seven PIP 1 officers, with a retired officer being included amongst PIP 2 participants. This allowed for differences to be identified across the varying PIP levels to see if experience or severity of investigation played a role in how the NDM is utilised.

Analysis

Qualitative data analysis involves “...working out how the things that people do make sense from their perspective.” (Ezzy, 2002, p.xii). There are many different analytical approaches that can be taken to a qualitative study, up to 26 according to Tesch (2013), although the author highlights these are not all easily distinguishable as many share similarities. For example, discourse analysis is an approach that focuses on understanding how certain events or terms are defined by a population and is specifically useful in the study of personal identity (Pastrana, Jünger, Ostgathe, Elsner and Radbruch, 2008; Johnstone, 2018). This approach was not deemed suitable at understanding how the NDM is utilised by

practitioners as the focus is on their personal experiences rather than the way in which they define the model itself. Another model of analysis that was initially considered was content analysis as it identifies and explores themes that arise from the data collected. The process however, as highlighted by Ezzy (2002) is that content analysis involves identifying themes before the data is analysed, recording how many times each category is mentioned and then making comparisons between what was predicted and what occurred during data collection. This limits the voice of the participant as only the themes predefined by the researcher are considered. As the researcher was reliant on participants' experiences to understand the impact of the NDM, content was not utilised in order to fully explore the officers' perspectives of the model.

Thematic analysis was chosen for this research and is defined by Braun and Clarke (2021) as an approach that acknowledges inductive (data driven) and deductive (theory driven) pathways to coding and capturing semantic (explicit) or latent (implicit) meanings from participants. Simply put, it involves searching for themes or patterns that arise from data that relate to answering the research question (Lapadat, 2010; Hawkins, 2017). In a deeper sense, this research used reflexive thematic analysis, where the themes were developed with considerable coding of the data and are generated by the researcher with the potential for evolving to gain a greater understanding of the data (Braun and Clarke, 2021). However, thematic analysis is not just a collection of excerpts from a text, nor is it the use of interview schedule questions as themes, which Braun and Clark (2006) describe as common pitfalls of poor analysis. These risks were acknowledged by the researcher and guidance and scrutiny were provided by the supervisor in order to maintain the validity of the research.

Analysis is often regarded as the most complicated step in the research process due to many ways in which data can be analysed, especially for a novice researcher (Gliner, Morgan and Leech, 2009; Leech and Onwuegbuzie, 2011). As the researcher of this study had no prior experience in analysing empirical qualitative data, the software NVivo was chosen due its ease of use, ability to import the transcriptions directly from Microsoft word, ability to code and record themes identified and see these themes separately from the rest of the transcription (Welsh, 2002). Two important aspects must be defined here to understand the purpose and function of using NVivo to analyse data: theme nodes, which are pieces

from the dataset, such as snippets of text, which use conceptual information to relay findings, and coding, which is the process of identifying and recording nodes (Edhlund and McDougall, 2012). Software such as NVivo is useful for the research in terms of analysing large quantities of data in a short amount of time, which would not be possible without the use of such software (Bazeley, 2006). Two types of coding were used during analysis, as previously outlined by Braun and Clarke (2021): inductive coding and semantic/latent coding i.e., analysing that which was said overtly or that which can be inferred and looking for the meanings behind what was said. Themes were identified from the data and theme nodes were then collected and sorted into the distinguishable themes with consideration of answering the research questions.

Ethics

This research was submitted to the CCCU Ethics Panel and was subsequently approved (see Appendix C). Borgatti and Molina (2005) argue that it is imperative that ethical guidelines are maintained throughout a piece of research to show transparency. Literature on research ethics regularly details confidentiality, anonymity, and informed consent (Kara and Pickering, 2017). When defining informed consent, Husband (2020) states that participants are fully aware of the nature of the research, methods that are to be employed, the intended outcome, why their involvement as participants are necessary, how the work will be disseminated, and what they are expected to do. The CCCU ethical guidelines necessitate adherence to the principles under the GDPR and Data Protection Act 2018. GDPR applies within the European Union (EU) to research in which a researcher collects personal data about a participant and demands that protections be put in place to safeguard the data. Personal data is defined as information relating to a person from which they can be directly identified or information that allows them to indirectly be identified e.g., name, location, identification number (Information Commissioner's Office, 2021c). There must be a legal basis for processing personal data and those most often found in research are legitimate interest, public interest, and participant consent (Information Commissioner's Office, 2021a). GDPR furthermore requires that personal data be stored no longer than is necessary, known as the storage limitation principle, although it does not define how long this should be (Information Commissioner's Office, 2021b).

Once fully informed of the requirements and safeguards surrounding ethics detailed in the participant information sheet (see Appendix D), participants were asked to sign consent forms (see Appendix E), confirming their agreement to participate in the research including being audio and video recorded, their understanding of how personal data will be stored and processed, that they have had opportunities to ask relevant questions pertaining to the research, and that they have been informed of their right to withdraw. For the participating Police Service, a data sharing agreement (see Appendix F) was drawn up detailing the rights and expectations of participants. In order to maintain anonymity, firstly for the police service, it is referred to throughout the research as a police service from E&W and its employees are referred to as professionals or practitioners from a police service from E&W. For participants themselves, they were assigned codes instead of using their names in accordance with their respective PIP level e.g., PIP1A, PIP2A, PIP3A, etc. The interview audio recordings were transcribed to the researcher's computer and then deleted upon the completion of the transcription, which were stored securely on CCCU's cloud server. Any and all forms containing personal data and identifying factors were stored securely and destroyed in accordance with GDPR guidelines. Prior to interviews, participants were provided with participant information sheets which detailed their rights and expectations, and how their data was used and stored in line with GDPR. Before and after each interview, participants were reminded of their right to withdraw participation during the interview and up to two weeks following the interview.

Reflections

Throughout the course of this Masters Programme, a number of issues were encountered that impacted the researcher's ability to conduct interviews. On the 23rd of March 2020, the UK entered a lockdown period due to the COVID-19 pandemic that placed restrictions on non-essential travel and face-to-face interactions, with these restrictions enduring longer than was initially anticipated. The original proposal for the research data collection was to conduct 30 interviews face-to-face at the participating police service's station, with the interview being audio recorded onto a dictaphone. Lockdown restrictions meant that this was no longer possible and it was decided that interviews would be carried out either by phone or by video calling software. Since video calling still offered an element of being face-to-face,

and with data obtained through these platforms being considered as valid and credible as traditional methods (Walter, Seibert, Goering and O'Boyle, 2019), this was initially chosen as the new method of interviewing, with Lobe, et al.'s (2020) assessment of different platforms being considered. Zoom was initially favoured due the software being free of charge and having the ability for recording the interview until security concerns were raised due its lack of end-to-end encryption (O'Flaherty, 2020). As such, the participating police service refused to engage using the Zoom platform. WebEx was then successfully utilised for a small number of interviews until problems were encountered by the participants bypassing their service's security firewall and being unable to join the interviews. Following this, both the university and the participating police service raised concerns over GDPR compliance and, after a short period of pausing interviews, it was decided that moving forward all interviews would be conducted via telephone. It is likely that face-to-face interviews would have remedied the issues in rapport and interaction that were encountered, but since this was not possible, practice interviews on test participants would have been an appropriate method of gaining experience and confidence and improving the quality of interviews. However, due to time constraints, this was not deemed feasible.

Although data collection is made easier using phone interviews or video calling software due to flexibility (Jankowski and Selm, 2005), the pandemic continued to raise issues arranging times and dates for the interviews due to participants struggling to adjust to the 'new normal'. Participants faced increased workloads as colleagues may have been isolating, shielding, or working elsewhere as labour was redistributed to meet front line demands. Many were also having to learn to work from home, which required training in new computer software, upgrades of security software at home to meet the force's compliance guidelines and having children at home since in classroom learning was restricted. Although the initial response rate from participants who were contacted was low, of those who did respond, a greater number still were unable to keep to arranged interview times. Extensions were granted by the university to allow for more time to contact and interview new participants from the same Police Service.

Summary

Following the impact of the covid-19 pandemic and subsequent restrictions, this one-year Masters programme was instead completed over a two-year period. Its intention was to address the gap in existing literature on the applicability of the NDM to criminal investigations and its utilisation by professional practitioners. It is a qualitative study that uses semi-structured interviews to collect its data and to give its participants a voice in their experiences of using the NDM. Participants were recruited with purposive, and later snowball, sampling through points of contact between the university and the participating police service. Interviews were transcribed and then thematically analysed and coded with the use NVivo software. Ethical principles from the university as well as ethical guidelines under GDPR were maintained throughout the research in order to protect the anonymity and confidentiality of its participants. This study faced a number of issues which were surmounted in the hopes of producing research fitting to fill the gap in literature surrounding investigative decision making and to answer the research questions.

Chapter 4: Findings

Introduction

After conducting interviews with 15 participants, 14 serving officers and one retired officer, three key themes were identified: Intuitive versus Conscious Thinking, An Effective Model, and Investigation versus Response. These themes were inductively identified following analysis of the interview transcripts, with NVivo aiding in distinguishing between different codes that were definable under these themes and which aimed to answer the research questions. These themes were identified using descriptive coding within NVivo, described by Saldaña (2014) as the identification of relevant nouns and phrases that summarise a topic, which are then clustered into categories. NVivo allowed for distinguishable codes to be highlighted and stored so that they could be analysed and overarching themes could be identified. For example, under the theme An Effective Model there is the ‘accountability’ code, which includes phrases taken from the transcripts such as ‘use the NDM to be able to justify’ and ‘I’ll explain why I’ve done what I’ve done and an element of that will involve the NDM’. Furthermore, the Intuitive versus Conscious Thinking theme has a ‘subconscious’ code where participants described use of the NDM without explicitly thinking through each stage; ‘it’s kind of automatic now’, ‘you do it subconsciously’, ‘it does start to become a natural thought process’.

Intuitive versus Conscious Thinking is an examination of the way in which officers felt the NDM had become an automatic thinking process, how they could work through the aspects of the NDM without explicitly or consciously focussing on each step. An Effective Model encompasses aspects of the NDM that officers felt were significant and applicable to the work they do, including what they perceived the model’s purpose to be, the training they received on the model, the accountability it affords them, and areas of investigations they deemed the model to be useful such as hypotheses or reviews. Finally, Investigation versus Response is a look at the differences between the way in which the model is used in response situations with examples in comparison to how the model is utilised in an investigation. For ease of reference and to respect the anonymity of officers, participants are referred to by their respective PIP levels with a corresponding letter so that their perspectives remain separated e.g., PIP1A, PIP1B, PIP2A, PIP3B, etc.

Demographics

Of the 15 interviews conducted in this research, all but one participant were serving warranted officers within one police service from E&W, with the remaining participant having retired from active service but returning to the same force as a trainer for new investigative recruits. Although they were not conducting live investigations, their length of service and experience was deemed suitable for them to be included in the research to showcase any differences between investigations now and in the past. There were 6 female and 9 male participants. The most common age group amongst the participants was 20-29 (5 officers), the next most common was 50-59 (4 officers), followed by 40-49 (3 officers), then 30-39 (2 officers) and lastly 1 officer in the 60-69 age group. Length of service of the participants in the police service was mainly between 0-10 years (8 officers), largely in part to the majority of participants being trained to PIP level 1. The next most common length of service was between 21-30 years (5 officers) and finally 2 officers fell within the 11-20 years range. Specifically in a detective role (Detective Constable [DC] or above), 5 participants had no experience as they were ranked either Police Constable (PC) (4 officers) or Inspector (1 officer) but were in charge of volume crime investigations within response. Next, 4 participants had between 11-20 years of experience as a detective, 2 DCs, 1 Detective Sergeant (DS) and 1 Detective Chief Inspector (DCI). Lastly, 3 participants had between 0-10 years in a detective role with 2 DCs and 1 DS, and 3 participants had between 21-30 years of experience in a detective role, with 1 DS, 1 DCI, and 1 civilian formerly the rank of DC.

Intuitive Thinking versus Conscious Thinking

Upon analysing interviews transcriptions, it became apparent that officers across all PIP levels felt the NDM had become a default method of thinking (n=13), whereby they would not consciously go through each step of the model when making a decision, but upon reflection could identify each stage in their thinking and actions. PIP1E, an officer that conducts volume crime investigations and works on response, implies that a reason for the NDM being an unconscious method of thinking is the lack of time in situations that require an immediate action.

...say you're faced with someone with a knife, you don't then start going through saying you need to gather your information and consider powers and policies, it kind of just subconsciously comes to you and you don't really think of it as the NDM it is just something you do at those

jobs, you just do it and it's not until after you kind of reassess and analyse what you've done and you realise you've gone through the NDM without actually going through it... -PIP1E

Other participants alluded directly to experience and the repetitive use of the NDM as a reason the model becomes an unconscious form of thinking (n=4), suggesting that experienced officers find it easier to exhibit elements of the NDM without thinking in comparison to novice officers.

...it gives you that guideline to follow, and then once you've done it a few times it does start to become a natural thought process that you then consider all the elements... -PIP1B

...I wouldn't say I used it much when I started but it definitely comes with experience that you get to learn the NDM... -PIP1F

On the other hand, PIP2A describes how they felt the NDM did not reflect their thinking at all, instead relying on their own working rules developed from instinct and experience.

...it doesn't feel like a model that's serving its purpose, it feels more like I'm using my own instinct, experience, skillset, and knowledge of how to get the job done... -PIP2A

One participant, PIP1G, does emphasise the importance experience has on an officer's ability to use the NDM, where they described feeling overwhelmed in their attempt to consciously use the NDM in response situations.

...when I first came out to area, like started working on the streets, because I was spinning the NDM wheel so much, it started freaking me out because you are going through so many scenarios in your head, like what could go wrong, because you're not experienced enough...you're not spinning the wheel fast enough, however as soon as you start getting experienced that's when you do it subconsciously... -PIP1G

As well as experience, a number of participants (n=3) believed their exposure to the NDM throughout training at the police college is the reason it had become a default method of thinking.

I think during our initial training it's kind of drummed into us...they kind of drum into us at the police college, for you to use the NDM... -PIP1E

...me personally I go NDM most of the time, purely because that's what I learned in college, that's how I started the job, and that feels more natural to me... -PIP1G

...from the very beginning and through the training you get it's reiterated on most of the courses you do...so actually it fits everything, and I think the reason for that is the training we go through... -PIP3A

Despite the overwhelming agreement that the NDM has become an automatic, system 1 thinking process, there were instances of the participants knowingly and consciously using the model to think through decisions. This suggests that it depends on the severity of the situation or the practitioner's past

experience with similar scenarios as to whether the NDM is an intuitive or conscious form of thinking. Unfamiliarity in a situation was cited as a reason for thinking through each step of the NDM, implying officers felt the model provided a baseline they could fall back to when faced with uncertainty.

...when you're braced with a scenario and you're not quite sure what to do, in the back of your head you think right, I need to spin the NDM... -PIP1A

...a lot of people coming into the police may not have had that experience where they would need to make an informed decision of that nature...so it's a good framework to base that off... -PIP1B

...often we have young people dealing with things they have no real experience of it gives them that structure and framework to consider... -PIP1D

There is also the suggestion from participants that the NDM becomes more relevant and conscious during higher level situations that require strategic decisions. Again, this relates to the idea that scenarios that would require increased justification of decisions necessitates a more thorough use of the model, such as use of force.

...I personally think it works quite well when you are dealing with kind of high-risk stuff where use of force is involved and there's a bit more risk attached to that incident...it's probably at the forefront of my mind when using use of force... -PIP1E

...well normally when I consciously do it is when it's a high-level response, so let's say there's a weapon seen...so in that case you try to gather as much information as you can, and you consciously think NDM... -PIP1G

...I think it comes to the fore again for me personally when dealing with crime in action, so kidnap, extortion, offences that are proactive and happening now, because it's around quick decision making and if you refer to the NDM in those sort of life and death decisions I think its value is significant...I think it's formalised thinking and particularly when you've got critical incidents, firearms incidents, and in times of extreme stress, it enables you to gather your thoughts and actually work through a process... -PIP3C

An Effective Model

Purpose of the NDM

In order to see if there was a shared understanding of the model, participants were asked what they thought its purpose was. Answers were relatively consistent throughout with no significant differences across PIP levels and the general consensus being that the model's purpose is a structure for making a decision with the most desirable outcome (n=13). Investigations were only explicitly included in relation to the purpose of the NDM in 3 answers (PIP1A, PIP2C and PIP2E).

...the NDM is the model we use to kind of justify decisions that we make during investigations...guide us in the right direction to make the right decision... -PIP1A

...my understanding of it really is that it just helps you come up with the best outcome...it's really about assessing threats and risks, gathering information and kind of working out plans... -PIP1C

...the NDM is essentially the foundation of every decision you make as a police officer...how to get the best outcome for any situation... -PIP1F

...the NDM is a process that should be utilised against all investigations that we use, so you should have a national standard from beginning, middle to end, which everyone should follow... -PIP2C

...the NDM is a model for police officers...and investigators who work within the police organisation...to formulate decisions that they make...in an investigation mainly... -PIP2E

...for me it's a risk assessment model...particularly in my previous role as a major crime SIO...essential decision making round a particular strategic decision in terms of powers and policies, the various options that I may or may not have... -PIP3C

Two participants (PIP1E and PIP3B) described the central code of ethics in relation to the purpose of the NDM, stressing the importance of how they factor into each decision. Despite being the underpinning principles of the NDM, the fact that ethics were not explicitly mentioned by more participants may suggest a focus on the decision outcome the model may assist with rather than ethics. In contrast, it could be suggested that officers consider personal ethics rather than those defined in the model (PIP2A).

...essentially it's kind of our guidance and rulebook on how to make decisions with inclusion so it all revolves around the code of ethics and kind of everything we stand for as police officers... all revolves around the code of ethics which we should be adhering to kind of every day...it's kind of our standards really and what we should be upholding daily... -PIP1E

I never consider the middle donut of the NDM...I still have strong personal ethics myself that have been built into me since I started the job and I still use Peelian Principles...my integrity is absolutely core and central to everything that I do, I don't need a model to do that for me... -PIP2A

...clearly code of ethics is in the middle of it, it's at the centre of the wheel if you like just to reflect the importance of that in everything we do... -PIP3B

An element of accountability was also introduced, with references to recording and justifying decisions found in the answers of PIP1A and PIP3B. It is interesting to see the association of the NDM with recording decisions as the model does not explicitly state anything about recording decisions.

...the NDM is the model we use to kind of justify decisions that we make... -PIP1A

...it's about formalising decision-making and the recording of those... -PIP3B

The only participant to do so, PIP1G stated that they believed one purpose of the NDM was for continuous improvement of the individual, using the model to better themselves for the next situation.

...the NDM is a decision model that any person takes...to improve their future...the intention of the NDM...I think was to better, or to improve, the services provided, continuous improvement...- PIP1G

The Wheel

Throughout the interviews, there were references to the cyclical nature of the model and how this benefits officers by allowing them to start at any point in the circle to deal with the urgent situation at hand (n=3). This approach to utilising the model suggests any rigidity in decision models is likely to be met with resistance from practitioners and that flexibility means officers can use their personal understanding and method to think through decisions. The majority of these references were made by PIP 1 officers dealing with response situations and volume crime investigations, supporting the idea that the model is more frequently associated with confrontational scenarios or lower end investigations.

...it's a circular model, you can sort of jump in at any point, it makes sense as it is, you're not going to come to the decision at the same starting point and there might be a different element where you start using a power that identifies different options that you can take, so you'd start round at that end rather than the other bit so it is important for it to be a sort of circular model... -PIP1B

...you don't always follow the circle, because sometimes you are jumping all over the place, it's not a straight, or it's not a perfect circle, so you don't always go from information to assessment, you might go okay I have this information and this is my assessment and then before action to jump to reviewing what you did last time to see if it helps anything... -PIP1G

I think with the NDM you have the circle, you sort of follow it round or out of order...sometimes you don't go in the same order with the NDM but you do find that you are still considering all of them...at any time you can go backwards to the others and ultimately, in the heart of your decisions, when you're making your decisions you're considering each and every circle... - PIP3A

Training

When asked about training received surrounding the NDM, participants within PIP level 1 tended to refer back to initial training received at the police college (n=7), with one participant from PIP level 3 also referring to this initial training. A potential explanation for this is that a number of participants from PIP levels 2 and 3 were in detective roles before the introduction of the NDM so the model was

not around when they received their initial training. Participants across all PIP levels however, referred to the repetitive nature of how the NDM is reintroduced throughout various training sessions (n=9).

...when I joined as a PC...I went through 20 weeks of training at the police college...which I gained an understanding of the NDM...we've kind of had like refreshers and things like that since I've been in the force... - PIP1A

You do get a specific input on the NDM whilst in your initial training...then it is constantly brought up again throughout all the different training you do...so it's brought into every training you get, it's brought in and becomes relevant... - PIP1B

It is reinforced frequently throughout various different bits of training...it will be embedded in whatever training is being delivered -PIP2B

...when you're doing courses up at the police college...there will be one on the board in the classroom...its always brought into most training that you get around...progressively as you go through other courses it's just within them, so it all fits around the model...various things, they'll come back to that model...so that's when it's not introduced again but reiterated to you -PIP3A

Two participants made reference to feeling that the NDM had been 'drummed in' throughout training.

...because it is so drummed into us as a training element...it's just drummed into you on a daily basis...it's also drummed into you that it is part and parcel of everything you do... -PIP1B

...because it is drummed into us...I think during our initial training it's kind of drummed into us... -PIP1E

When focusing on what aspects of training the NDM was related to a number of participants highlighted how the NDM was emphasised during officer safety training where use of force is required (n=6), suggesting that the model is prioritised in situations where justification is likely to be required.

...and then during our officer safety training is when they really kind of homed in on it, where they really went into the NDM and then went into each point and kind of homed in on each bit of how we use it, especially when dealing with use of force...I know I keep coming back to use of force but that's the main thing they drum into us at the police college... -PIP1E

...I remember it first being introduced when we had safety training...basically the only time it was brought out and explained was on the staff safety training unit... -PIP1G

...like your use of force, just handcuffing someone is use of force, and up to shooting someone... -PIP3B

Participants across PIP levels 2 and 3 have undoubtedly attended more training courses than their PIP level 1 colleagues and were able to go into greater detail of different types of training received, namely detective training received upon accreditation. PIP2C highlighted how the NDM is retrained when there

is an aspect of promotion involved and participants PIP3B and PIP3C described how even for SIOs, the NDM is still reintroduced on their national courses.

As a detective, you get NDM training as part of your detective training, also as you start going up for promotion you are retrained to ensure its embedded...then it is linked to scenarios and investigations that we might be having lessons on or investigations of people to bring into the class to use as a real-life case -PIP2C

...anything to do with detectives or progressing the detective path...when you start your pathway as a detective, generally there is lessons...where they introduce it to you...lessons around advanced interviewing or ABE, or you are learning about the internet...so you don't forget this model is here to help you in any part of your investigation. -PIP3A

...I did a tactical commanders course a few years ago...it is quite tactical around using the NDM...that's directed at Inspector level rank at the time...when I was doing my detective training, it was mentioned there and also as I'm now like a PIP 3 SIO, when you do your national courses on that the NDM is obviously part of that as well with regards to your decision making... -PIP3B

...I can remember training on the previous model, the one before this, which had an extra M in it if I recall...I think it's implemented across detective training...the courses I've been to at national level...certainly referred to across all those courses...across detective training both regionally and nationally -PIP3C

A concern was raised following the experiences of PIP1C and PIP1F, who both highlight the amount of information received during their training at college and with PIP1F describing how the college environment is not suitable for learning and understanding the model.

...it was probably just a day thing, because with quite a lot of training over the weeks, so my training was 19 weeks and we had quite a lot to go through as you can imagine, especially with our exams... -PIP1C

...I think we had a day at college where we kind of went over it but the issue is when you get trained at college you get a lot of information and you don't get to put it into practice so it's really until you get out to where you're going to be based that your supervisors go over it with you a bit more, and that's probably the first time I started to understand it...the issue with the college is you get told a lot of information and college is a completely different environment to being out on response -PIP1F

Accountability

A very common trend among all PIP levels was the idea of accountability, how all decisions can be subjected to scrutiny either by supervisors or in court. The significance of recording a decision and its rationale was identified several times (n=12), often using the NDM or its elements to structure the rationale.

...about to make a critical decisions then I will call up and get somebody from the control room and take them through my NDM...my team think I'm a bit nuts but I'll go through it verbally with the camera, with the body worn camera so that I don't have to remember why I took certain decisions...so if something went badly wrong there would be no question as to what the foundation of my decision-making was... -PIP1D

...if nothing else an audit trail for the decision... if it's something I really feel I need to justify my decision then perhaps it would be more structured around something that is recognisable whereas if it's a recorded decision then there will be a lot of implied models and I'll grab a bit from everything...write it up in a way that flows and makes sense...it will be an element of the NDM...maybe a bit of a SWOT analysis...aspects of the core investigative doctrine, APP...not so much unstructured but more free flowing... -PIP2B

...it's a matter of working through a process and capturing that process and recording it and documenting it...I'll have the NDM as the first page on the inside...so if I need to refer to it while I'm writing my police file... -PIP3B

...on policy writing...the principles of the NDM will be referred to within the body of the entry...it's documented and evidenced as to why I've come to that conclusion... -PIP3C

Although the NDM itself does not explicitly instruct officers to record or document their decision-making or rationale, a likely reason that participants introduced for its frequent use is the support individuals feel they gain if they can justify decisions while demonstrating they have used the model to reach a conclusion.

...if you apply that through it gives you that cover of knowing that you've thought about different options and you've documented them...if you have applied that, you can show you've used sound reasoning and it sort of gives you a bit of cover...it gives you that sort of back up to say no actually I did consider other alternatives but I discounted them because of this... -PIP1B

...the model does need to be there really because it protects us so we can outline and we can say we've done X, Y, and Z and why... -PIP1C

...gives them confidence in their decision making, and perhaps also a bit of confidence that if something goes wrong, that their decisions, if challenged, will withstand scrutiny...little bit of a siege mentality...criticised from all quarters...defensibility of your actions with reference to that framework is probably the most useful bit for some people... -PIP1D

When specifying what types of decisions needed recording, the trend tended to be that use of force against a person would need more justification later on. This concept was mainly found amongst PIP 1 participants who handle volume crime investigations and response policing and are therefore more likely to encounter scenarios where use of force is necessary and a decision is required in quick time.

...if I've had to make a decision that I know is not a run of the mill decision, it's not an everyday decisions so like use of force or sort of again for something that might have caused some controversy...when you do use force...-PIP1B

...I will structure my updates and make sure I've documented my decision making with reference to the NDM before I take action which may lead to somebody coming to harm...a really big decision or a high-risk situation... -PIP1D

...especially when dealing with use of force and the risk attached to that, because obviously there's a lot of risk in terms of using force as we're essentially assaulting people without assaulting them...primarily it will be in use of force situations...that risk of getting hands on with someone...is it proportionate for me to get handcuffs on this person to take their liberty...really helps us justify how proportionate we are in our use of force... -PIP1E

...NDM is a massive part of that decision-making process about justifying your use of force... -PIP3B

Interestingly, it was brought up across all PIP levels that the decision to not take action, or the expected action, needed to be documented just as much, if not more, as the decision to take action (n=6). Participants PIP2C and PIP2E are able to demonstrate the differences in past attitudes to documentation compared to now.

...mainly I think it's sometimes more important to justify why you're not going to do something than why you are doing to do something... -PIP1D

...whereas before we wouldn't worry about documenting why we went and arrest someone or why we didn't arrest someone... -PIP2C

...in the past I would make decisions... I wouldn't necessarily document that decisions, I might document the result of it, but I wouldn't necessarily document my thinking at the time...I don't remember an awful lot of writing about my thought processes to be honest with you...I would write that I carried out a certain line of enquiry and what the outcome was, I don't remember being asked an awful lot about why I'd made that decision...that didn't seem to be a focus in the past...as an investigators I don't remember being asked to justify my decisions in the way I would suggest happens now... -PIP2E

...what you tend to learn professionally is that with experience a lot of the time it's the decisions not to do something that needs clarification...sometimes in your decision making you do need to justify why you're not doing something or why you're not doing stuff at that time, you might have identified what you're going to do but not at that time for this reason, so I think in the more complex investigations that happens a lot... -PIP3B

Again, this cannot be attributed to the NDM as the model does not state the need to record decisions or rationale, but it is unclear whether this is taught in training, from more experienced officers or just from personal experience. However, for PIP 3 officers, it appears from PIP3C's interview that the association of the NDM with recording is mandated within their policy files due to policy changes implemented by the National Police Chief's Council (NPCC). Furthermore, for response officers or those who use an Electronic Pocket Notebook (EPNB), the NDM can be found at the push of a button, although PIP1C

does continue to say that both they and the officers they know do not utilise it. An EPNB replaces the traditional paper notebook and is an application on the officer's work phone.

...they're pushing it towards using our phone for our notes, and there is a button for the NDM...you press it and it comes up with five headings, so if you want to write in your EPNB the actual headings you do...I don't use it, and I don't know any officers that actually use it... -PIP1C

...last year the homicide and home office working group and the NPCC wanted to implement a standard policy file for SIOs to use, and part of the preamble for that was one of the pages was the NDM...it's in one of the initial pages... -PIP3C

Hypotheses

When asked about their exploration of hypotheses in an investigation, a handful of participants across all PIP levels stated the significance of developing and following lines of enquiry that lead either towards or away from a suspect, a necessity under the Criminal Procedure and Investigations Act (CPIA) 1996 (n=6).

...we don't really look at just the appropriate ones, we have to look at all the evidence and any line of enquiry that move us towards the investigation or away from the investigation... -PIP1C

...under the CPIA, officers have got to follow every reasonable line of enquiry... -PIP2E

...sometimes you need to consider those that lead you away... -PIP3A

This comes in stark contrast to the past direction that PIP2E claims investigators took before the development of the CPIA.

I would then formulate a decision about who I thought was responsible and I would then go down the lines of where evidence fitted that hypothesis, which sounds awful by today's standards but that was the way we did it in those days, and we would actually ignore lines of enquiry that didn't lead us to the conclusion we decided we wanted to get to... -PIP2E

The significance of using hypotheses during an investigation and the benefits they provide were raised by many participants (n=7), with references to terms such as open minded (n=4), tunnel vision (n=1), and transparency (n=1), signifying how officers are aware of the dangers of not utilising hypotheses.

...when you start focusing on suspect conviction you start getting tunnel vision... -PIP1G

...it is also making sure that we are transparent and we have looked at other things... -PIP2C

One of the very first things we do at the start of an investigation which is very important is that we come up with our hypotheses ...we do have hypotheses because you can become very blinkered you know...if you have got that particular mindset you go down a path and look for that evidence all the time... -PIP3A

...hypotheses are very useful if you're struggling to work out what offences you've got and who's done it...it's when you get some more weird and wonderful crimes where you've got to keep an open mind... if you did have a job where you start to feel unsure about what's happened you can start to knock out those hypotheses, because they just show you're thinking widely about what could have happened and then that would hopefully open your mind up to other possibilities, that means other lines of enquiry... -PIP3B

...you go into an investigation with an open mind and identify all the potential possibilities of the hypotheses...one of my mantras is to assume nothing because that leads to disaster... - PIP3C

However, a small number of participants (n=5) described how they felt hypotheses also posed a hindrance to investigations, taking up too much time and focus away from the main lines of enquiry. There is also the suggestion that officers may focus too much on their own hypotheses and ignore evidence or lines of enquiry that lead elsewhere, demonstrating that the use of hypotheses requires a balancing act; enough to prevent tunnel vision but not so much as to develop confirmation bias.

...there's a pro and a con to putting hypotheses on our crime reports...it does cause some issues sometimes at court if we haven't detailed why we haven't followed and cleared out a hypothesis... -PIP2C

I don't really like hypotheses if I'm honest, because I think you can just focus on the ones you've listed when actually your enquiries could point you to a different one...and you might disregard that... -PIP2D

...if it's very clear and straight forward I don't put any major credence in them because you're just wasting your time, if it is what it says on the tin, then it is what it says on the tin, get on with it, when you start to see some DCs hypothesise about is it a burglary or isn't it, well it either is or it isn't...I've got to have some sort of direction, I can't have 25 hypotheses and go in 25 directions...you've got to have one or two...otherwise there's no point, they're useless... -PIP3B

One participant, PIP2A, emphasised the role that experience plays on an officer's ability to generate hypotheses and lines of enquiry, suggesting that novice officers are ineffective at considering the alternative scenarios required for a higher-level case. This is somewhat supported by PIP1A, who describes how supervisors lend a hand by offering their thoughts on avenues to take that an officer may have missed.

...you wouldn't give a complex case to a brand-new investigator because you need them to go through a series of shorter cases, smaller cases so they understand what a line of enquiry is...you need to know where that's taking you and how to close that off, that's the skill of being an investigator... -PIP2A

...my supervisor will endorse that or you know provide further lines of enquiry that she thinks might need to be done... -PIP1A

Despite participants highlighting the importance of hypotheses in an investigation, it is implied by two participants (PIP1E, PIP2B) that the use of hypotheses is relevant to an investigation only so far as having the time to explore those avenues appropriately.

...I think the key thing really is time, and having the time do effectively do that, being an investigator on response is hard, we don't always have the time to effectively investigate a crime...to get the time to complete our enquiries and work through those hypotheses, it's incredibly difficult, time is quite crucial to ensure you conduct a thorough investigation and you cover all avenues...it can go wrong just due to time...- PIP1E

...allowing myself to pursue all reasonable lines of enquiry, whether they point towards or away from a suspect, but equally having the time to be able to do that... -PIP2B

As a reminder, participants were not asked about their use of hypotheses in relation to the NDM. Instead, any mention of the NDM was omitted from the question in order to uncover whether officers explicitly mentioned their use of the model at this stage. Only 3 participants (PIP1B, PIP3A and PIP3B) mentioned the NDM in relation to hypotheses, but only so far as gathering and testing evidence against pre-existing hypotheses, rather than the model having any applicability to generating hypotheses.

...my main method for applying the NDM...at hypothesis level would essentially be looking at the evidence as that doesn't cover powers etc., that's only how you can gather more evidence...for me it helps you to gather evidence and helps to sort of show some weight to any different hypotheses and look at the powers you've got to actually gather more evidence... - PIP1B

...every time you go back over that model you think okay, these were my hypotheses at the beginning, now I think that one doesn't fit...again your hypotheses work very much on that NDM don't they, because as you're thinking about it, you've gathered this information, you've assessed it, so against the first hypothesis does it go against it or does it agree with it... -PIP3A

...I might have half a dozen hypotheses but I would based on the information I had, so back into the NDM, at that time I would try and favour one of the hypotheses... -PIP3B

However, a deeper look at participant answers reveals elements of the NDM being used without overtly referring to the model itself, although this again seems restricted to the information and assessment stages, whereby information is gathered and turned into evidence to be tested against a hypothesis.

There are two references to the term gap analysis, with PIP1A offering their definition.

...my understanding of a gap analysis is, so say for example you've got a set of circumstances...and they may provide you with further evidence which would prove or disprove the offence, so my understanding is almost, as it says on the tin, gap analysis is filling in the gaps of the investigation... -PIP1A

...a big part of it would be getting, so what we actually know, so a gap analysis to figure out where you stand with your evidence and then the possible outcomes, then running through those hypotheses how you can disprove them, what information have you got to sort of prove or disprove... -PIP1B

I suppose a key part of that would be, suspect's account, whether that's their first account, comments, or at an interview, that should position additional lines of enquiry...they're competing hypotheses which I'll consider based on the information and intelligence... -PIP1D

...hypothesise at the very beginning and then as you go through the investigation you eliminate some or in fact we may then create others, because of what you're gathering and then assessing... -PIP3A

...it's down to what we can evidence and what we can't, so you go into an investigation with an open mind and identify all the potential possibilities of the hypotheses...then it's a systematic process of proving or disproving what has and hasn't happened... -PIP3C

Reviews

A key difference was established between the different PIP levels when considering the ways in which reviews are used for investigations, mainly that the severity of the investigation influences the degree to which information and decisions are reviewed. Amongst the PIP 1 officers, when asked about reviewing individual decisions, participants mainly referred to conversations with colleagues to share ideas and justifications.

...just talking to one another, just bounce it around...no one's got anything else that they can turn around and say that's a really bad idea and that's a really good idea... -PIP1B

...we often use peer reviews, so I'll get my colleagues to read over my statements, read over my decisions... -PIP1E

...I go speak to my colleague first, because whatever I'm going through, they have gone through the same scenario as well, so we talk to each other and think could we have done it this way or that way or what were you thinking... -PIP1G

PIP 2 participants began to refer to more formalised processes of reviews due to the more complex nature of the investigations they conduct. Officers again referred to discussing ongoing investigations and decisions with colleagues to review decisions, but this time emphasised how they as a supervisor can still benefit from listening to the officers on the team that they manage. PIP 2 participants furthermore introduced the concept of reviewing decisions because of how they would be perceived in court, considering potential consequences of actions, and ensuring procedures had been followed.

...I might be commander and controller of my investigation but I still also have a team wrapped around me in an investigation so those team dynamics are really important and it's really

important that those officers around me have got the ability to say do you think we should do this?...and having the ability to go yeah do you know what, that's actually a good idea and not see it as an ego thing...you do have to have healthy debate in a team...you can't be a stand-alone dictator...I still have to rely on you know points to prove and the evidence I need to obtain so in the background I still need to know the threshold that I need to reach in order to get a job successfully prosecuted... -PIP2A

...certainly, at higher level, at the crime directorate level, there would be formalised investigative reviews conducted...there's supervisors reviews, there's Inspectors reviews when things get signed off, there's CPS reviews when the investigation goes to the CPS... -PIP2B

PIP2C also alludes to the frequency and during of which complex investigations are reviewed, implying that in serious and complex investigations, the greater number of decisions in comparison to volume crime investigations necessitates increased scrutiny.

...we should be reviewing every single one of our reports and our investigations about a minimum of every 2-3 weeks...it's just a case of right where are you up to, what have you done, what does that statement say, does it change where you are, what's the result with forensics...it could be a 5-minute conversation of if it's a complex job it could be a whole day, all depends on what the job is...-PIP2C

PIP2D however takes a different approach to reviews, describing that only decisions that have not gone to plan are reviewed in order for learning opportunities to be identified and shared across the department. Although it's appreciated that it's not feasible to review every decision in a serious and complex investigation due to the time constraints, assuming that a decision was correct based solely on its outcome could have the potential for being unprepared for scrutiny at court.

...if the decision has gone right, then generally we wouldn't review it...if something has come out of it and somethings not gone quite how we thought then yeah you would look back at your decision making...that learning is shared across the team...it's about learning rather than criticising...sharing the knowledge not even across just my team but across the department so other people don't make the same mistake, it's all about improvement... -PIP2D

Participants at PIP 3 level answered with very similar experiences to PIP level 2 officers; they continue to refer to the number of reviews an investigation goes through before reaching court as well as the frequency of which those reviews occur, again reiterating that higher level investigations such as major crimes are subjected to more thorough formalised reviews. PIP3C again refers to the importance of the OIC such as an SIO listening to the views and suggestions from their team, rather than acting as the sole decision maker.

...if you take any investigation, once I've finished with it, it's reviewed by your supervisor, it goes through a reviewing process before the papers get sent to the CPS, the CPS review it and

then ultimately a lawyer...a lot of the time you'll have meetings where you're reviewing the evidence that you've got, a lot of the time on our investigations you have pre-charge with the CPS where they look and review how you're doing...we're dealing with high level criminals and a lot of information comes in, a lot of information is evidence and you have to make sure that what you have got is evidence and not just information...-PIP3A

...it's just a natural consequence of those daily briefings...major crime where you might do daily or twice a day briefings depending on what you're dealing with...if you're looking at more divisional sort of investigations, your review process might be 2 weekly, a month... - PIP3B

...from a major crime perspective, so we will have regular briefing with the team that is engaged to deal with that articular investigation, and I think part of the SIOs job is to canvas the views of all those on the team during the course of those briefings to review personally the outcomes of the strategic decision and actions that have fallen out of those decisions to see what the outcomes has been, whether it was the outcome that was expected or not...much in the same way that a peer review or a serious case review works, your team are around you, you don't work as an autocratic system, it's a system of working together...a good SIO will utilise other people's ideas... -PIP3C

Only 2 participants, PIP2E and PIP3B, referred overtly to the NDM in their answers, referring to the way in which its cyclical nature allows for constant re-evaluation of progress in an investigation. However, their answers suggest the NDM is used more for reviewing at what stage an investigation is at and how the information obtained can be used, rather than reviewing a specific decision made during the investigation.

...the NDM is circular, and there's a reason for that because when you get back up to the top, part of the NDM is to review what you've done...you're back up to the gathering information stage...then we go round it again and I say so what have we got now?... and that in itself is a review process isn't it... -PIP2E

It's part of the NDM isn't it, it's we knew that and now we know this, it's part of the decision, we'll go out, do all this work, come back tomorrow and we'll review what we've got... -PIP3B

A New Model?

With the view of understanding what information practitioners prioritise and value in a decision model, the last question that participants were asked invited them to explore their creative side and consider how a specialised model for investigations should look and what information it should include. The majority of participants (n=11) considered the NDM suitable as it currently is, and believed no new information needed adding for it to be applied to investigations. Reasons for this included the flexibility the model provides due to the ability to jump into the model at any stage (n=3), the baseline the model represents for all officers regardless of department or rank (n=4) and that its current design is simple

enough that it can be understood and utilised by all officers, with too many strands and too much information increasing its complexity and the number of boxes that need ticking (n=4). Whether these responses are due to a lack of creativity, not knowing another model or simply believing the model is actually fit for purpose is unknown.

...anything I can come up with would be very similar to what it already is, it's a circular model, you can sort of jump in at any point, it makes sense as is... -PIP1B

...that's a difficult question actually, I do think the NDM is good purely because it's used by everyone and it's well known, and a lot of the time different forces use different systems and have different ways of thinking and it can be a bit of a faff and can lead to misunderstandings...I think it would be best to have one that's universal... -PIP1F

...my personal point of view, as I said right at the beginning is that the NDM reflects what officers do subconsciously and as a result of that I've always found it relevant to its purpose and fit for purpose as far as investigations are concerned, I'm just struggling to think now whether I would add anything else within the model because I think the more strands you apply to it the more complex it becomes... -PIP3C

The remaining participants believed that the NDM needed redesigning with additional information to tailor the model to investigations. They acknowledged that the model itself was not a bad model, but in its current state was more applicable to response policing and therefore investigative elements needed adding. PIP level 2 officers believed the NDM would be made more applicable to investigations with the inclusion of investigative strategies and knowledge (n=3), such as gathering information necessary to identify investigative direction and also to develop lines of enquiry to maintain progress, especially for new investigators who are unsure of how to spot and follow lines of enquiry. The combination of investigative knowledge such as CD and APP into the NDM was also recommended to provide a structure for officers.

...the biggest thing that I'm seeing for detectives at the moment is understanding the lines of enquiry process, so what that actually means because some officers do not understand the concept of line of enquiry, that's what scares me the most about new detectives...I think if you could stick to a model that is sticking to lines of enquiry and making sure they follow all those lines of enquiry, some concept in that way would be really, really useful...-PIP2A

...I suppose without being too vague a bit of everything, the NDM is a good structure, I wouldn't necessarily say it fits perfectly, the core investigative doctrine, the APP, they are good structures, they probably need a bit of work and updating because again they're a little rigid so things that incorporate an element of SWOT analysis, an element of the NDM, an element of core investigative doctrine, all those things weaved in... -PIP2B

...I suppose more in line with investigative strategies with more focus on the VOWS mnemonic, victim, offender, witness, scene...I suppose just more scope to investigations rather than just

strategic...I feel the NDM is more aimed at response like I've said...maybe something like reviewing previous investigations...what else have we done, any other investigations, it's going to have to be very different depending on different departments because investigations run differently...I don't think there would be something that fits all... -PIP2D

The only PIP level 3 participant who did not believe the NDM in its current form was suitable for investigations, PIP3B instead ventured the idea of using the idealised decision model, which is taught to SIOs and what they defined as simply what they currently know, what they need to know, and how they are going to find this information out. It covers the information and assessment stages of the NDM by evaluating what information they have and what is missing, and PIP3B argues that the last stage of the idealised decision model involves developing lines of enquiry to discover the missing information, giving the investigation direction.

...I think it probably exists already, I think it's the idealised decision model, which is taught on the SIO course, which is what do I know, what do I need to know, how am I going to find it, so that generates your lines of enquiry...and that is pretty much what detectives should do...it's identifying where the gaps are and then coming up with tactics or lines of enquiry to fill those gaps of information... -PIP3B

Investigation versus Response

At the start of the research, it was expected that participants would collectively agree that the NDM was more applicable and favoured by response officers, because of its development from the CMM which was designed for conflict scenarios typically faced when responding to incidents. However, throughout the interviews it was discovered that officers had mixed opinions on what policing function the model was most applicable to. Participants amongst PIP levels 2 and 3, all detectives on serious and complex or major crime investigations, tended to believe the model was more useful in response situations. While a number of PIP 1 officers agreed, there were those who believed the model was more useful in investigative decisions. Firstly, there were participants who thought that the model was useful for all policing decisions (n=5), in line with the argument from the CoP.

...I think the NDM kind of hits the nail on the head in terms of anything we do in the police, whether that's response or investigative work... -PIP1E

...its genericness allows for whatever it generally fits, the general flow from that initial bit of information and intelligence to sort of making the decision, making the decision, and reviewing...it's a model that can suit anything... -PIP2B

I think you can fit it to every decision you make because generally in the police you are told something, police are gatherers of information, and when information is given to you, you need to assess what's been given to you, one could say it does suit everything... -PIP3A

There were PIP 1 participants who believed the model to be useful on response when responding to calls in order to gather information and to assess options on how to deal with the situation.

...if you're dealing with a very low-level job, you're thinking about what information and intelligence you've received, you are assessing the risk, you are thinking of what options you've got, you are considering your powers and policies...I do think the NDM is easier to use in a response-based environment, purely because you've got less time to make a decision whereas in an investigation you have time to think about it... -PIP1F

...from the moment the dispatcher calls me, I start thinking okay what information do I need, what is the contingency, what do I need to think about before I even arrive so when I get there I'm already ready to react to something... -PIP1G

Amongst the PIP 2 and 3 participants, the general consensus was that the model is more applicable to response situations, with particular reference to tactical ops and firearms, again highlighting its utilisation in scenarios where use of force is involved and a greater degree of justification will be required.

...so, our tactical ops guys and girls, they absolutely love it and adore it, and you'll hear some people worship the NDM, so erm I think for tac ops decisions, it's probably a better fit... -PIP2A

I think it's better used in, if I'm honest, like in a uniform capacity, rather than investigations...for example if they've got someone with a knife or whatever, you know they're gathering information, what options have they got, have they got a taser, have they got that sort of thing, rather than a slow time investigation I can't say I've used it...I think it's more widely used by uniformed officers and firearms officers...I think it's more targeted to uniform police...I feel like the NDM is more aimed at response... -PIP2D

...it's something that I think is pushed quite heavily in the police, especially in the uniform side...where the NDM can be quite tactical like a working strategy that firearms commanders might use it...I think the NDM is probably very good when you are in those sort of tactical firearms commander roles or your public order commander roles...you tend to see that in our role that the uniform side of the business will probably use it far more formally than the crime group would...it's definitely more formalised for the uniform side of things...especially in response... -PIP3B

...it will no doubt be carried around by most firearms officer and particularly the strategic firearms commander in tactical command...probably more loosely used and more subconsciously used at the generic and lower end of criminal investigations... -PIP3C

However, there were participants from PIP level 1 who felt the NDM was more significant to investigations rather than response policing. The main reasons that officers felt the NDM could be

utilised in investigations were time and proportionality; having the time to think through each step of the model and assessing proportionality of certain actions and lines of enquiry.

...I feel it's better for something that you get a chance to actually sit down and think about rather than, you'll go through an abbreviated version when it's a bit more in the moment type thing so if you're at an immediate investigation for a PC I don't think it's as relevant as it would be in an investigation area because you don't have the time to sit there and go through every element and tick off every box...I use it a lot in investigations where you have to take stock of proportionality and what you can actually do next...it's certainly more useful where you've got a little bit more time...-PIP1B

...it's not great in a hot moment where you're walking down the street and something evolves right in front of you, you can't start thinking okay information, intelligence, what's the best strategy, powers and policies, you've just got to get stuck in, but when you have the opportunity to have a slow time decision or a decision where you're not having to act urgently, then it's a useful way of documenting what you're after...I think it falls to proportionality...it tends to be lower level crime, you know assaults, shoplifting and it doesn't warrant the degree of extra work...it's not proportionate to get the meaning bogged down, we don't need more boxes to tick... -PIP1D

...in response you are going full throttle, whereas on investigations when you come down you just slow down the whole thing, you have a lot more time, however you can do a lot more research as well, and the NDM is much more effective...-PIP1G

Despite the majority of PIP level 2 and 3 participants believing the model to be more applicable to response policing, there were those who saw its usefulness to certain aspects of investigations, mainly relating the model to key and strategic decisions, and hypotheses. Its applicability was furthermore raised in relation to suspect interviews by PIP2B, demonstrating its use when planning and preparing for an interview.

...when I'm talking about suspect interviews for example, and decisions made with regards to legal advisers...having my raw material...knowing what my powers and policies are...come up with a strategy and options...it fits quite nicely because I'm more of a suspect interview specialist in my field so it fits nicely with that...if I was doing a document as tier 5 investigative adviser, if I was advising an SIO...in relation to what strategy is best in this particular suspect interview...that would be very much more structured and that would be based around the NDM... -PIP2B

...its always bought into most of the interviews...as you gather something and make a hypothesis...you have to prove and disprove, and you can only do that by working that model again...again that's where the model helps because you quite clearly could be told quite a few things that could be intelligence but unless you can turn it into evidence you can't introduce it into the case... -PIP3A

...there's a number of strategic policies and this allows me to determine as I make those decisions I guess...it sort of determines my thinking I guess of strategic decision making...if you're sitting at a desk as an SIO writing a policy file trying to make real key decisions it's a

tool that makes you sit and formalise your thinking and decision making...also the strategic decision-making areas as far as criminal investigations are concerned... -PIP3C

Summary

This chapter has identified and explored three themes that arose from the data, analysing how practitioners automatically and consciously used the NDM, whether officers thought the model was useful at aspects in both investigation and response, and lastly the difference of opinion of participants on whether the model was more applicable to investigation or response. Generally, officers unconsciously use the model the majority of the time, but it becomes an explicit form of thinking when faced with unfamiliarity or with high stress level situations. There is inconsistent interpretation of the model; most officers agreed its utilisation in recording decision rationale and justifying decisions but few saw it as relevant to reviewing decisions and generating hypotheses in investigations. The main view of officers is that the model is more useful in response due to situation of use of force or tactical operations necessitating a higher degree of justifications, although in practice, participants felt the model was not applicable to response situations due to the lack of time allowed to think through the model.

Chapter 5: Discussion

Introduction

The aim of this research was to interview professionals from one Police Service in E&W to compare practitioner views on the utilisation of the NDM during their investigations. On analysis of participant interview transcriptions, three main themes were identified: Intuitive versus Conscious Thinking, An Effective Model, and Investigation versus Response. This chapter will relate the findings from the previous chapter to relevant research, following the same order. First, the consideration of the NDM as an automatic, system 1 form of thinking will be discussed in contrast to when officers knowingly and consciously used the model and how the Naturalistic Decision-Making approach relates to police decision-making. Next, the effectiveness of the model will be analysed by focusing on the way in which officers receive training on the model and what they consider its benefits and drawbacks to be. Lastly, the differences in use between investigations and response policing will be discussed in determine whether professionals prefer the model in short, confrontational situations or longer, complex situations.

Interpretation

This research identified that a majority of participants stated that they used the NDM intuitively, where they would unconsciously think through each step of the model during their decision-making process and could identify each element of the model in their thinking upon later reflection. One participant stated that the reason for intuitive use of the model was the lack of time available in fast paced scenarios, citing the use of force against someone with a knife as an example of where officers need to make immediate, justifiable decisions in seconds. Participants themselves highlighted that in situations of immediate threat to life, they did not have the time to consider each step of the NDM but instead took action based on individual judgement. It is therefore likely that the NDM is applied to these situations as a retroactive justification tool, a concept that O'Neill (2018) describes as *ex post facto* use. Other participants argued that the reason for the NDM being a subconscious tool was the experience they gained over time through repetitive use of the model itself. This supports the arguments of Hine, *et al.* (2018), who posited that experience an officer gains throughout their career informs their system 1 process and leads to faster, unconscious thinking for similar scenarios. In relation to naturalistic decision making, this concept fits in with the RPDM from Klein, Calderwood and Clinton-Cirocco (1986), where

the authors describe how an individual's experience develops intuitive patterns. These patterns then act as cues where, when applied to policing, an officer can match the pre-determined pattern to a given scenario and provide the expected action, which offers an explanation as to how officers make rapid decisions without comparing alternative options. Where this research also confirms the arguments of Hine, *et al.* (2018) is in the concept that novice officers are unable to use intuitive thinking at the beginning of their career but instead adopt an analytical approach to unfamiliar scenarios. In this research some participants described unfamiliar situations and inexperience as a reason for consciously using the NDM to inform their decision-making.

As well as participants stating that experience of using the NDM time and time again led to it becoming a default way of thinking, some other participants instead described the training they received at the police college as the cause. Its constant demonstration by instructors as applicable to any scenario led to the model becoming available to officers when they met that scenario out on response or investigations. This relates to the availability heuristic (Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, and Simons, 1991), where a subject's judgement is influenced by the frequency with which they come into contact with a phenomenon. This subsequently informs how easily that phenomenon is brought to mind. Despite this, a small number of participants disagreed, describing how they felt overwhelmed by the amount of information and that the Police College is too different an environment to response policing that it is difficult to learn and apply the model to situations when first attending incidents. One officer went further to describe a concept similar to decision inertia, where they felt consciously using the NDM at first was so overwhelming they struggled to reach a decision. This contradicts the arguments of Lee (2009, as cited in Adams, 2014) and Bryant and Bryant (2016), where they argue that having a model reduces decision inertia due to the protection it affords officers. Shortland, Alison, Thompson, Barrett-Pink and Swan (2020) describe two types of decision inertia; decision avoidance, which is delaying the decision to take action at a later time, and redundant deliberation, where persistent evaluation of potential options is so cognitively demanding that no decision is made to aid with the current situations. This research has identified the potential for novice

officers to suffer from redundant deliberation until enough experience has been gained to use the NDM confidently and automatically and prevent the effects of cognitive overload.

An underlying trend identified from participant answers was that the NDM is more thoroughly used by officers when faced with use of force situations that have a higher level of risk, such as tactical operations and firearms incidents. The likely reason for this was given by over half of the participants, who described how the NDM was emphasised during officer safety training repeatedly, primarily because use of force draws criticism from the public and is therefore in greater need of accountability and justification (Wood, 2004; Katz, 2014) which maintains public confidence and trust (Bennell, Alpert, Andersen, Arpaia, Huhta, Kahn, Khanizadeh, McCarthy, McLean, Mitchell, Nieuwenhuys, Palmer, and White, 2021). As highlighted by O'Neill (2018) the NDM was derived from its predecessor, the CMM, a model taught to practitioners to justify actions using force as proportionate, reasonable, and necessary. A lack of significant differences between the NDM and CMM, aside from the central code of ethics and review stage, as highlighted by O'Neill (2018), could suggest why practitioners feel the NDM is more applicable to justifying use of force situations, although research is needed to explore this assumption.

Participants were asked what their understanding of the NDM was to determine if there was a collective agreement of its purpose. The majority of interviewees agreed that the model was a structure for organised decision-making for the best available outcome. The applicability of the model to investigative decision-making was only stated in three of the fifteen interviews, supporting O'Neill's (2018) questioning on whether the model is suitable across all areas of policing. The central CoE was only mentioned by a small number of participants despite it being the underpinning principle of the model, where it could be implied the practitioners' focus is on using the model to justify the decision's outcome rather than consider the ethics used when reaching that decision. It therefore supports the findings of Lax (2014) and Adams (2014) who both found resistance from police officers in understanding how values and ethics translate into behaviour. A small number of participants also linked the purpose of the model with accountability and recording decisions, while the majority agreed the model was useful for recording decisions, which is surprising given the fact that the model itself

does not explicitly state the need to record decisions or rationale. The requirement to document decisions and rationale comes from the APP information provided for the NDM (CoP, 2014). It describes how recording decisions can be left to the officer's discretion but under certain circumstances is required by statute or police policies, although they do not detail what statute requires the documentation of decisions and rationale. The investigation into the death of Stephen Lawrence is an example of poor decision making when recording is left to the discretion of an officer. The introduction of policy files for major crime investigations should therefore have represented a change in record keeping for the better, but ACPO (1999) found inconsistencies with record keeping and nearly 20 years later, O'Neill (2018) identified the same issue on analysis of IOPC reports. However, one SIO described how a recent policy change by the NPCC meant a standardised policy file was to be introduced with the NDM featuring in the initial pages, so a piece of research examining record keeping over the next few years is recommended to see if the model holds any influence over major crime decision documentation.

The main reason participants gave for using the model in relation to recording decisions and rationale is the support they felt they would receive when demonstrating their use of the model. This represents the aim of the CoP to give confidence to officers when making a decision that they would be supported if they could show clear rationale and use of the NDM when under scrutiny, either by supervisors or at court. One participant, an Inspector who deals mainly with volume crime investigations, took it further than simply recording rationale in their pocket notebook by describing how they vocalise their use of the NDM and record it using their body worn camera. This concept along with the placing of the NDM on EPNBs demonstrates how technology can readily benefit record keeping by structuring and documenting an officer's rationale. This verbalisation process is what Dando and Ormerod (2017) refer to as externalisation, taking implicit knowledge from an individual's memory into a tangible, external environment, such as a written document. Studies have shown that externalisation positively influences the ability to make decisions and problem solve with better performance (Steffensen, 2013; Beckmann, Beckmann, Birney and Wood, 2015).

The general consensus in the field of criminal investigations is that the use of hypotheses has a positive effect on preventing cognitive biases in investigations (Ask and Granhag, 2005; Tong, Horvath and Bryant, 2009; Ask and Alison, 2010; Jones, 2016; Dando and Ormerod, 2017; Ask and Fahsing, 2018). Just over a third of participants emphasised how it is equally important to follow avenues that lead both towards and away from a suspect, a necessity under the CPIA 1996. The majority of participants then highlighted the importance of using hypotheses in investigations, describing how being open minded by documenting alternative scenarios maintains transparency. They furthermore detailed how hypotheses help to prevent the influence of cognitive biases such as tunnel vision, supporting past research from Ask and Granhag (2005) and Ask and Fahsing (2018).

On the other hand, a third of participants suggested that hypotheses can have a negative impact on investigations as it can become too time consuming to explore each one appropriately. Officers also highlighted how failing to document the end of a hypothesis once it is disproved or discontinued can raise issues at court, suggesting that having a large number of competing hypotheses has a detrimental effect on a case. This supports the findings of Dando and Ormerod (2017) who identified SIOs being cautious to add anything to a decision log that would be detrimental to the prosecution's case. One participant specifically described confirmation bias that can be caused by using hypotheses, by detailing how an officer can focus on the hypothesis they have created and disregard other avenues that point away from their leading theory. Regardless of whether officers viewed hypotheses as useful or not to investigations, two participants highlighted how a huge workload can render hypotheses useless, by not having enough time to explore each avenue effectively.

Dando and Ormerod (2017) demonstrated differences in the generation and testing of hypotheses between novice and experienced officers but did not specify how those hypotheses were created, whether it was with a decision model, intuition, or something else. Not one participant from this research highlighted any use of the NDM to create hypotheses, only to gather more information and to prove or disprove them by testing them against existing intelligence and evidence. This was expected, as the model has no mention or guidance on using hypotheses at all in an investigation, as highlighted by Dando and Ormerod (2017), implying that officers using the NDM to test hypotheses without being

instructed to do so see some merit in the model. Fahsing's (2016) investigative cycle instructs investigators to generate hypotheses in its 4th stage: construct. However, it does not give guidance on how it is appropriate to create these hypotheses in a qualitative sense. It is here that the brainstorming phase from the SHDCI as described by Sunde (2020) should be utilised, as it encourages investigators to answer the 5W's to identify what offences may have occurred and who may be involved. In addition, the SHDCI also instructs investigators to consider what other offences may have occurred that are more or less serious, and when examining who may be involved, it instructs investigators to also consider why that individual may be innocent. This wide-ranging model aims to provide a broad and objective starting point for investigations and if utilised appropriately, promises effective hypothesis generation that reduces cognitive biases.

Dando and Ormerod's (2017) analysis of decisions logs from investigations demonstrated that novice officers generate less hypotheses but test more evidence against their theories, whilst experienced officers generated more and tested less until later stages in the investigation. Whilst this research did not explore statistically the number of hypotheses generated and tested, it is able to offer some new information to the existing argument. One participant, a serious and complex crime investigator at PIP level 2, described how they felt novice officers were unsuitable for high level cases due to them being unable to consider competing hypotheses effectively. They argued that they needed to go through several smaller cases to understand how to develop and follow lines of enquiry. This supports Dando and Ormerod's (2017) findings that novice officers are less capable of generating hypotheses. On the other hand, a major crime SIO at PIP level 3 described seeing novice detectives creating too many hypotheses at the initial stage about what offence has actually occurred, where they felt that the obvious choice of offence should be taken as a leading theory without too much consideration leading to time wasting. This again lends credence to the theory of naturalistic decision making using the RPDM, where officers seeing the same offences and investigative outcomes develop intuitive patterns through their experience, so that upon the next investigation with a similar situation, they have primed theories ready to explore.

As well as hypotheses, the use of investigative reviews have also been shown to reduce cognitive biases (Salet and Terpstra, 2014) and ensure lines of enquiry have been appropriately followed (Hill and O'Neill, 2019). The aim of reviews, as argued by Stubbins and Stubbins (2009) is not to solve the case but to identify and remove misleading conclusions. This research identified different degrees of scrutiny and review between levels of investigations. PIP level 1 officers in charge of volume crime investigations referred to using colleagues and supervisors for peer reviews, an informal process where they discuss decisions and lines of enquiry. Whilst using supervisors for reviews may be beneficial due to participants highlighting how they can offer lines of enquiry based on their previous experience, relying on colleagues may be ineffectual if they fail to take what Salet and Terpstra (2014) describe as the devil's advocate approach. This role is the most effective at identifying cognitive biases such as tunnel vision by offering competing hypotheses and encourages investigators to make their decisions and rationale more explicit, leading to a more thorough and accountable investigation. This may not be such a requirement for volume crime investigations, where decisions are often fewer and cases are seen as simpler. Serious and complex crime investigations at PIP level 2 are subjected to more scrutiny and review processes, as highlighted by participants who described reviewing investigative decisions with an angle of how they would be viewed in court. Knowing that successful prosecutions rely on meeting the threshold in court means a greater deal of preparation and a more through focus on accountability. This takes the form of Inspector's reviews and CPS reviews, and briefings of varying frequency and length in order to ensure the case is presentable at court.

However, the briefings are conducted using the members of the team investigating the same crime, running the risk of what Rossmo (2016) terms group think, where the group collectively work to the same goal without safeguards against bias, as members are too hesitant to critique colleagues. If there is any element of focusing on suspect conviction rather than conducting a thorough investigation, echoing the construction of criminality in the Maxwell Confait case highlighted by McConville, Sanders and Leng (1991), it runs the risk of not being identified until the CPS review stage. PIP level 3 participants in major crime investigations reiterated the frequency and length of briefings of ongoing investigations and again highlighted formal reviews such as CPS reviews, 7 and 28-day reviews for

undetected homicides which check the strategic direction of the SIO. However, Hill and O'Neill's (2019) findings demonstrate that SIOs felt they benefitted very little from 28-day reviews despite the potential value they have, as they felt the effects of those reviews were administrative and procedural. This relates to the ritualist and proceduralist roles identified by Salet and Terpstra (2014) where the focus is on errors in reports and organisational issues rather than substantive elements of the investigation. One possible reason for SIOs gaining very little from 28-day reviews is given by an SIO participant who describes how other SIOs offer avenues to explore but acknowledges that as they are all SIOs, they are more than likely to suffer from the same biases. This is what Salet and Terpstra (2014) identify as the criminal investigator role, where the separate investigator's focus is on solving the case rather than improving the quality of the investigation by adopting the team's perspective. In relation to the NDM, no participant described its applicability to review an investigation as a whole, but only so far as reviewing and assessing information obtained throughout the course of the investigation. This is unsurprising given that the review guidance found with APP (CoP, 2014) does not encourage the reviews of hypotheses, lines of enquiry, or the checking of potential biases. Instead, it instructs the reviewing of individual decisions, assessing their proportionality and ethicality and ensuring that they have been recorded along with rationale.

Previous research surrounding the NDM has argued that its outcomes would be procedural and formulaic (Dando and Ormerod, 2017) and that it is more useful for response policing rather than investigations due to the complexity and number of decisions required in investigations (O'Neill, 2018). It was therefore expected for PIP level 1 officers to praise the model and describe frequent use of it, and for PIP level 2 and 3 officers to describe the model as inapplicable to the investigations they conduct because of the greater number and complexity of decisions required. Instead, the research received mixed opinions on its use. A third of participants stated that they believed the model to be useful in any decision, regardless of whether that is on response or in an investigation. This demonstrates a fulfilment of the CoP's aim, who aimed for the model to be used for all decisions in all levels and areas of policing. However, is it appropriate to apply the NDM to every decision in a complex investigation? Dando and Ormerod (2017) found an average number of 86.14 decisions recorded in a decision log by SIOs over

86.86 investigation days for murder enquiries, 84.45 decisions over 66.34 days for aggravated burglaries, and 88.32 over 78.43 days for arson. It is feasible and appropriate for an SIO to document their information, assessment, powers and policies, potential options, and review for all of these decisions?

Following this, the general trend was that participants believed the model to be more useful for response policing and lower-level investigations. PIP level 1 officers described the models applicability when responding to calls, with gathering information informing their decision to take action when they arrive at the scene. This concept was then echoed by participants across PIP levels 2 and 3, who believed the model to be more useful for uniformed officers dealing with tactical operations, firearms incidents, and use of force scenarios. This implies that practitioners consider the NDM is better utilised in situations where police actions against citizens are likely to need justification, again reiterating the belief that the structure of the model assists with accountability of actions.

What was not expected was the PIP level 1 officers who believed the NDM to be more useful in investigative situations. Participants described how they felt that not having enough time in response situations rendered the model useless, as they could not think through each step and make a decision of what to do next. This exemplifies the argument that decision makers feeling the effects of time pressure engage in fewer cognitive tasks (Ordonez and Benson, 1997) and therefore produce decisions with reduced quality (Kelly and McGrath, 1985; Ask and Alison, 2010). Participants then explain how having more time, such as in investigations, gives them flexibility to take stock of proportionality of lines of enquiry to follow and actions to be taken. This sentiment was only felt by a small number of officers, suggesting personal interpretations of the model rather than a unified understanding. PIP level 2 and 3 officers that utilised the model in investigations often referred to strategic and key decisions in major crime investigations. A potential explanation for this comes from the argument of Shortland, *et al.* (2020) who argue that higher level investigative decision making is complex because situations are often so unique, there is no prior experience to draw upon. Naturalistic decision making emphasises the importance of patterns developed from past experience to inform decision making (Klein, 2008) so,

without similar experiences SIOs are forced to use the NDM in taking an analytical approach to strategic decisions.

An association between the NDM and suspect interviews was also brought up during an interview with a PIP level 2 officer. They described how when preparing SIOs for interviews by coming up with a strategy, they felt the NDM offered a suitable structure for them to justify this decision on, as it allowed them to take stock of the intelligence they had available, what policies were in place to obtain more information, and to identify different options depending on the outcome of the interview. This is in contrast to the experience of two PIP level 1 officers conducting suspect interviews at volume crime level, who relate the NDM only to the later stages of an interview either when a suspect offers new information that needs to be considered or when deciding what powers to use to charge a suspect with an offence. Since 1992, investigators have been encouraged to use the PEACE model of interviewing with the aim of gaining a comprehensive suspect account to uncover the truth about events, following the research conducted by Baldwin (1993) into police interviews from 1986 onwards. Baldwin established that there was a focus on gaining confessions and determining culpability rather than gaining account of what had occurred. Found in the APP for interviewing (CoP, 2020), the planning and preparation stage encourages investigators to identify who needs interviewing, why their viewpoint is important, gather material relevant to the interview, points to prove under the offence, etc. The experience of the PIP 2 officer suggests the NDM has some relevance to assisting interviewers in this planning and preparation stage through assessment of available information and considering potential outcomes and options.

Limitations

The key limitation of this research is the small sample size of participants from only one police service which therefore makes it difficult to apply its conclusions to the larger professional practitioner population. Having access to a larger number of participants was negatively impacted by the effects of the COVID-19 pandemic, where restrictions forced researchers to adapt in order to contact and interview participants to maintain timeliness and credibility of any findings (Vindrola-Padros, Chisnall, Cooper, Dowrick, Djellouli, Symmons, Martin, Singleton, Vanderslott, Vera and Johnson, 2020). The

effect on police officers themselves during the pandemic has been a decrease in productivity, efficiency, and ability to perform social functions due to shielding and isolating (Cooke, 2020) whilst increasing levels of stress and poor mental health (Stogner, Miller and McLean, 2020).

As well as the sample size, obtaining an equal number of officers from each PIP level was difficult in part due to COVID-19, but also due simply to available numbers. Few officers move from PIP 1 volume crime investigations into PIP 2 serious and complex crime investigations, and fewer still move into PIP 3 major crime investigations. This means this research is not able to offer balanced findings of any differences between utilisation of the NDM between the different PIP levels, and therefore the research must be replicated with a larger sample size and with equal numbers of PIP officers from each band.

A final limitation of this research is the lack of previous research into the NDM to which this research can be compared. There is no direct research into the relationship between the NDM and investigations that this research can support or disagree with, nor is there an existing framework which this research could replicate with new participants to strengthen any existing arguments. Whilst this research acts as an initial exploratory study, further research into the utilisation of the NDM by practitioners is required. The research therefore has taken an approach focusing on naturalistic decision-making to align itself with cognitive decision-making research, looking at the influences that experience and severity of the situation have on an officer's decision-making.

Summary

This research has explored the relationship between the NDM and intuitive thinking by practitioners through the lens of naturalistic decision making. Unfamiliar situations were a main cause for conscious use of the NDM by novice officers due to having no prior similar experience. As defined using the RPDm from naturalistic decision making, having no previous experience with which to develop patterns means analytical thinking will have to be utilised rather than intuitive thinking. At the other end of the spectrum, two of the three major crime SIOs interviewed described conscious use of the NDM when making strategic decisions. The likely reason for this was due to strategic decision-making in critical incidents being so unique, they have no primed patterns available from previous experience. Novice officers detailed their experience of feeling so overwhelmed using the model when first out on

area that they experienced redundant deliberation, furthermore supporting the idea that the NDM's analytical requirement can be too overbearing for novice officers until they gain more experience throughout their career. In relation to response policing and investigations, the most useful aspects of the NDM considered by participants were information gathering and assessment. For response, this meant gathering information en route to an emergency call in order to identify the best actions to take on arrival. For investigations, this meant gathering information in the form of accounts through interviews and then assessing it in order to turn it into evidence to support the investigation. There was no significant use of the NDM at the hypothesis generation stage of an investigation, largely due to the lack of guidance for investigators on how to generate appropriate theories. There was however use of the NDM in testing hypotheses by assessing information in relation to theories to prove or disprove them. The main use of the NDM identified by the majority of participants was justification of decisions to ensure accountability, described by officers across all PIP levels whether being scrutinised by supervisors or in court. In consideration of a version of the NDM specialised to investigations, the majority of participants believed the NDM suited this purpose as it currently is. Others believed it necessary to add relevant investigative knowledge and strategies, mainly to assist officers in developing lines of enquiry to give the investigation direction and progress. The general consensus of participants was that the NDM is more applicable to response situations, due to police actions requiring use of force needing a greater level of justification.

Chapter 6: Conclusion and Recommendations

Conclusion

This thesis has explored the utilisation of the NDM by practitioners in one Police Service from England and Wales, looking at how officers considered the NDM intuitively in relation to naturalistic decision making, how they used the model through investigations and on response, and lastly whether they felt the model was more applicable to investigations or response policing. Although participants across all PIP levels described the subconscious use of the NDM, it is suggested from analysis of the interviews that they are instead using their past experiences to recognise cues in the current situation and apply an appropriate action, in line with Naturalistic Decision Making. Officers themselves highlighted that in use of force situations they felt they did not have the time to consider the model but in reflection could identify the elements of the NDM in their actions. This is likely to be a demonstration of ex post facto use, carrying out actions and then retroactively seeking justification. Conscious use of the NDM can again be explained by naturalistic decision making. Officers described explicitly thinking through the model in unfamiliar situations, where having no past experience to develop patterns from means practitioners are required to take an analytical approach in order to assess and understand the circumstances. This was identified in the answers of PIP 1 officers who faced unfamiliar scenarios on response due to lack of experience, but also in the responses from PIP 3 officers, who referred to using the model to make strategic decisions. These high-level decisions, such as those in critical incidents that are likely to have an impact on the public's perception of the police, are often so unique that there is no previous experience that an officer could have identified patterns from, requiring them to analytically assess their situation using the NDM.

The training received by participants on the NDM was frequent, with the model being reiterated on most courses from initial training at the Police College to national courses for SIOs. Whilst a couple of participants described the college as an inappropriate environment to learn to use the NDM, most officers had neutral views on their training experience, simply describing the duration of courses and the frequency of which the NDM was brought up. The majority of participants however, stated how the use of the NDM was emphasised during officer safety training for use of force situations. This is a likely

consequence of the NDM being derived from the CMM, a model solely designed to justify use of force actions. Officers did describe how they felt supported by using the NDM to justify decisions and actions as it created an audit trail and offered them accountability. Although participants did not explicitly state each step of the NDM in records such as pocket notebooks or crime reports, many referred to using the model as a structure when recording things such as decision rationale. An Inspector on response even described a process of externalisation by audibly going through the model and having it recorded to their body worn camera, suggesting that the primary benefit practitioners gain from the NDM is the provision of accountability for decisions. The true impact of the NDM on the use of hypotheses is unknown, but this exploratory research has demonstrated that some practitioners use the information gathering and assessment stages of the model to prove or disprove existing hypotheses by testing available evidence. No guidance is provided by the NDM on how to generate hypotheses, so further research is recommended to identify what process practitioners from E&W use to develop their theories. As well as concepts taken from the SHDCI, results from this research should be considered for implementation in an investigative decision-making model as a display of EBP and continuing professionalisation of the police. Participants who believed the NDM needed changing for it to be made applicable to investigations wanted the inclusion of investigative knowledge and strategies in order to support officers in developing and following lines of enquiry.

Practitioners from this research are able to elaborate on the discussion of whether the NDM is more applicable to response situations or criminal investigations from a professional's point of view. The majority of detectives in this study, at PIP levels 2 and 3, believed the model to be more applicable to response policing due to its usefulness at justifying actions in use of force scenarios such as tactical operations and firearms incidents. Those who did acknowledge the model's use to investigations referred to using it to justify one off strategic decisions, rather than applying it to the greater number of decisions that occur in more complex investigations. Participants in PIP 1 who believed the model to be more applicable to investigations did so because of the ability to take time to think through decisions, rather than having to provide a rapid action. It would be interesting to see if they hold the same beliefs if and when they themselves reach the levels of Serious and Complex or Major crime investigations.

Recommendations

For future research:

1. Replicate this study with a number of Police Services in England and Wales simultaneously to identify if practitioner perspectives are the same nationwide. This report is limited to one Police Service and therefore cannot generalise any arguments to all officers nationally.
2. Explore the way in which practitioners from England and Wales generate hypotheses during investigations by examining decision logs with a focus on identifying differences in the use of the NDM between PIP levels. This would act as a blend of this research and that of Dando and Ormerod (2017), where supporting or contradicting arguments could be drawn against the claims of the College of Policing that the NDM is useful for investigations.
3. Subject the NDM and other decision-making models to empirical research. This report is only a starting point for empirical research into the NDM and its arguments can only be supported by subsequent studies.

For the College of Policing:

1. Design and empirically test a version of the NDM that is specialised for criminal investigation, incorporating a stage that focuses on the generation and testing of hypotheses using both relevant research such as the SHDCI and perspectives from practitioners likely to use the model. This would help to make the NDM more applicable to investigations, as this research has identified a tendency for practitioners to favour the model for response situations.
2. Introduce the necessity to record rationale for decisions into the NDM, including the decisions to not take action, in order to improve the audit trail and provide accountability and transparency. As highlighted by this research, the NDM does not explicitly mention recording of decisions or rationale but it is essential for transparency and accountability.

For the Police:

1. Review training of the NDM for recruits to ensure more applicable practical scenarios are provided to reduce the possibility of redundant deliberation and improve the confidence of

novice officers when first on response, as participants in this research noted feeling overwhelmed by the NDM when first attending incidents.

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Appendix A – Code of Ethics

Policing principles

- Accountability
- Fairness
- Honesty
- Integrity
- Leadership
- Objectivity
- Openness
- Respect
- Selflessness

Standards of professional behaviour

- Honesty and integrity
- Authority, respect and courtesy
- Equality and diversity
- Use of force
- Orders and instructions
- Duties and responsibilities
- Confidentiality
- Fitness for work
- Conduct
- Challenging and reporting improper conduct

Code of Ethics, taken from College of Policing (2014a)

Appendix B – Interview Schedule

Interview schedule

My name is Joshua Edwards, I am a student at Canterbury Christ Church University under the supervision of Dr Martin O'Neill. This interview is to give you the opportunity to voice your opinions of the National Decision-Making Model and how you think it is relevant to the criminal investigations you conduct. I will be interviewing detectives across PIP levels 1,2 and 3 to identify how attitudes vary at different levels of investigation. The interview should last about 30 minutes. The research will be used to create a better understanding of decision-making during investigations. Please remember this interview is voluntary.

1. What is your understanding of the NDM?
 - a) What do you think its purpose is?
2. Can you outline what training you have had on the use of the NDM?
3. What is your opinion of the NDM?
4. When do you use the NDM?
 - a) Do you record your use of it?
 - b) What kind of decisions are you using the NDM for?
5. What sets the NDM apart from other decision-making models is the central code of ethics. Can you describe the ethics you think are important to criminal investigations?
6. How far do you agree that the NDM is useful in all policing decisions?
7. How do you think the NDM has affected criminal investigations?
8. Do you use any other processes or models of investigation?
9. How do you ensure that you are exploring all relevant hypotheses (alternative scenarios) appropriately?
10. A common theme in poor investigations is the presence of cognitive biases e.g. confirmation bias, tunnel vision. How do you ensure that these biases do not influence your decision making?
11. When your decision-making has been scrutinised, how do you justify your decisions?
12. How do you review your own decisions or that of the team you work with?
13. If there was a decision-making model specialised for criminal investigations, what would you want it to include?

I appreciate the time you have given for this interview. If there is anything else you would like to mention please say so. The findings of the research will be published later in the year and a separate report can be provided to you upon request by contacting je258@canterbury.ac.uk. You may withdraw your participation at any time by contacting me. Thank you.

Ethics ETH1920-0015: Mr Joshua Edwards : Decision

Sent on **31 Mar 2020** by **Dennis Nigbur**

[Download as PDF...](#)

Mr Joshua Edwards

School of Law, Criminal Justice and Policing

Faculty of Social and Applied Sciences

31st March 2020

Dear Joshua

Confirmation of ethics approval: Policing –What officers think of the National Decision-Making model and its usefulness at making decisions in volume crime investigations, serious and complex investigations and major crime investigations

Your ethics application complies fully with the requirements for ethical and governance review, as set out in this University's Research Ethics and Governance Procedures, and has been approved.

You are reminded that it is your responsibility to follow, as appropriate, the policies and procedures set out in the [Research Governance Framework](#) and any relevant academic or professional guidelines.

Any significant change in the question, design or conduct of the study over its course will require an amendment application, and may require a new application for ethics approval.

It is a condition of approval that you **must** inform ethics@canterbury.ac.uk once your research has completed.

Wishing you every success with your research.

On behalf of

Faculty of Social and Applied Sciences Ethics Panel

dennis.nigbur@canterbury.ac.uk

Appendix D – Participant Information Sheet



Officer perceptions of the National Decision-Making model and its usefulness at making decisions in volume crime investigations, serious and complex investigations and major crime investigations

PARTICIPANT INFORMATION

A research study is being conducted at Canterbury Christ Church University (CCCU) by Mr Joshua Edwards who is being supervised by Dr Martin O'Neill

Please refer to our [Research Privacy Notice](#) for more information on how we will use and store your personal data. A hard copy of the Research Privacy Notice can be provided upon request.

Background

The aim of this study is to gather practitioner perspectives on the applicability of the National Decision-Making Model (NDM) to criminal investigations by interviewing [REDACTED] officers responsible for volume crime, serious and complex crime and major crime investigations. It is essential that investigators have the best possible tools to aid in the decision-making process, so this research is intended to explore practitioner perspectives relating to the impact the NDM has had on their investigations.

What will you be required to do?

Participants in this study will take part in a virtual one-to-one semi-structured interview which will be audio recorded. You will be given an identifying letter e.g. participant A to ensure anonymity. Questions will be related to your use of the NDM during investigations and your opinions on its applicability and effectiveness at aiding you in making decisions during criminal investigations. It is expected that the interview will last between approximately 45-60 minutes.

To participate in this research you must:

1. Be employed by [REDACTED]
2. Be trained to PIP level 1 and have experience of managing volume crime investigations, or
 - o Be trained to PIP level 2 and have experience of managing serious and complex crime investigations, or
 - o Be trained to PIP level 3 and have experience managing major crime investigations
3. Be willing to be audio recorded
4. Be willing to answer questions related to your personal opinions and use of the NDM

Procedures

You will be asked to take part in a virtual interview that will be conducted through Skype and will be audio recorded. Questions will relate to your experience with the NDM during criminal investigations. You are entitled to stop the interview at any time and to withdraw from the study if you no longer wish to participate up to 2 weeks after you take part. Participation is completely voluntary and you will not be identified in any write up of the research.

Feedback

The results will be written up in the form of a report or other publications. If you are interested in seeing this, please contact the researcher who will provide you with a copy.

Confidentiality and Data Protection

The following categories of personal data (as defined by the [General Data Protection Regulation](#) (GDPR)) will be processed under the lawful reasoning of consent:

- Your name will only be used on the consent form and if you want to withdraw.

Data can only be accessed by, or shared with:

- Myself as the principle researcher, my supervisor and my examiner

The identified period for the retention of personal data for this project:

- Audio recordings will be erased once the audio recordings have been transcribed.
- All data is destroyed after 5 years
- Consent forms are destroyed after completion in March 2021

If you would like to obtain further information related to how your personal data is processed for this project please contact Mr Joshua Edwards at je258@canterbury.ac.uk.

You can read further information regarding how the University processes your personal data for research purposes at the following link: Research Privacy Notice -

<https://www.canterbury.ac.uk/university-solicitors-office/data-protection/privacy-notices/privacy-notices.aspx>

Dissemination of results

The finished thesis will be published in the CCCU library and the research will also be written up as a report, available upon request.

Process for withdrawing consent to participate

You are free to withdraw your consent to participate in this research project for up to 2 weeks after participating without having to give a reason. To do this please email je258@canterbury.ac.uk stating that you wish to withdraw from the research. .

Any questions?

Please contact Joshua Edwards at je258@canterbury.ac.uk or my supervisor Dr Martin O'Neill at martin.oneill@canterbury.ac.uk.

Appendix E – Consent Form



CONSENT FORM

Title of Project: Officer perceptions of the National Decision-Making model and its usefulness at making decisions in volume crime investigations, serious and complex investigations and major crime investigations

Name of Researcher: *Joshua Edwards*

Address: *Faculty of Social and Applied Sciences, Canterbury Christ Church University, North Holmes Road, Canterbury, Kent, CT1 1QU*

Email: *Je258@canterbury.ac.uk*

Please initial box

1. I confirm that I have read and understand the participant information for the above project and have had the opportunity to ask questions.
2. I confirm that I agree to any audio and/or visual recordings.
3. I understand that any personal information that I provide to the researchers will be kept strictly confidential and in line with the University [Research Privacy Notice](#)
4. I understand that my participation is voluntary and that I am free to withdraw my participation up to 2 weeks after participating, without giving a reason.
5. I agree to take part in the above project.

Name of Participant:	Date:	Signature:
Researcher: Mr Joshua Edwards	Date: 16/05/2020	Signature: Mr J. Edwards

Copies: 1 for participant
1 for researcher

Appendix F – Data Sharing Agreement



Information agreement and data protection statement between
Joshua Edwards (MSc by Research Student, Canterbury Centre for
Policing Research, Canterbury Christ Church University) and [REDACTED]
[REDACTED]

The purpose of this document is to outline the roles and responsibilities of parties involved in this research and to outline the data protection and data security arrangements to protect the personal data of those participating in research with Canterbury Christ Church University.

Project Title:

Officer perceptions of the National Decision-Making model and its usefulness at making decisions in volume crime investigations, serious and complex investigations and major crime investigations

Principle Researcher:

Joshua Edwards

Research Supervisor(s):

Dr Martin O'Neill, Professor Steve Tong

Data Subjects:

Officers from [REDACTED] responsible for investigating volume crime investigations (PIP L1), serious and complex crime investigations (PIP L2) and major crime investigations (PIP L3)

Data Controller:

Canterbury Christ Church University

Data Processor:

Joshua Edwards

Data Protection Officer:

Robert Melville
Assistant University Secretary
Canterbury Christ Church University
Rochester House
St George's Place
Canterbury
CT1 1UT

E-mail: dp.officer@canterbury.ac.uk

Telephone: 01227 767700

Legal Basis of data collection:

Consent

Methodology:

One-to-one semi-structured virtual interviews with officers from [REDACTED] responsible for investigating volume crime, serious and complex crime and major crime. Interviews to be audio recorded, transcribed and analysed using NVivo software to identify key themes and practitioner perspective on the usefulness of the National Decision-Making Model in investigative decision making.

Details of Data Security and Data Handling to ensure GDPR Compliance:

- Informed consent will be gained from all participants via an information sheet which participants can retain and the signed consent forms,
- Data Processor(s) to have completed University e-learning on GDPR.
- Data Processor(s) to be security vetted by force.
- Force will be provided with details of Data Protection Policies.
- CCCU will be the only agency outside of [REDACTED] to receive the information, and only the staff from within CCCU's Department of Law Criminal Justice and Computing actively involved in the research shall receive the information.
- Information received will be stored in an independent encrypted database with password protection and access restricted to the named researchers only.
- The data will not be stored for longer than is needed for the research project and will be destroyed/deleted in accordance with University Data Protection Policy.
- Hard copies of data (surveys) will be stored in a locked cabinet to which only the researcher/data processor will have access.
- If electronic data needs to be physically transported between locations encrypted USB sticks provided by the University will be used.
- Consent forms which contain names and contact details to be collected and transported separately from completed surveys.
- Consent forms and surveys will be coded to allow any data subject to withdraw their data at any time (GDPR requirement)
- Consent forms to be transported in a lockable briefcase and stored separately from any other data.
- No attempt will be made to match consent forms to completed surveys to ensure that raw data is suitably anonymised (with right to withdraw data accepted as above).
- No attempt will be made to identify individual participants from demographic data.
- The identity of subjects taking part in interviews will be kept strictly confidential.
- Only general trends will be reported in any writing.
- Recordings of interviews will be deleted once they have been transcribed to avoid voice-identification.
- An auditable log will be kept of data access and processing.
- The physical data will be stored until successful completion of the work and only anonymised responses will be stored for future use, if deemed necessary.
- University data protection policies will be strictly complied with.



Signed – Principle Researcher

A handwritten signature in black ink on a light brown rectangular background. The signature appears to read "J Edwards".

Name: Joshua Edwards

Date: 10/12/2019

Signed on Behalf of CCCU

Name:

Position:

Date:

Signed on Behalf of



Name:

Position:

Date: