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Walden University

College of Social and Behavioral Sciences

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Melissa A. Roy

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Walden University
2019

Abstract

Inferential Intuitive and Analytic Thought Processes in Criminal Investigative Decision

Making

by

Melissa A. Roy

MA, Walden University, 2017

BS, University of Phoenix, 2014

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Forensic Psychology

Walden University

June 2019

Abstract

According to previous researchers police detectives' decisional thought processes correlate with investigative accuracy and these decisional thought processes consist of inferential intuitive and analytic thought processes. Researchers have established investigative decisional dual process use but have not established United States police detectives' conceptualization of decisional inferential intuitive and analytic thought processes in criminal investigations in which they partook. The purpose of this qualitative study was to explore 11 United States police detectives' conceptualizations of decisional thought processes based on criminal investigations in which they partook. Dual process theory framed this study. Using narrative inquiry research, individual face-to-face interviews were analyzed thematically and structurally. The results of this analysis indicated significant themes associated with inferential intuitive and analytic thought process conceptualizations. Themes that were established were: (a) inferential intuitive starting points, (b) inferential intuitive information, (c) inferential intuitive experience driven, (d) inferential intuitive value, (e) inferential intuitive fallible, (f) analytic mandatory, (g) analytic purpose, (h) analytic collaborative. Police detectives, as well as society as a whole, may benefit from the results of this study through enhanced investigative training and education. Enhanced investigative training and education may result in a reduction of investigative decisional errors.

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Dedication

This dissertation is dedicated to the individuals in law enforcement and for the service and protection they provide society. May you remain safe in your services to society. This dissertation is also dedicated to the individuals who have been wrongfully prosecuted and incarcerated. May your injustices be rectified. God speed to all!

Acknowledgments

In appreciation to my family; Kevin, Phillip, Averie, Amanda, and Jacob who experienced along with me the trials, tribulations, and successes of my doctoral and dissertation journey. My accomplishments are for you and I could not have completed this journey without you all. Also, in appreciation to Dr. Wayne Wallace, Dr. Peggy Samples, and Dr. Robert Meyer for getting me to the finish line! Your knowledge, guidance, and support are greatly appreciated.

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Chapter 1: Introduction to the Study

Introduction

Criminal investigations have a significant impact on societal safety. Accurate and efficient criminal investigations predominantly lead to arrests, convictions, and imprisonment of criminals (Rossmo, 2016). The decisions made by police detectives play an important role in accomplishing an accurate criminal investigation (Wright, 2013). Decisional thought processes are multifaceted and fluid consisting of analytic and intuitive thought processes (Allen, 2014; Fahsing & Ask, 2013; Sahm & Weizacker, 2016). Multiple researchers have examined the use of analytic, intuitive, and analytic-intuitive thought processes to research which thought process is associated with increased accuracy in relation to decision making (Brogaard, 2014; Calabretta et al., 2017; Olds & Link, 2016; Pennycock et al., 2015; Pretz, et al., 2014; Worrall, 2013). Researchers have recently begun to study these thought processes respective of strategic decision-making by police detectives during criminal investigations (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013).

Researchers have not come to a consensus in data with respect to the use, reliance, and accuracy of decisional thought processes of police detectives. Rassin (2016) completed a quantitative study on the use of analytic thought processes by police investigators wherein he concluded analytic thought processes were superior to intuitive thought processes in decision-making. In contrast, Sahm and Weizacker (2016) found intuitive thought processes outperformed analytic thought processes. Wright (2013)

found that police detectives utilize both intuitive and analytic thought processes and that each of these thought processes can result in accurate decision-making.

Though researchers have recently focused on these decisional thought processes in relation to investigative decision-making, a focus on detectives' conceptualizations of these thought processes is under-researched (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). Individual conceptualizations are collaborative understandings based on experiences, culture, beliefs, age, and perceptions (Hampton & Passanisi, 2016). It is important to investigate individual police detectives' conceptualizations because their conceptualizations are their realities (Rubin & Rubin, 2012). Fahsing and Ask (2013) noted that participant police detectives had different conceptualizations of intuition. Some police detectives negated the legitimate use of intuitive thought processes whereas others accepted its usefulness. Multiple implicit and explicit factors are associated with conceptualizations of decisional thought processes and as such further studies in this regard are warranted (Pennycock, et al., 2015; Winston et al., 2017).

This chapter will contain information regarding the phenomenon of intuitive and analytic thought processes as these thought processes relate to decision-making. The chapter serves as an overview for this study's problem statement, nature of study, research question, theoretical framework, significance, and possible social impact. This section will also include key definitions, operational terms, and limitations of this study. This chapter will provide the foundational components related to this study on police detectives' conceptualizations of decisional intuitive and analytic thought processes used during criminal investigations.

Background

Though previous research data vary on the beneficial use of intuitive and analytic thought processes, most researchers agree on the existence and use of both of these thought processes in relation to decision-making (Brogaard, 2014; Calabretta et al., 2017; Fahsing & Ask, 2013; Olds & Link, 2016; Pennycock et al., 2015; Pretz, et al., 2014; Rassin, 2016; Worrall, 2013; Wright, 2013). According to dual process theory, decisions derive from two paradoxical thought processes (Calabretta et al., 2017). Intuitive or Type I thought processes are in the simplest of forms, unconscious, and immediate. Inferential intuitive thought processes are immediate and unconscious; however, they are cognitive experience-based schemas and therefore extend beyond a mere hunch (Brogaard, 2014; Calabretta et al., 2017). Analytic or Type II thought processes are time consuming, cognitive, and reflective (Evans & Stanovich, 2013; Pennycock et al., 2015). Analytic thought processes involve task identification, information collection, and determination of logical conclusions (Elbanna & Fadol, 2016; Olds & Link, 2016).

Improper reliance on either thought process may contribute to inaccurate decision-making. Contextual factors are associated with thought process usage and accuracy. According to Elbanna and Fadol (2016), the importance and certainty of decision-making correlate with thought process usage. Individuals will access analytic thought processes when faced with decisions that have significant consequences. Individuals will normally access intuitive thought processes when faced with decisions surrounded by uncertainty. According to Wright (2013), domain specific experience of the decision-maker effect use, reliance, and accuracy of intuitive thought processes.

Wright found that inexperienced police detectives used, relied upon, and were less accurate in intuitive-based decisions whereas experienced police detectives used, relied upon and were more accurate in intuitive-based decisions.

Effective decision-making by police detectives is a significant factor associated with successful criminal investigations (Rassin, 2016; Rossmo, 2016; Wright, 2013). Successful criminal investigations ultimately result in increased societal safety (Rossmo, 2016). Police detectives' decisions during criminal investigations consist of intuitive thought processes and analytic thought processes or the combination of both. The key to accurate decision-making may lie in the applicability of thought process usage (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). An understanding of police detectives' conceptualizations of thought process uses and reliance in relation to investigative decision-making may provide insight into this phenomenon.

Problem Statement

Inaccurate decision-making by police detectives during criminal investigations is the focus problem of this study. Inaccurate decision-making hinders accurate criminal investigations and is inconsistent with investigative and prosecutorial goals (Rossmo, 2016). Though police detectives process most criminal investigations accurately, a noteworthy number of inaccurate criminal investigations continue to occur. Inaccurate criminal investigations can lead to nonapprehensions, suspect misidentification, and wrongful convictions (Carter & Carter, 2016; Clow & Leach, 2013). It is for these reasons; police detectives must place a significant emphasis on the importance of their investigative decision-making (Brookman & Innes, 2013). Researchers have not yet

addressed United States police detectives' conceptualizations of decisional thought processes used and relied upon during criminal investigations in which they partook. This study addressed this gap in research.

Inaccuracies in decisional thought processes by detectives during criminal investigations can inhibit a successful criminal investigation, which may lead to nonapprehensions, suspect misidentification, and wrongful convictions (Dietz & Ramsland, 2012; Rossmo, 2016). These consequences of decisional inaccuracies are detrimental to societal wellbeing (Kavanaugh, 2016). Crimes that remain unsolved leave criminals within communities to recidivate, often with increased severity and frequency (Palemo, 2015). Inaccurate suspect identifications and wrongful convictions harm the wrongfully accused. The detrimental effects to the wrongfully accused are obvious. These individuals endure the hardships of prosecution and the loss of freedoms and rights. Upon release, even with evidence of their innocence, exonerees continue to endure societal perceptions of guilt throughout most of their lives (Clow & Leach, 2013). Wrongful arrests and convictions harm society as well. These erroneous convictions instill mistrust in law enforcement, impede faith in the justice system, and present a financial burden to society (Kavanaugh, 2016).

Accurate decision-making by police detectives during criminal investigations is a significant factor associated with the accurate identification, prosecution, conviction, and incarceration of criminals (Wright, 2013). According to dual process theory, individuals have two thought processes, intuitive and analytic. Individuals access these thought processes when making decisions (Brogaard, 2014). Inferential intuitive thought

processes are more complex than simple hunch intuition yet less complex than analytic thought processes. Inferential intuitive thought processes are creative cognitions that help address the uncertainties and complexities of decision-making. These thought processes are tacit knowledge-based. Inferential intuitive thought processes, unlike analytic thought processes, originate from the subconscious and are immediate (Kahneman, 2011; Worrall, 2013). Analytic thought processes are structured and complex (Kahneman, 2011; Wright, 2013). These thought processes consist of problem identification, information collection, hypothesis development and assessment, and logical choice decisions. Analytic thought processes tend to be slow, methodical, information-based, and effortful (Olds & Link, 2016).

Researchers, who support the reflectionist perspective, argue the ability to think analytically signifies the superiority of humans over other species (Pennycock et al., 2015; Rassin, 2016). Rassin (2016) found that participants who utilized analytic thought processes were more conservative in their decisions and therefore reduced inaccuracies occurred. Based on these findings, Rassin argued in favor of the use of analytic thought process decision-making during criminal investigations. Lack of intuitive thought process measurement was a limitation of this study and Rassin suggested this limitation warrants further research.

According to unconscious thought theory, inferential intuitive thought processes can be superior to analytic thought processes because intuition is not limited to working-memory constraints (Pretz, et al., 2014). Wright (2013) completed a qualitative intuitive thought process study and found that while detectives strive to use analytic thought

processes, detectives access significant amounts of intuitive thought processes. Wright also found that approximately 64% of participants scored accurately while utilizing intuitive thought processes. Experienced detectives, while using intuitive thought processes, scored accurately more often than detectives with less experience. Calabretta et al. (2017) also supported this finding. Wright denoted intuition as a cognitive skill and an important aspect of police investigative decision-making. Wright suggested further research on inferential intuitive decision-making by detectives during actual criminal investigations would benefit studies related to investigative decision-making as this remains a current gap in literature.

Fahsing and Ask (2013) and Akinici and Sadler-Smith (2013) acknowledged the dual use of inferential intuitive and analytic thought processes in decision-making based on their studies of the decision-making thought processes of police detectives. Fahsing and Ask identified collaborative interchanging thought processes in their study of United Kingdom and Norwegian detectives. Akinici and Sadler-Smith noted similar findings as well as contextual factors associated with thought process usage. Contextual factors associated with decisional thought processes consist of personality, experience, time and cost constraints, decision uncertainty, and decision severity (Alison et al., 2013; Sahn & Weizacker, 2016). Fahsing and Ask also noted the reluctance of United Kingdom detectives to acknowledge the use of intuition in criminal investigations. The Norwegian detectives did not experience the same difficulty in the acknowledged use of intuitive decisional thought processes during criminal investigations. The authors suggested the need for further research on investigative intuitive and analytic thought processes

associated with decision-making in differing demographics and cultures (Akinci & Sadler-Smith, 2013; Fahsing & Ask, 2013; Sahm & Weizacker, 2016).

Researchers on analytic and inferential intuitive thought processes have provided significant data on these two thought processes in relation to decision-making (Brogaard, 2014; Calabretta et al., 2017; Olds & Link, 2016; Pennycock, et al., 2015; Pretz, et al., 2014; Worrall, 2013). Researchers have also applied existing literature on thought process usage to police detectives' decision-making in hypothetical situations (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). This qualitative study is unlike previous research studies on decisional thought processes of police detectives. This study investigated the conceptualizations of police detectives' decisional thought processes based on criminal investigations they have completed. This study focused on United States police detectives. Previous researchers have focused on police detectives in differing areas. Expanding research to United States police detectives may provide beneficial data because demographics is one contextual factor associated with the establishment of conceptualizations (Winston et al., 2017).

Literature Review

Substantial research data exist on intuitive and analytic thought processes. Dual process theorists have provided significant data on the intricacies of these two thought processes as well as how these processes relate and effect decision-making (Evans & Stanovich, 2013). Intuitive and analytic thought processes are paradoxical. The contradictory foundational basis of each thought process has called for the use of either intuitive or analytic thought processes. Recently researchers have supported the

collaborative use of intuitive and analytic thought processes. This collaboration and paradoxical acceptance may increase decisional accuracy (Calabretta et al., 2017).

Police detectives have enhanced decisional intuitive thought processes that exceed simple subconscious instincts, feelings, or premonitions. Evolved intuitive thought processes, also referred to as inferential intuitive thought processes, are perceptual, memory-based, and introspective intellectual seemings (Brogaard, 2014). Pretz, et al. (2014) stated inferential intuitive thought processes consist of information previously obtained analytically. These intuitive thought processes are stored within an individual's semantic memory. Semantic memory is an accumulated database of fact-based information obtained throughout an individual's lifetime that individuals access without forethought (Brogaard, 2014; Pretz, et al., 2014).

Elbanna and Fadol (2016) stated inferential intuition is a composite phenomenon of sensing and defined knowledge based on previous experiences. As such, experience increases the accuracy of inferential intuition (Brogaard, 2014; Pretz, et al., 2014; Wright, 2013). Decisions based on inferential intuitive thought processes are resistant to revision or change (Evans & Stanovich, 2013). Intuitive thought processes, inferential or otherwise, are subject to illusions, biases, and heuristics (Kahneman, 2011). Intuitive-based decisions by police detectives hinder prosecutorial efforts as these decisions lack substantiating evidence (Pogarsky et al., 2017; Wallace, 2015).

Analytic thought processes are structured and complex (Evans & Stanovich, 2013; Kahneman, 2011; Wright, 2013). These thought processes consist of problem identification, information collection, hypothesis development and assessment, and

logical choice decisions. Analytic thought processes tend to be slow, methodical, information-based, and effortful (Evans & Stanovich, 2013; Olds & Link, 2016). Analytic thought processes in decision-making are fact-based and reflective (Evans & Stanovich, 2013; Rassin, 2016). Fact-based decisions, wherein individuals analyze multiple possibilities, are more acceptable and effective within prosecutorial processes (Rassin, 2016; Rossmo, 2016; Wright, 2013). Analytic thought processes may hinder investigative decisions that must adhere to restricted timelines, are extremely complicated, and uncertain (Calabretta et al., 2017).

Most researchers who have completed studies on police detectives' decision-making acknowledge the use and importance of both analytic and inferential intuitive thought processes (Calabretta et al., 2017; Fahsing & Ask, 2013; Wright, 2013). Even with this consensus, researchers differentiate on usage and appropriateness. Wright (2013) found that detectives acknowledged they formed immediate inferential intuitive-based preliminary hypotheses upon presentations of crime scenes. Detectives then reflected, via analytic thought processes, to counteract any fallacies associated with their intuitive thought processes. Sahm and Weizacker (2016) reached similar conclusions wherein intuitive thought processes excelled at the beginning and end of situations. Fahsing and Ask (2013) found situational factors navigate thought process designation. Rassin (2016) argued decision-making should result from analytic thought processes only because intuitive thought processes do not derive from facts.

Contextual factors influence the use, reliance, and accuracy of inferential intuitive and analytic thought processes. Experience correlates with inferential intuitive accuracy

(Wright, 2013). Fahsing and Ask (2013) found both external and internal factors are associated with a transition of thought process usage. External factors consisted of availability of information, community and time pressures, and situational impact. Internal factors were experience, training, and personal characteristics. According to Elbanna and Fadol (2016), individuals under certain circumstances require flexible and expedient approaches to decision-making. Inferential intuition is a semi cognitive process that allows individuals to utilize their experience-based knowledge to bypass procedural time-consuming steps. Decisional factors, such as importance, uncertainty, and motive will influence some individuals' use of intuitive and analytic thought processes (Alison, et al., 2013; Sahm & Weizacker, 2016). According to Calabretta et al. (2017), inferential intuitive and analytic thought processes are different but equal in relation to decision-making.

Nature of Study

The goal of this qualitative study was to explore the conceptualizations of police detectives' decisional thought processes during criminal investigations. The nature of this study was narrative inquiry. Narrative inquiry consists of conversational style interviews between participants and researcher. I was able to observe and translate investigative experiences of detectives, which participants told through their narratives or stories, via verbal and nonverbal components (see Clandinin, 2016). Narrative inquiry results in rich data due to the transfer and sharing of knowledge between participants and researcher (Kohler-Riessman, 2008). Though using narrative inquiry reduces data generalizations, which was a limitation of this study, narrative inquiry best suited the

focus of this study (Clandinin & Connelly, 2000). This qualitative study explored narratives of participating detectives to obtain participants' conceptualizations (realities) concerning convergent and divergent thought processes relating to criminal investigative decision-making.

Participants in this study were police detectives who had completed at least one criminal investigation. To address this study's limitation of generalization, I sought participant diversity. Participants in this study consisted of police detectives from different demographics and organizational cultures. Researchers have shown demographics and organizational culture have a significant effect on decisional thought processes of police detectives (Fahsing & Ask, 2013; Winston et al., 2017). Obtaining participants from different locals and police cultures assisted in addressing limitations of generalization in this study. In addition, participants in this study varied in ethnicities, gender, age, and experience. These factors are also associated with differing decisional thought process use and reliance (Alison et al., 2013; Fahsing & Ask, 2013; Winston et al., 2017; Wright, 2013). The inclusion of a diverse population of participants enriched data from this study.

Data collection derived from semi structured open-ended questions asked to participants during individual face-to-face interviews. The inclusion of semi structured questions helped maintain uniformity and direction. The inclusion of open-ended questions allowed for individualistic conceptualizations through elaboration (see Sutcliffe, 2016). The insertion of the researcher is an integral component of data collection in narrative inquiry. Data for this study derived from the collaborative

conversation of participants and myself (see Clandinin, 2016). Data were analyzed via thematic and structural analysis. This triangulation of data increased this study's trustworthiness (Koehler-Riessman, 2008).

Purpose of Study

The purpose of this qualitative study was to explore police detectives' conceptualizations of inferential intuitive and analytic thought processes when making decisions during criminal investigations in which they partook. Research studies have produced data on decisional intuitive and analytic thought processes from multiple perspectives (Brogaard, 2014; Calabretta et al., 2017; Olds & Link, 2016; Pennycock et al., 2015; Pretz, et al., 2014; Worrall, 2013). Research data also exist on decisional thought processes and law enforcement, although in considerably lower proportions (Fahsing & Ask, 2013, Brookman & Innes, 2013; Rassin, 2016; Wright, 2013). Significant gaps in literature exist regarding police detectives' conceptualizations of intuitive and analytic thought processes in relation to decision-making during criminal investigations (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). This study addressed a current gap in literature by exploring United States' police detectives' conceptualizations of decisional inferential intuitive and analytic thought processes during criminal investigations in which they partook.

The conceptualizations established via participant narratives in this study provided insights into detectives' subjective realities. Each detectives' experiences, perceptions, culture, and environments influenced these subjective realities (see Rubin & Rubin, 2012). A better understanding of detectives' realities may provide significant

insights into the importance, if any, detectives place on each decisional thought process. A better understanding may also provide insights on perceived motivating factors associated with thought process usage and reliance. Data retrieved from this study sought to add to existing research data on investigative decisional thought processes that may lead to more effective criminal investigations.

Research Question

Research Question: How do United States police detectives conceptualize inferential intuitive and analytic thought processes in decision making during criminal investigations?

Theoretical Framework

Dual Process Theory

The concepts of dual process theory state that individuals have two distinct information- processing systems (Kahneman, 2011). These systems consist of automatic or intuitive (Type 1) thought processes and controlled or analytic (Type 2) thought processes. In the traditional view, Type I thought processes are implicit and automatic coming from an individual's subconscious. Type II thought processes are explicit and calculated derived from outside an individual's subconscious. Dual process theory has gained much attention throughout its existence and has branched out in multiple directions (Evans & Stanovich, 2013; Kahneman, 2011; Pennycock et al., 2015).

Evans and Stanovich (2013) argued that individuals utilize both intuitive (Type 1) and analytic (Type 2) thought processes in decision-making. According to default-interventionist theory, intuitive thought processes yield default responses wherein

spontaneous decisions occur. These spontaneous decisions will remain constant unless analytic thought processes override those decisions (Thompson & Johnson, 2014). Intuitive thought processes have distinct and paradoxical perimeters to analytic thought processes (Blackburn, 2016). Intuitive thought processes are instinctive, immediate, automatic, and nonconscious. Intuition is biased and associative because these thought processes derive from experiences and personal beliefs. Intuition is contextual and independent of cognitive ability (Evans & Stanovich 2015; Olds & Link, 2016). Analytic thought processes are reflective, slow, deliberate, and can be tedious. Analytic thought processes are considered to be higher ordered and more accurate. Analytic capacity may be limited to available information and cognitive ability. Decisions made via analytic thought processes are rule and experienced based (Evans & Stanovich, 2013; Kahneman, 2011; Olds & Link, 2016). Contextual factors affect the use of, reliance on, and accuracy of both intuitive and analytic thought processes. This inclusion makes it difficult to determine whether one thought process correlates more positively with accuracy than the other (Elbanna & Fadol, 2016).

In the study by Calabretta et al. (2017), the authors advocated for an acceptance of the paradoxical relationship between intuitive and analytic thought processes. Acceptance of the differences between these two thought processes will improve decision-making based on collaboration. Intuitive and analytic thought processes are both significant thought processes associated with decision-making. Accurate decision-making may not require individuals to negate one thought process in acceptance of the other. Mijovic-Prelec and Prelec (2010) further supported this concept of collaboration

of thought processes in a self-signaling game study wherein dual mindset mechanisms resulted in accurate decision-making.

Theoretical evolution is unavoidable in psychological research. Dual process theory is without exception. Researchers have dissected the components of dual process theory resulting in additions, subtractions, and re-categorizations. Critics of dual process theory argued these revisions have not clarified the theory and in fact have done just the opposite (Evans & Stanovich, 2013). “We propose that the different two-system theories lack conceptual clarity, that they are based upon methodological methods that are questionable, and that they rely on insufficient (and often inadequate) empirical evidence.” (Keren & Schul, 2009, p. 534). Despite any arguments to the contrary, dual process theory based on the assumptions of Evans and Stanovich (2013), Kahneman (2011), and Calabretta et al. (2017) efficiently theorize decisional thought processes and served as a strong theoretical framework of this study.

Expected Utility/Rational Choice Theories

Expected utility and rational choice theories seek to provide explanations for the way in which individuals make decisional choices. Utilitarian theory is the basis for these theories. Utilitarian theory purported individuals make choices based on obtaining utility or happiness. Expected utility and rational choice theories assume that though there may be multiple options, one decision will result in greater utility (Herbert, 2015; Pettigrew, 2016). Rational choice theory is based on three basic conditions; completeness, transitivity, and maximization. Completeness refers to preference order; meaning that one choice, even if slightly, is favored over the other ($x > y$). Transitivity

refers to the relationship of preferred order. This means that if decision X is preferred over decision Y and decision Z is preferred over decision X then it is also preferred over decision Y ($z > x > y$). Maximization conditions means that a person will decide on the most preferred choice (Herbert, 2015). Expected utility states that individuals have internal and external attitudes toward decision-making. Internal attitudes relate to preference order, similar to completeness, and external attitudes refer to outcome desire (Pettigrew, 2016).

Critics of these theories state that the exclusive goal of utility or maximum wellbeing does not allow for the allocation of scientific activity. Meaning if everyone is seeking maximum wellbeing how can maximum societal wellbeing be realized (Khalil, 2012). Many argue though that utility is not exclusively hedonistic (Herbert, 2015). Decisions-makers make rational choices based on the most optimal outcome in relation to the current situation. Individuals will calculate decisions by assessing probabilities and determining how advantageous each probability is to the task-at-hand (Wallace, 2015). The assumptions of utility and rational choice theories add to a solid theoretical framework for this study on decisional thought processes of police detectives during criminal investigations (Gintis, 2015; Herbert, 2015; Pettigrew, 2016).

Definitions

Analytic thought process: One of the two thought processes associated with decision-making as described in dual processing theory. This thought process is reflective, slow, and methodical (Evans & Stanovich, 2013)

Community pressure: The pressure society places on police detectives to accurately and expeditiously process criminal investigations (Fahsing & Ask, 2013).

Conceptualization: A person's reality based on his or her perceptions and influenced by implicit and explicit contextual factors (Rubin & Rubin, 2012).

Contextual factors: Implicit and explicit factors that influence. With respect to this study, these factors influence thought process use and reliance and include perceptions, experiences, culture, gender, demographics, time-restraints, and organizational and social pressures (Alison et al., 2013; Elbanna & Fadol, 2016).

Criminal investigations: Process wherein police detectives obtain evidence about a particular crime (Dondo & Ormerod, 2017).

Decision-making: Refers to when detectives make a determination based on multiple choices (Wright, 2013)

Investigative experience: Refers to the number of investigations police detectives have completed (Wright, 2013).

Heuristics: Factor associated with intuitive thought processes causing reliance on mental short cuts in investigative decision-making (Pogarsky, et al., 2017).

Inferential Intuitive thought process: One of the two thought processes associated with decision-making as described in dual processing theory. This thought process is nonconscious, immediate, and experienced based (Elbanna & Fadol, 2016).

Narrative inquiry: A qualitative methodology wherein data collection and analysis result from participants' personal narratives with the interaction of the researcher (Clandinin, 2016).

Organizational culture: Refers to specific police department cultures based on size, local, and legislature policies and procedures (Terpstra & Schaap, 2013)

Police detective: A police officer who has received specialized investigative training and participates in criminal investigations (Terpstra & Schaap, 2013).

Reflectionist perspective: Analytic thought process activation wherein multiple options are explored (Pennycok et al., 2015).

Societal wellbeing: Refers to when society is protected against harm (i.e. when criminals are arrested and incarcerated); when society is improved (Kavanaugh, 2016)

Thought process designation: choice of intuitive or analytic thought process in decision-making (Calabretta et al., 2017).

Utility: Refers to optimal outcome of police detectives' decisions (Pettigrew, 2016).

Wrongful conviction: Inaccurate arrest, charge, and conviction of an individual (Clow & Leach, 2013).

Assumptions

This study is reliant upon multiple assumptions pertaining to law enforcement, law enforcement protocols, criminal behaviors, decisional thought processes, and conceptualizations. Participants in this study were police detectives. This study assumed that police detectives are educated and well trained in the specialized area of criminal investigations. This specialization includes but is not limited to forensic knowledge, criminal behaviors, investigative evidence processing, departmental protocols, and local

and state laws. This study assumed participants' goals were to investigate crimes accurately.

Based on the theoretical framework of this study, it was assumed that police detectives have decision-making capabilities based on utility (Pettigrew, 2016). Police detectives will instantaneously process, without forethought, the number, order, and preference of available options. Police detectives make decisions on these available options as well as how strongly he or she desires a particular outcome. It was assumed that each investigative decision, however simple or complex, originated from police detectives' desires to reach optimal utility (Herbert, 2015; Pettigrew, 2016). It was also assumed that optimal utility is not hedonistic. Optimal utility is equivalent to efficient and accurate criminal investigations (Herbert, 2015).

The prominent assumption of this study was that individuals have dual thought processes. These thought processes are intuitive and analytic (Evans & Stanovich, 2013; Kahneman, 2011). This study assumed police detectives use both intuitive and analytic thought processes and that both these thought processes are involved in investigative decision-making (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). Based on previous research studies, this study was completed based on the assumption that there are contextual factors associated with thought process use and reliance including experience, expectations, time restraints, and decisional complexity. This study also operated under the assumption that conceptualizations are individual perceptions that make up individuals' multi-faceted realities (Rubin & Rubin, 2012).

Limitations

Generalizability was the prominent limitation of this study due to methodology, focus, and demographics. The methodology for this study is qualitative. Qualitative research provides rich data, however, that data are individualistic (Ravitch & Mittenfelner-Carl, 2016). Conceptualizations were the focus of this study. Conceptualizations are personal individualistic realities. These factors promoted quality rich individualistic data that were inconsistent with generalizability of data. Participants' culture, religious beliefs, moral compass, gender, age, and professional and personal experiences may have affected data of this study (see Ravitch & Mittenfelner-Carl, 2016). Demographics was also a generalizability limitation in this study. Even though participants were from differing law enforcement organizations within different states, participants were only from the Pacific North and Southwest coasts. Data realized in this study lack direct applicability in differing demographics (Fahsing & Ask, 2013; Winston et al., 2017).

Other possible limitations of this study revolved around the transpiring of time. This study obtained data from police detectives' experienced criminal investigations. As these are past investigations, data were reliant upon each participant's memory. Although police detectives' memories have shown superior to civilians, participants' abilities to accurately recall memories may have had a significant effect on this study's data. In addition, people grow and evolve over time. The perceptions of participants at the times of their interviews may not equate to their perceptions when they made their

investigative decisions. This perceptual difference may have affected the data collected in this study (Lewinski et al., 2016; Vredeveltdt et al., 2017).

Significance

This study is significant because it addressed gaps in research on decisional thought processes of police detectives during criminal investigations. In studies on decisional thought processes of police detectives, researchers primarily focused on detectives within the United Kingdom, Norway, and other countries outside the United States. Expanding research on investigative decisional thought processes to include detectives within the United States addressed a current gap in literature. Expanding research to include different locations is significant because demographics and culture affect detectives' decisional thought processes. This study provided data on United States' law enforcement organizational structure, culture, protocols, laws, policy, and state versus federal implementation of criminal justice. This logistical expansion will add to research data and possibly increase generalizability of data on police detectives' decisional thought processes (Meissner, et al., 2014; Vallano et al., 2015; Verhoeven & Stevens, 2012).

This study is also significant because it investigated both intuitive and analytic thought processes of decisions made by detectives during investigations in which they partook. Previous researchers of studies on inferential intuitive and analytic thought processes have focused on these decisional thought processes either individually or in contrast to each other (Calabretta et al., 2017; Rassin, 2016; Sahm & Weizacker, 2016). This study focused on both inferential intuitive and analytic thought processes with no

pre-established hypothesis on contradiction or collaboration. In addition, previous research studies involved hypothetical investigative scenarios. Participants' conceptualizations in this study derived from criminal investigations detectives have completed. The inclusion of lived experiences increased credibility of data (see Rassin, 2016, Wright, 2013). This qualitative study provided information-rich data on United States' police detectives' conceptualizations of intuitive and analytic thought processes centered on investigations in which they partook. Data from this study may provide a better understanding of decisional investigative thought processes and identification of detectives' decisional thought processes that are inconsistent with accurate and efficient criminal investigations (Olds & Link, 2016).

Summary

Accurate investigations have a significant impact on societal wellbeing (Clow & Leach, 2013; Kavanaugh, 2016). Decisions made by police detectives during criminal investigations have a significant impact on investigative accuracy (Wright, 2013). Decisions consist of intuitive and/or analytic thought processes (Kahneman, 2011). Intuitive thought processes are nonconscious and immediate while analytic thought processes are conscious and reflective. Intuitive thought processes are subject to illusions, biases, and heuristics. Analytic thought processes are reflective, can cause cognitive strain, and are time consuming (Evans & Stanovich, 2013; Pennycock et al., 2015; Pretz, et al., 2014; Worrall, 2013). Internal and external factors are associated with decisional thought processes. These factors regulate accuracy, use, and reliance (Winston et al., 2017; Wright, 2013). Though researchers disagree on which thought process is

superior most concede to duality of use and reliance (Evans & Stanovich, 2013; Fahsing & Ask, 2013; Pennycock et al., 2015; Pretz, et al., 2014; Worrall, 2013; Wright, 2013).

This study obtained data that will provide a better understanding of United States police detectives' conceptualizations of these investigative decisional thought processes. A better understanding of these conceptualizations may enhance investigative training and education to increase efficient criminal investigations.

Chapter 2: Literature Review

Introduction

The decisions police detectives make during criminal investigations directly affect the outcome of their investigations. Inferential intuitive and analytic thought processes make up these decisions (Wright, 2013). Both of these thought processes are associated with effective decision-making, however improper use and reliance is associated with inaccuracies. Though one wrong decision may not negate an accurate investigation, one wrong decision has the ability to misdirect subsequent investigative decisions resulting in inaccurate investigations (Bookman & Innes, 2013). Decisional inaccuracies based on investigative thought process errors are a significant reoccurring problem during criminal investigations (Rossmo, 2016). Inaccurate investigative decisions can result in nonapprehensions, longer investigations, societal discontent, suspect misidentification, wrongful convictions (Kavanaugh, 2016).

Suspect misidentifications resulting in wrongful convictions are detrimental to society for multiple reasons. The most obvious are the injustices experienced by the wrongfully accused. Their arrests, prosecutions, and incarcerations result in their loss of freedom and cause emotional and financial stresses. Even upon exoneration, exonerees find it difficult to recoup a normal existence. Exonerated individuals continue to experience financial burdens, emotional stressors, and public alienation. Exonerees find it difficult to obtain employment based on their gap in employment while incarcerated. The public devalues, criminally stigmatizes, pities, and ostracizes the wrongfully

accused. Wrongfully accused individuals do not regain their pre-incarceration lifestyles upon exoneration and usually experience diminished existences (Clow & Leach, 2013). Nonapprehensions, extended criminal investigations, misidentifications, and wrongful convictions harm society in general. These occurrences result in financial losses to taxpayers and diminish societal trust and faith in law enforcement and the judicial system (Kavanaugh, 2016).

As this study was on the decisional thought processes of police detectives during criminal investigations, it is important to notate that the responsibilities of police detectives and investigative protocols have evolved significantly over the last several decades. This evolution was a result of technological advances such as DNA analysis, firearm identification, and single-digit fingerprinting. The advancement in investigative protocols was also a result of an increased emphasis on human rights issues resulting from past indiscretions and errors made by law enforcement officers. According to Geberth (2015), most police detectives are now college educated and have extensive law enforcement experience. These detectives are educated on the dynamics of human behavior, modern technology, as well as local and federal laws. Law enforcement agencies train police detectives to be aware of their own biases and prejudices and to refrain from allowing interference. Law enforcement agencies also train police detectives to be aware that the crimes they investigate will significantly impact victims, victims' families, and society in general (Geberth, 2015).

Despite of these advancements, decisional inaccuracies by police detectives during criminal investigations still occur (Rossmo, 2016). Detectives must make decisions from the initial presentation of the crime scenes to the conclusion of the investigations (Geberth, 2015). Researchers have shown that police detectives utilize both intuitive and analytic thought processes when investigating crimes (Fahsing & Ask, 2013; Wright, 2013). Inferential intuitive and analytic thought processes can result in both accurate and inaccurate decisions (Kahneman, 2011). Multiple contextual factors affect decisional thought process accuracy, use, and reliance (Elbanna & Fadol, 2016).

Rassin (2016) purported the beneficial use of analytic thought processes in criminal investigative decision-making and rejects the use of inferential intuitive thought processes. Rassin acknowledged investigative decisions are not free of intuitive thought processes; however, minimal intuitive thought process impact is required to avoid heuristics, biases, and illusions. Investigative decisions must be explicable to ensure accuracy and withstand the judicial process. Analytical thought processes accomplish explicability. The ability to analytically process information makes human beings superior from other species and as such supports the superiority of analytic thought processes (Pennycock et al., 2015; Rassin, 2015).

Sham and Weizsacker (2016) disagreed with Rassin (2016) wherein they argued inferential intuitive thought processes can outperform analytic thought processes. Inferential intuitive thought processes, which result from experiences, can result in accurate decision-making. Individuals also tend to utilize inferential intuitive thought

processes more often than analytic thought processes. Decisional thought processes start intuitively, move toward analytic assessment, and then revert to intuitive thought processes. Sahm and Weizsacker argued analytic thought processes are initially more precise, however, with experience, intuitive thought processes can be more accurate. Inferential intuitive thought processes are more advantageous than analytic thought processes because reflection, time, and cognitive strain do not delay these thought processes.

Wright (2013) acknowledged the importance of analytic thought processes during criminal investigations but also found significant data supporting the use of inferential intuitive thought processes. Wright found that police detectives rely upon inferential intuitive thought processes at the initial presentation of crime scenes. At this point detectives make immediate experience-based observations forming intuitive decisions. Detectives either will accept these immediate intuitive decisions or chose to analyze further. Though detectives may acknowledge the use of inferential intuitive thought processes at the initial presentation of crime scenes, they advocate the use of analytic thought processes to maintain an open mind and avoid biases.

Multiple contextual factors are associated with thought process usage in investigative decision-making. These factors can influence the use of one thought process over the other at inappropriate times that result in decisional inaccuracies. Ego, biases, heuristics, cognitive ability, and compelling desires to solve crimes are implicit factors that affect thought process usage (Elbanna & Fadol, 2016; Kahneman, 2011).

Explicit factors such as societal and organizational pressures, time constraints, and case complexity may also influence decisional thought process usage. These contextual factors may improperly influence the decisional thought processes of police detectives resulting in an over reliance on one thought process over the other (Elbanna & Fadol, 2016; Evans & Stanovich, 2013).

Individual inborn proclivity to one thought processes over another may be another factor associated with thought process usage. Pennycock et al. (2014) found that individuals with high self-regard tend to over emphasize the accuracy of their intuition and therefor rely too heavily on intuitive thought processes when making decisions. Individuals with lower levels of self-regard underestimate intuitive abilities and rely more on analytic thought processes in decision-making. Cognitive ability may also affect thought process usage in decision-making. Individuals with higher cognitive ability correlate with reflection, which coincides with analytic thought processes. Individuals with lower cognitive abilities may not have the ability to reflect and thus rely on intuitive thought processes more often. Thompson and Johnson (2014) disagreed that cognitive ability relates to decisional thought processes. Thompson and Johnson (2014) argued susceptibility to cognitive errors via inability or lack of desire to initiate the correct thought process system is associated with decisional inaccuracies. This susceptibility may result from laziness or lack of time to analyze situations. Individual proclivity to thought process reliance may contribute to decisional inaccuracies by police detectives during criminal investigations.

Decisions made by police detectives during criminal investigations significantly affect investigative outcome. Improper reliance on intuitive or analytic thought processes, regardless of the reason, may result in decisional inaccuracies (Elbanna & Fadol, 2016). These inaccurate decisions may in turn influence the remainder of the investigation and ultimately result in prolonged investigations, unsolved crimes, suspect misidentifications, and wrongful convictions. Accurate decision-making is essential to effective and accurate criminal investigations (Rossmo, 2016).

This study on police detectives decisional thought processes during criminal investigations is significant to psychological research. Previous research studies have produced mixed results on police detectives' conceptualizations of intuitive and analytic thought processes in relation to decisions made during criminal investigations. These discrepancies call for further research on investigative decisional thought processes. In addition, researchers primarily focused on police detectives outside the United States (Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). Law enforcement organizations differ based on demographics and culture (Verhoeven & Stevens, 2012). Accepted practices and protocols of law enforcement organizations within one demographic may differ from law enforcement organizations within differing demographics (Meissner, et al., 2014; Terpstra & Schaap, 2013; Villano et al., 2015). Finally, previous research studies on decisional thought processes of police detectives center on hypothetical criminal investigative scenarios. Minimal research studies exist that include past lived-experiences of completed criminal investigations (Fahsing & Ask, 2013). This study addressed these gaps in literature by obtaining an understanding of United States police

detectives' conceptualizations of decisional thought processes during criminal investigations personally experienced by participants.

The following sections are concerned with aspects of the literary review processes for this study. The first section, titled "literature search strategy" pertains to the strategies, techniques, databases, and information sources used to complete a thorough review of literature in connection with intuitive thought processes, analytic thought processes, theoretical and foundational frameworks, law enforcement protocols, and criminal investigations. The subsequent section, titled "theoretical foundation" pertains to the theoretical foundation of this study. This section will detail dual process theory, which served as the foundational basis of this study as well as supporting theories, such as expected utility and rational choice. This study also relied on the concepts of bounded rationality, police culture, and anger attribution affect.

This literature review section begins with a full review of intuitive thought processes. The review first details the description of intuitive thought processes also referred to as system 1 thought processes according to the dual process theory (Kahneman, 2011). Previous researchers disclosed identification of the benefits and limitations of intuitive thought processes. The literature review section also discloses the implicit and explicit factors associated with intuitive thought processes in relation to decision-making. The literature review section also provided information relating to heuristics, biases, and illusions associated with intuitive thought processes. Throughout

this section, I make connections between the literature and detectives' investigational decision-making.

The next section of the literature review provides a full appraisal of analytic thought processes. This portion of the review details the description of analytic thought processes also referred to as system 2 thought processes according to the dual process theory (Kahneman, 2011). Research examples and studies will be detailed that have resulted in data supporting the description, benefits, and limitations of analytic thought processes. The connection between police detectives' investigative decisions intertwines with these thought processes throughout this section of the review. The literature review section will provide examples of the contextual factors associated with analytic thought processes and their relation to criminal investigative decisions.

Literature Review Strategy

Via literary research articles, books, and journals via database searches within the Walden and University of Phoenix libraries, psychology and criminal justice databases were searched. The focus of this computerized search was to identify current peer-reviewed information on intuitive thought processes, analytic thought processes, strategic decision-making, criminal investigations, detectives' investigational decision-making strategies, dual process theory, rational choice theory, heuristics, biases, illusions, inattention blindness, qualitative research, narrative inquiry, and any additional pertinent psychological domains in connection with this study's focus.

I accessed articles, journals, and book excerpts through different databases through Walden University library and University of Phoenix library and accessed psychology articles, journals, and book excerpts were accessed via EBSCO electronic databases through the Walden Library. The databases used were psychINFO, psycARTICLES, and ProQuest. Criminal justice articles, journals, and book excerpts were obtained through SocINDEX and ProQuest databases through Walden library. Psychology and criminal justice articles, journals, and book excerpts via 360Link from the University of Phoenix library were also accessed. Literary data was also retrieved from books required or suggested by instructors at Walden University. These books consist of “Thinking Fast and Slow”, “Engaging in Narrative Inquiry”, “Narrative Inquiry”, “Qualitative Research”, and “Intentional Interviewing and Counseling”.

EBSCO PsychINFO from Walden library’s databases were first accessed to search the terms *police* and *decision-making*. The initial search was limited by peer-review and five-year publication dates and resulted in 260 articles. The same search words, with the same perimeters were then entered into PsycARTICLES. This resulted in 60 articles. This process was repeated in the criminal justice database, SocINDEX and retrieved 149 articles. When ProQuest was searched, using the same Boolean phrases and limitations, 20 articles were retrieved. The University of Phoenix library, which is an accumulation of multiple databases, produced 11,814 articles with the search terms *police* and *decision making*.

Because the focus of this study was on police detectives, it was necessary to complete additional searches with the Boolean terms; *detectives* and *decision-making*. EBSCO PsychINFO produced 13 results when limited by peer-review and five-year publication dates. PsycARTICLES produced one article. I then entered the Boolean terms *detectives* and *decision-making* into the criminal justice databases, with the same limitations. SocINDEX resulted in six articles and ProQuest resulted in 20 articles. The University of Phoenix databases produced 640 articles.

Intuition and analytical thought processes were also prominent subject matters to this study and therefore a search using the Boolean phrases *intuition* and *analytical thinking* was needed. All searches were limited by peer-review and publications within the last five years. Using Walden library databases, PsychINFO produced seven articles, PsycARTICLES resulted in two articles, ProQuest resulted in 52 articles, and SocINDEX produced four articles. The University of Phoenix databases resulted in 546 articles.

When *intuition* and *decision-making* were searched within Walden library databases, using the same limitations, PsychINFO resulted in 256 articles, PsycARTICLES produced 76 articles, SocINDEX resulted in 122 articles, and ProQuest provided 344 articles. The University of Phoenix databases produced 7,360 publications. When *analytical thinking* and *decision-making* were searched via Walden library databases. PsychINFO resulted in 12 articles, PsycARTICLES produced no finding, SocINDEX resulted in four articles, and ProQuest resulted in 434 articles. The University of Phoenix database resulted in 1,492 publications.

Additional Boolean terms and phrases in connection with this study were searched via Walden library and University of Phoenix databases. These terms and phrases, searched individually or in combination with other terms are as follows: *analytic, analytic thinking, analytic thought processes, intuition, intuitive thinking, intuitive thought processes, dual process, investigation, criminal investigation, police, detectives, heuristics, biases, illusions, inattentive blindness*. In addition, I searched authors' names, including *Kahneman, Stanovich, Calabretta, and Travesty*.

Theoretical Foundation

The focus of this study was to explore decisional thought processes of police detectives during criminal investigations. According to dual process theory, decisional thought processes consist of intuitive and analytic thought processes (Kahneman, 2011). Therefore, dual process theory aligned properly with this study and served as its theoretical framework. Additional theories and conceptualizations, such as expected utility, rational choice, bounded rationality, police culture, and anger attribution affect also supported the theoretical framework of this study. The framework was supported by the concepts and theories addressed in the following section.

Dual Process Theory

The premise of dual process theory is that individuals have two separate and unique thought processes. Dual process theorists refer to individuals' intuitive thought processes as Type 1 or System 1 thought processes and individuals' analytic thought processes as Type 2 or System 2 thought processes (Kahneman, 2011). These thought processes originate and operate in opposite ways (Calabretta et al., 2017). Intuitive

thought processes are nonconscious, immediate, and effortless. Analytic thought processes involve reasoning, calculation, and result from conscious thought (Pennycock et al., 2015). Intuitive thought processes yield default responses which some argue are either accepted or rejected by analytic thought processes (Evans & Stanovich, 2013; Kahneman, 2011). Although these systems are paradoxical, they can work collaboratively in strategic decision-making (Calabretta et al., 2017).

Critics of the original dual process theory have caused adaptations and revisions since its origination (Evans & Stanovich, 2013; Pennycock et al., 2015). The assumptions of Evans and Stanovich (2013) and Kahneman (2011) create the theoretical framework for this study. The assumptions of dual process theory according to Kahneman and Evans and Stanovich stated that individuals utilize both intuitive and analytic thought processes when making decisions. Intuitive thought processes result spontaneously and will remain constant unless individuals activate their analytic thought processes. Analytic thought processes produce reasoning and analysis. Analytic thought processes either endorse or reject intuitive thought process responses (Kahneman, 2011).

Researchers differ in their determinations on which thought process results in increased accurate decision-making (Fahsing & Ask, 2013; Rossmo, 2016; Wright, 2013). Elbanna and Fadol (2016) stated that determining which system is more accurate is difficult, if not impossible, because multiple contextual factors influence thought process usage. Implicit contextual factors associated with dual process theory are cognitive ability, beliefs, biases, and domain-specific experience. Explicit contextual factors are time constraints, situational complexity, and outside pressures. Calabretta et

al. (2017) argued that although these systems are paradoxical, the collaborative appreciation and use of both systems may increase accurate decision-making.

For the purposes of this study, the findings and assumptions of Calabretta et al. (2017) added to dual process theoretical framework. Rather than focus on one thought process' value over the other, they found benefit in the appreciation of the paradoxical aspects of each. Educated and collaborative use results from an awareness of each thought processes characteristics. Collaborative use of inferential intuitive and analytic thought processes improves accuracy in decision-making. Dual process theory with the assumptions of Evans and Stanovich (2013), Kahneman (2011), and the paradoxical model of Calabretta et al. provide a strong theoretical framework for this study.

Expected Utility/Rational Choice Theories

Decision-making refers to option choice, wherein an individual chooses one option over another. As such, expected utility theory and rational choice theory contributed to the theoretical framework of this study. Utilitarian theory is the foundation for these theories. An assumption of utilitarian theory is that individuals make decisions based on the amount of utility (happiness) they expect to receive. As both of these theories derive from a utilitarian base, expected utility and rational choice theories provide insight into the reasons behind decision-making. Expected utility and rational choice theories assume individuals face multiple options when making decisions. Individuals make decisions based on which option will result in greater utility (Herbert, 2015; Pettigrew, 2016). Rational choice theory purports that utility is rank ordered with the highest order utility determining the decision (Herbert, 2015). Expected utility theory

purports internal attitudes such as preference and external attitudes such as outcome desire influence decision-making (Pettigrew, 2016). This study assumes that expected utility and rational choice theories are not solely hedonistic (Herbert, 2015). Optimal utility is realized when decisions are made leading to accurate suspect identifications and apprehensions. The assumptions of expected utility and rational choice theories added to a strong theoretical foundation for this study wherein investigative decisional thought processes of police detectives were explored.

Bounded Rationality

Police detectives usually receive little information when initially investigating a crime. It is for this reason that the concepts of bounded rationality are applicable to this study. Bounded rationality states that individuals make decisions prior to discovery of all pertinent information and without full assurances of maximum achieved utility.

According to the concepts of bounded rationality, these rather immediate decisions may result in inaccuracies, however, given time and additional information may prove to be in accurate (Ross, 2014). Bounded rationality purports biases and beliefs may influence these immediate reactionary thought processes. The concepts of bounded rationality are applicable to the framework of this study because police detectives often are required to make decisions when little information is available (Rossmo, 2016; Wallace, 2015).

Police Culture

Law enforcement officers operate within an organizational subculture wherein its collectiveness helps protect its participants against the stressors and strains of job requirements (Terpstra & Schaap, 2013). “The police culture is a distinct complex

ensemble of values, attitudes, symbols, rules, recipes, and practices” (Reiner, 2010, p. 116). This subculture trains its’ recruits uniformity in appearance, attitudes, and behaviors, however not all police styles are homogenous. Law enforcement is a distinct subculture wherein police officers must balance their authority and servitude to society against the danger imposed upon them by that same society. A rather large division exists between these two groups. This division exists because of multiple factors. Danger experienced by law enforcement officers creates an in-group/out-group mentality. Past indiscretions and mistakes committed by law enforcement officers, as well as the power law enforcement holds over society in general aggravates this division. This division has caused an “us versus them” mentality. Law enforcement subcultures reshape the characteristics of law enforcement officers resulting in internal cohesiveness, increased suspiciousness of out-groups, and focused attention on self-preservation (Paoline, III, 2003). Law enforcement organizations operate with organizational similarities however are not monolithic.

Anger Attribution Affect

Police detectives, like most individuals, may have a propensity to anger when confronted with horrific crimes such as murder and sexual assaults. Though anger may be a normal and an expected response, anger is a strong emotion and can misguide decisional thought processes. Misdirected anger during criminal investigations may result in dysfunctional decisional thought processes. Anger is an uncomfortable emotion wherein rapid reduction or removal of the ill effects are primal. Misguided anger in police detectives may attribute to rushed judgements in decision-making. This

unconscious rush to relieve the ill effects of anger can result in an over reliance on intuitive thought processes. Misdirected anger can significantly influence accurate decision-making capabilities of police detectives and therefore contributed to the theoretical framework for this study (Wallace, 2015).

Literature Review

Intuitive Thought Processes

Some individuals equate intuition with supernatural-like powers or insights. Exceptional results from these intuitive thoughts reaffirm their allure. A firefighter who intuitively clears a room that explodes immediately after exiting or a physician who accurately diagnoses on first-sight help maintain intuitive allure. Although the results of these occurrences are incredible and based on expertise, these intuitive thought processes are the same intuitive thought processes used by individuals in everyday life. An individual's ability to detect emotions, differentiate sounds, and maneuver a vehicle are all examples of intuitive thought processes (Kahneman, 2011). Intuitive thought processes are valid constructs within organizational sciences. This study focused on experienced intuitive thought processes of police detectives that exceed basic intuition. Researchers refer to these enhanced intuitive thought processes as expert or inferential intuitive thought processes (Salas et al., 2010).

Expert or inferential intuitive thought processes result from domain-specific experiences, expertise, and recognition (Kahneman, 2011; Salas et al., 2010; Wright, 2013). Inferential intuition occurs upon the presentation of a cue. This cue accesses

stored information within one's memory and results in an answer to a presented question (Kahneman, 2011). Inferential intuition results from extensive domain-specific knowledge gleaned from experiences. This knowledge is conceptually organized and stored within one's semantic memory. Inferential intuitive thought processes produce accurate decisions more often than basic intuitive thought processes (Wright, 2013).

The use of inferential intuitive thought processes is dependent upon multiple factors. The experience of the decision-maker may affect the use of inferential intuitive thought processes. Individuals with domain-specific expertise tend to rely heavier on intuition than those with less domain-specific experience (Wright, 2013). Task complexity not only effects intuitive thought processes in general but inferential intuitive thought processes as well. A complicated task will increase inferential intuitive thought process use (Salas et al., 2010). Pressure, whether it be organizational or time, has an effect on inferential intuitive thought process use and reliance. A pressured individual will tend to rely on inferential intuitive thought processes over analytic thought processes to satisfy that pressure (Kahneman, 2011).

Inferential intuition is beneficial for a variety of reasons. Inferential intuition allows for automaticity. Automaticity occurs when individuals repeatedly perform acts that become instinctive. Individuals subsequently perform these repeated acts without conscious thought. Automaticity frees up individuals' cognitive processes allowing them to focus on novel information. Inferential intuition also provides individuals with sense-making and situational assessment abilities. Individuals can detect and identify problems

automatically and correlate explanations and rationales while quickly assessing situations. These characteristic of inferential intuitive thought processes assist individuals in accurate decision-making (Salas et al., 2010).

Police detectives rely on inferential intuitive thought processes during criminal investigations (Fahsing & Ask, 2013; Wright, 2013). Detectives' inferential intuitive thought processes consist of perceptual recognition processes that allow detectives to assess crime scenes quickly (Kahneman, 2011; Wright, 2013). Inferential intuitive thought processes can originate from knowledge that was once obtained analytically and stored within one's semantic memory. This once analytically gained knowledge is now automatic allowing cognitive focus on new information (Salas et al., 2010). Data from previous research studies on decisional thought processes supported the use of inferential intuitive thought processes for some decision-making during criminal investigations (Fahsing & Ask, 2013; Kahneman, 2011; Sahm & Weizacker, 2016; Salas et al., 2010; Wright, 2013).

Some researchers theorized law enforcement officers have unique subconscious thinking styles that allow them to make rapid and effective decisions. Law enforcement organizations have accepted this concept (Skolnick, 2008; Worrall, 2013). Worrall (2013) argued inferential intuitive abilities of law enforcement officers are a combination of fear, suspicion, and experience. This combination enables detectives to make accurate and expedited decisions based on little evidence. Skolnick (2008) proposed that suspicion plays a primary role in police inferential intuitive skills. Skolnick stated

suspicion is a learned cognitive skill for danger recognition that transitions with experience into intuitive thought processes. Worrall agreed with Skolnick regarding inferential intuitive danger recognition. Worrall stated inferential intuitive abilities of police detectives work as a defensive mechanism against the danger and unpredictability of the profession that increase intuitive decisional accuracy (Worrall, 2013).

Intuitive thought processes are necessary in every day decision-making. Intuitive thought processes generally produce accurate models of familiarity (Kahneman, 2011). The short-term predictions of intuitive thought processes produce appropriate reactions to routine challenges (Andrzejewska, et al., 2013). Inferential intuitive thought processes, gained through domain-specific experience and expertise, increase accuracy in intuitive thought processes (Elbanna & Fadol, 2016; Wright, 2013). Individuals effectively use inferential intuition in decision-making. According to Worrall (2013) and Skolnick (2008), police detectives have increased inferential intuitive abilities resulting from the complexities of their jobs. Inferential intuitive thought processes can be effective and contribute to accurate decision-making (Salas et al., 2010).

Because intuitive thought processes can be beneficial, use and reliance on these thought processes in decision-making could result in significant cognitive errors. Intuitive thought processes are subject to illusions, heuristics, and biases. Illusions occur when individuals see or perceive something that is not there. Heuristics are mental short cuts that can assist in expediting decisions but omit reflection of all pertinent information. Biases consist of emotions and internal beliefs rather than facts. Illusions, heuristics, and

biases can cause systematic errors resulting in inaccurate decision-making (Kahneman, 2011).

Visual illusions occur when individuals see things inaccurately. Error identification is very difficult in visual illusions because individuals conditionally believe in what they see (Kahneman, 2011). The Muller-Lyer geometrical illusion is one of the most effective visual illusion examples that illustrates what one visually perceives is not always reality (Howe & Purves, 2005). Visual illusions occur based on distortions of visual cues (Hamburger, 2016). Intuitive thought processes are susceptible to visual illusions because of the characteristics of intuition (Hamburger, 2016; Kahneman, 2011). Intuitive thought processes readily accept, without question, presented visual information. Once intuitively accepted visual cues becomes perceptual realities regardless of whether or not those perceptual realities are accurate (Kahneman, 2011).

Cognitive illusions are false beliefs (Yarritu et al., 2015). Cognitive illusions occur when contradictory information is presented to individuals' learned thought processes or stored memories. Individuals refuse to accept any contradictory information (Kahneman, 2011). Cognitive illusions serve a purpose in environmental adaptation however interfere with individuals' abilities to acquire evidence-based information. Race perceptions are prime examples of cognitive illusions effecting detectives' decisional thought processes. Detectives, who have pre-established negative beliefs of a certain race, may automatically view individuals within that race as more suspect than individuals outside that race. Intuitive thought processes influenced by cognitive illusions

will omit evidence in conflict with internal beliefs that may result in unfounded prejudices and inaccurate investigative decision-making (Yarritu et al., 2015).

Even though experience can increase the effectiveness of intuitive thought processes, experience can also hinder the accuracy of intuitive thought processes. Individuals tend to normalize experiences when they repeatedly encounter like-kind experiences. The mere fact that the experience or thought process has become normalized diminishes objectivity resulting in the omission of alternate details. The Moses Illusion illustrates this concept. Researchers asked participants how many animal pairs Moses loaded onto the arc. Most participants answered incorrectly stating two. It is common knowledge that Noah not Moses loaded the arc. Intuitively processed answers ignored normative details resulting in cognitive errors (Kahneman, 2011). Experienced police detectives, who rely on intuitive thought processes, may normalize criminal investigations, causing oversights of details and decisional inaccuracies (Wright, 2013).

Heuristics are mental shortcuts that allow individuals to reduce cognitive load when making decisions (Kahneman, 2011). Heuristics enable individuals to expedite and simplify the decision-making process. Reduction of cognitive load via process simplification is a common goal of many decision makers (Pogarsky et al., 2017; Savolainen, 2016). Heuristics access experienced-based stored information. Even if loosely applicable, individuals will access this stored information when making decisions (Savolainen, 2016). Though these mental shortcuts effectively accelerate the decision-making process, heuristics can significantly affect the accuracy of intuitive thought

processes and decision-making (Kahneman, 2011). Data from previous research studies have shown heuristics have improperly influenced decisions made by police detectives during criminal investigations (Dietz & Ramsland, 2012; Wallace, 2015).

Availability heuristic occurs when individuals face complex situations and rely upon previously stored information to make decisions (Cassidy & Buede, 2009). This information must be easily retrieved and simply relate to the current situation. Individuals rely on information based on recall ease (Geurten et al., 2015). Individuals who employ availability heuristic will correlate similarly experienced events with their current situation to ease the cognitive load of decision-making. Employment of availability heuristic may result in simulation when situational similarities do not necessarily exist (Cassidy & Buede, 2009). Availability heuristic also causes assumption and omission of pertinent present information (Bruin et al., 2016; Kliger & Kudryavtsev, 2010). Intuitive decisions, influenced by availability heuristics, may result in systematic errors because the unique factors associated with current experiences may go ignored or uninvestigated (Kahneman, 2011).

Representativeness heuristic involves conclusions based on how individuals describe or label an event, place, or person. The representation of the event, place, or person influences decisional thought processes to fall in line with the representation. Focus on the representation negates recognition of pertinent facts (Laibson & Zeckhauser, 1998). Representative heuristic influences individuals to ignore probability outcomes due to similarity judgements. Representative heuristic can cause police

detectives to make decisional errors in dealing with witnesses, suspects, fellow law enforcement officers, and the public in general. Representativeness can improperly influence intuitive thought processes causing generalizations and assumptions resulting in cognitive systematic errors (Ridley et al., 2017).

Affect heuristic refers to a tendency of individuals to base intuitive decisions on individual affect pools. Affect refers to individuals' feelings or emotions toward a particular subject, person, or event. Emotionally charged situations discount logical thoughts and are vulnerable to affect heuristic (Siegrist & Sutterlin, 2014). Individuals' likes and dislikes directly influence individuals' judgements causing little to no deliberation or reasoning (Bruin et al., 2016). Affect heuristic cause individuals to rely on internal beliefs rather than evidence or facts (Savolainen, 2016; Siegrist & Sutterlin, 2014)

Anchoring heuristic refers to individuals' tendencies to allow outside information to influence decision-making. Presentation of outside information (anchor) influences subsequent decision-making wherein decisions made in the absence of the anchored information would be different (Jasper & Ortner, 2014). In criminal investigations, initial presentations of evidence can anchor ensuing thought processes of police detectives. This anchoring of information makes deviation difficult even when that deviation is warranted (Savolainen, 2016). Inaccurate initial evidence during criminal investigations may cause decisional errors based on the influence anchored information have over subsequent information (Dietz & Ramsland, 2012).

Inferential intuitive decisions made with the employment of satisficing heuristic are vulnerable to cognitive errors. This vulnerability occurs because the first plausible option available to individuals directs quick decision-making (Willman-Livarinen, 2017). Satisficing heuristic occurs when individuals generate and settle on sufficing solutions that are possible but not always probable or factual. Employment of satisficing heuristic will cause individuals to ignore the possibility of other scenarios in order to expedite resolutions. Individuals will rely on quick satisfying solutions rather than decisions based on facts. Individuals accomplish cognitive ease but not necessarily cognitive accuracy (Dondo & Ormerod, 2017).

Biases are strong suggestions of the mind that can be favorable or unfavorable toward people, events, or situations. Biases, whether cognitive or motivational, deviate from the normative rule of probability. Cognitive biases are internal judgements that direct thought processes toward decision-making that violate normative rule. Motivational biases are a combination of conscious and subconscious distorted thought processes and result from self-interests, social pressures, or organizational contexts (Montibeller & Winterfeldt, 2015). These distortions originate from unquestioned and unverified information. Individuals have a tendency to exaggerate consistency of their biases. Police detectives' decision-making are susceptible to their personal biases as well as biases created by and within law enforcement subcultures (Dondo & Ormerod, 2017).

Confirmation bias is associated with investigative decision-making cognitive errors. Confirmation bias occurs when individuals settle upon prematurely established

theories. Individuals will choose to ignore information that falls outside predetermined theories (Wallace, 2015). Selective thinking will ensue with subsequent thought processes. Selective thinking refers to individuals' tendencies to refute information, consciously or unconsciously, that is inconsistent with established hypotheses. Confirmation bias occurs because of the pressures associated with information processing. Confirmation bias aides in decision-making when decisions are complicated or restricted by constraints. Confirmation bias also occurs as a protection measure for self-esteem. Information that is similar to individuals' beliefs will reinforce those beliefs and produce feelings of rightness. Information that is in conflict with individuals' beliefs will bring strife and therefore be rejected (Encyclopedia Britannica, 2016). Police detectives with less experience appear to be more susceptible to confirmation bias (Dondo & Ormerod, 2017). Confirmation bias within criminal investigations may result in omission of evidence, misinterpretation of ambiguous information, and minimization of inconsistent evidence (Rossmo 2016; Wallace, 2015)).

Expectancy violations bias and guilt bias are two additional domain-specific biases that may affect decisional thought processes of police detectives during criminal investigations. Expectancy violations bias occurs when individuals tend to judge others negatively when those individuals behave outside the norm. Police detectives assigning interest to a suspect based on unexpected emotional reactions may be a result of expectancy violations bias (Burgoon et al., 2008). Guilt bias is excessive presumption of guilt in others. Police detectives, because of their organizational culture, have a tendency to disbelieve others. This guilt presumption increases instances wherein this bias may

negatively influence investigative decision-making (Dondo & Ormerod, 2017).

Expectancy violations bias and guilt bias may create perceptual distortions that deter logical thought processes and result in cognitive errors in decision-making (Reich, 2013).

Kahneman (2011) refers to intuitive thought processes as being in a state of cognitive ease. Little to no ambiguity exists in intuitive thought processes. Intuitive thought processes are immediate, effortless, self-affirming, and familiar. These characteristics of intuition increase individuals' reliance on intuitive thought processes. Intuitive thought processes are an essential element of effective decision-making but do not always produce accurate decisions in and by themselves. Inferential intuition are intuitive thought processes based on experience and expertise. Inferential intuition is more effective than intuition in general (Fahsing & Ask, 2013; Salas et al., 2010; Wright, 2013). Though intuitive thought processes can prove beneficial in decision-making, intuitive thought processes have limitations. Intuition is subject to illusions, heuristics, and biases. These factors have the ability to influence negatively the accuracy of intuitive decision-making thus reducing confidence the psychological research community may have in intuitive thought processes (Dondo & Ormerod, 2017; Kahneman, 2011; Rossmo, 2016).

Analytic Thought Processes

Analytic thinking is one of the primary characteristics that differentiates human beings from other species (Pennycock et al., 2015). Analytic or system 2 thought processes require vigilance, cognitive ability, and time (Rossmo 2016). Analytic thought

processes require effort and result from the unmet demands of system 1 (Kahneman, 2011). Cognitive strain associated with analytic thought processes often discourages its use. It is simpler to rely on intuitive thought processes because it requires no cognitive effort (Kahneman, 2011; Pennycook et al., 2014). Analytic thought process decisions are not emotion nor bias based. Analytic decisions are fact- and evidence based and therefore supported and promoted in criminal investigations (Rassin, 2016).

One of the primary functions of analytic thought processes is to monitor and regulate the suggestions of intuitive thought processes to avoid cognitive errors (Andrzejewska et al., 2013; Kahneman, 2011). Individuals who support default-interventionist theory believe individuals initially make intuitive decisions by default and unless these individuals activate analytic thought processes, intuitive decisions remain constant (Kahneman, 2011; Thompson & Johnson, 2014). Individuals have the option to endorse or question their intuitive thought processes. One famous study of analytic thought process activation consisted of the bat and ball puzzle. In this study, researchers asked Ivy League university students the cost of a ball when the bat was one dollar more than the ball and the total cost was \$1.10. A large number of those educated students answered incorrectly. The students who answered incorrectly chose to endorse their intuition rather than invest in analytic thought processes to verify the answer. The students who answered correctly accessed analytic thought processes to resist incorrect intuitive decisions. This particular study was significant to this study because it demonstrates the ease in which educated individuals avoid the use of analytic thought processes to avoid cognitive strain (Kahneman, 2011).

Cognitive ability has been associated with analytic thought process use and reliance in differing ways (Pennycok et al., 2015; Sullivan et al., 2005; Thompson & Johnson, 2014). Some theorize high cognitive capacity reasoners are more capable of engaging in analytic thinking over lower cognitive capacity reasoners. This increased reliance results simply from higher cognitive abilities. Others argued that both high and low cognitive capacity reasoners have equal accessibility. However, higher cognitive capacity thinkers choose to access analytic thought processes more often because their higher cognitive ability results in increased accurate decisions (Thompson & Johnson, 2014). Still others state characteristics of cognitive capacity reasoners effect thought process use. High cognitive capacity reasoners base decisions primarily on logic wherein low cognitive capacity reasoners primarily base their decisions on beliefs (Pennycok et al., 2015). Based on these studies, police detectives who are educated individuals with high cognitive capacity would rely on analytic thought processes more often (Sullivan et al., Rosen, & Schulz, 2005).

Cognitive ability is also associated with conflict detection. Conflict detection occurs when individuals realize possible inaccuracies exist in their intuitive thought processes. The identification of possible inaccuracies causes activation of analytic thought processes. Individuals with higher cognitive abilities tend to identify conflict more often than do individuals with lower cognitive abilities. Conflict identification is an important aspect of decisional thought process accuracy because unidentified intuitive inaccuracies will remain consistent (Stanovich & West, 2008).

Conflict detection, which is associated with higher cognitive ability and increased analytic thought process use, is also associated with decreased feelings of rightness (FOR). FOR is a characteristic of intuitive thought processes, wherein individuals feel their intuitive thought processes are more accurate than not. FORs cause overconfidence and overreliance on intuitive thought processes and rejection of transition to analytic thought processes. FORs consist of beliefs and ego that make it difficult for individuals to dismiss (Thompson & Johnson, 2014). FORs can contribute to confirmation bias wherein detectives discredit factual data that are inconsistent with initial hypotheses (Wallace, 2015). Analytic thought processes allow for a rejection of FORs and focus on evidence-based data (Thompson & Johnson, 2014).

During criminal investigations police detectives must maintain unbiased and nonjudgmental thought processes even in the presence of horrific and emotionally charged crimes (Sullivan et al., 2005). Visceral and unwavering intuitive responses ensue when individuals experience emotionally disgust-based events. This emotional response increases FORs making the transition to analytic thought processes difficult (Pennycock et al., 2014). Analytic thought processes reduce emotion-based decisions but are not exempt from the detrimental effects of emotions. Emotions deplete cognitive resources and distract attention thus disturbing proper cognitive allocation to analytic thought processes. Accurate decisional thought processes in emotion-based situations require strict adherence to analytic reasoning (Tremoliere et al., 2016). The use of analytic thought processes allows individuals to resist emotional affect and reflect on possible alternative hypotheses (Pennycock et al., 2015).

Analytic thought processes reduce collective culpability attribution. Collective culpability attribution is a significant phenomenon related to criminal investigations. Collective culpability attribution occurs when individuals assume guilt in others because of their mere association with or proximity to wrongdoers. This can be a significant problem within law enforcement with the abundance of gang related crimes. Analytic thought processes reduce the intuitive impulse to blame collectively individuals without evidence of their personal wrongdoing (Kwan & Chiu, 2014).

Though analytic thought processes prove more accurate than inferential intuitive thought processes, analytic thought processes are subject to cognitive errors. Analytic thought processes require attention. When individuals are required to divide attention, analytic thought processes may fail resulting in inaccurate decision-making (Kahneman, 2011). Inattention blindness is a pervasive perceptual phenomenon associated with analytic thought processes. Inattention blindness occurs when individuals become blind to objects and events that are outside their focused attention. Simons and Chabris (1999) completed an interesting naturalistic study on inattention blindness called the Invisible Gorilla Experiment. Researchers asked participants to focus and count ball throws. Approximately forty-two seconds into the counting a woman dressed in a gorilla costume walked through the ball throwers, banged her chest, and then walked off. Approximately forty-six percent of participants did not see the gorilla. Not only did these participants not see the gorilla, they refused to believe the occurrence when presented with evidence (Simons & Chabris, 1999).

Inattentional blindness effects decisional thought processes of law enforcement officers. In 1995, a police detective was chasing an armed suspect. His full focus and attention were on the fleeing suspect. While chasing this suspect, this police detective ran past a brutal assault. When called to testify about that assault the police detective stated he had no knowledge of the assault. Authorities charged this detective with perjury. Regardless, this detective affirms his testimony, which some theorize to be a result of inattentional blindness (Chabris et al., 2011). Chabris et al. (2011) used this case scenario as the basis for their naturalistic study on inattentional blindness. When participants experienced a similar situation, sixty-five percent of participants did not see the altercation in nighttime settings and fifty-six percent of participants did not see the altercation in daytime settings. Cognitive errors in analytic thought processes can occur when individuals are fully focused on one particular event or scenario wherein their focused attention is required elsewhere (Kahneman, 2011).

Analytical thought processes, by their basic characteristics, are a hindrance to their use. Analytic thought processes are effortful and require attention and cognitive ability. Individuals tend to gravitate toward cognitive ease, which is inconsistent with analytic thought processes (Kahneman, 2011). Analytic thought processes are time consuming. In an environment of political, social, and institutional pressures, individuals will often discard time-consuming analytic thought processes for quicker intuitive thought processes (Pennycok et al., 2014). Analytic thinking reduces individuals' feelings of rightness and reduces confidence. Individuals' egotistical need to feel right

and increase confidence results in reduced use of analytical thought processes (Thompson & Johnson, 2014).

Summary

This chapter contained reviewed literature on intuitive and analytic thought processes as well as how these thought processes related to decisional thought processes of police detectives during criminal investigations. This review covered the benefits and detriments of both intuitive and analytic thought processes and the contextual factors associated with their use (Brogaard, 2014; Calabretta et al., 2017; Olds and Link, 2016; Pennycock et al., 2015; Pretz et al., 2014; Worrall, 2013). This chapter also contained information on the structural framework for this study. Dual process theory provided the theoretical framework for this study based on the assumptions of Evans and Stanovich (2013), Kahneman (2011), and Calabretta et al. (2017). This chapter provided information on theories and concepts supporting the theoretical foundation for this study. These theories and concepts consisted of expected utility, rational choice, police culture, bounded rationality, and anger attribution.

The dual use of intuitive and analytic thought processes in decision-making by police detectives during criminal investigations was supported by the literature reviewed in this chapter (Akinici & Sadler-Smith, 2013; Pennycock et al., 2015; Rassin, 2016; Wright, 2013). Although previous researchers have reached a consensus in the dual use of thought processes in decision-making, differences in the applicability, accuracy, and contextual factors existed within the reviewed literature. Some researchers found police detectives acknowledged the use of both thought processes and that both thought

processes are uniquely beneficial to decision-making (Pennycock et al., 2015; Wright, 2013). Other researchers found a complete rejection in the use of intuitive thought processes during criminal investigations stating evidence-based analytic thought processes produce primarily accurate decisions (Fahsing & Ask, 2013; Rassin, 2016, Rossmo, 2015). The ambiguity of thought process use and reliance extracted from previous research studies provided a need for further research on police detectives' conceptualizations of both intuitive and analytic thought processes as they relate to criminal investigative decision-making.

Previous literature reviewed in this chapter provided extensive information on intuitive thought processes. Intuitive thought processes have a distinct role in decision-making. Intuition provides immediate, effortless, and nonconscious responses to situations (Worrall, 2013). Intuitive thought processes save time when dealing with routine daily functions. It would be an ineffective use of time and cognition to access analytic thought processes for every faced decision during one's life (Kahneman, 2011). Domain-specific experiences increase intuitive thought process use, reliance, and accuracy. Expertise-based intuition can assist in criminal investigations by expediting initial crime scene analyses (Wright, 2013). However, intuitive thought processes are subject to biases, illusions, and heuristics that can negatively affect decisional accuracy (Kahneman 2011).

Paradoxical to intuitive thought processes, analytic thought processes are calculated, effortful, and time consuming (Calabretta et al., 2017). According to default-interventionist theory, individuals initially call upon analytic thought processes to

endorse or reject decisions reached by intuitive thought processes (Kahneman, 2011; Thompson & Johnson, 2014). Analytic thought processes are evidentiary based and therefore supported within law enforcement and judicial systems (Rassin, 2016; Worrall, 2013). Though decisions made via analytic thought processes are not always accurate, analytic thought processes tend to result in accuracy more often than intuitive thought processes (Rassin, 2016; Rossmo, 2016). Analytic thought processes are subject to inattentional blindness that negatively affect accurate decision-making (Kahneman, 2011). However, the main deterrents of analytic thought process usage may lie in the contextual factors associated with its use. Societal and organizational pressures as well as situational complexities, and cognitive strain hinder thought process use and reliance (Penny, Cheyne, Barr, Koehler, & Fugelsang, 2014).

Intuitive and analytic thought processes have specific purposes. Each thought process can result in accurate and inaccurate decisions. Multiple contextual factors strongly influence thought process use and reliance (Elbanna & Fadol, 2016; Kahneman, 2011). Regardless of which decisional thought process is activated, inappropriate use of or reliance on either thought process increases systematic errors. Research on decisional thought processes in relation to police detectives is compelling but not complete. Significant gaps in research currently exist in relation to investigative decisional thought processes resulting in a need for additional research studies (Sahm & Weizacker, 2016; Rassin, 2016; Wright, 2013).

This chapter also provided current literary researcher data on the subcultural environment of law enforcement organizations and how inclusion within this subculture

affects decisional thought processes (Geberth, 2015). Law enforcement officers have a distinctive role within society wherein they must protect and serve a public that may bring them harm. The danger experienced by law enforcement officers exists as an underlying and constant theme that has shown to effect thought process use and reliance. The unique subculture of law enforcement organizations serves yet another contextual factor associated with investigative decisional thought processes (Paoline III, 2003).

The introduction to this chapter provided information on the detrimental effects of inaccurate investigative decision-making by police detectives. Erroneous decision-making is one of the primary causes of inaccurate investigations. Erroneous investigative decisions result in suspect misidentification, nonapprehensions, and wrongful convictions (Rossmo, 2016). Suspect misidentifications, nonapprehensions, and wrongful arrests and convictions negatively affect societal wellbeing. These consequences result in harm to the wrongfully accused, victims, and society as a whole. Inaccurate criminal investigations diminish societal trust in law enforcement and the judicial system. Erroneous investigative decisions, which result in inaccurate criminal investigations, represent a significant hardship to society (Close & Leach, 2013).

Research to date on decisional thought processes by police detectives during criminal investigations is limited. It is actually surprising that more research studies have not taken place based on the significant impact that law enforcement have on society. A gap in literature exists pertaining to detectives' conceptualizations of thought processes utilized in investigative decision-making (Pennycock et al., 2015; Rassin, 2016; Rossmo, 2016; Wright, 2013). An abundance of research studies exists on decisional intuitive

thought processes, decisional analytic thought processes, and contextual factors associated with each of these thought processes. However, much less research exists with respect to these thought processes and police detectives' during criminal investigations. Even less research exists in relation to detectives' conceptualizations of decisional intuitive and analytical thought processes during criminal investigations.

A significant gap in research exists on decisional thought processes of police detectives within the United States. Most research studies have taken place in countries outside the United States (Brookman & Innes, 2013; Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013). This study addressed this gap in research by exploring United States police detectives' conceptualizations. This study of police detectives specifically within the United States was significant because the thought processes of police detectives in different demographics and cultures have shown variance. Demographics and culture are factors that affect decisional thought process research data and therefore completing research on differing populations is beneficial (Meissner, et al., 2014; Vallano et al., 2015; Verhoeven & Stevens, 2012).

Another significant gap in literature is detectives' conceptualizations of decisional intuitive and analytic thought processes during criminal investigations in which they partook. Literature in this chapter provided insight into hypothesized crime scenes or criminal investigations in general (Fahsing & Ask, 2013; Rossmo, 2016; Sahn & Weizacker, 2016; Wright, 2013). This study sought to understand detectives' conceptualizations of their decisional intuitive and analytic thought processes made during criminal investigations in which they partook. Data retrieved on actual decisional

thought processes made during actual completed investigations provided valuable interpersonal data rather than data assumed from hypothesized scenarios.

Literature reviewed in this chapter supported the dual use of intuitive and analytic thought processes in decisions made by police detectives during criminal investigations (Fahsing & Ask, 2013; Sahm & Weizacker, 2016; Rossmo, 2016; Wright, 2013). This chapter provided literature that supported the problem, purpose, and significance of this study. This study provided a better understanding of United States police detectives' conceptualizations of decisional intuitive and analytic thought processes used during criminal investigations in which they partook. Data from this study may aid in enhancing education and training techniques to increase decisional accuracy by police detectives during criminal investigations. Increased accuracies in investigative decision-making by police detectives may assist in the reduction of injustices and assist in increasing societal safety and confidence in law enforcement (Olds & Link, 2016).

Chapter 3 contains information relating to this study's methodology, data collection, and data analysis. Chapter 3 provided information that substantiated that this study aligned within the criterion for a qualitative study. The following chapter contains information regarding this study's participants and sampling strategies. It also contains data on the materials, measurements, and instruments used in data collection and analysis. Chapter 3 ends with a discussion on this study's ethical considerations and the safeguards implemented to maintain beneficence.

Chapter 3: Research Method

Introduction

The purpose of this qualitative study was to obtain a better understanding of United States police detectives' conceptualizations of decisional inferential intuitive and analytic thought processes during criminal investigations in which they partook. Previous researchers have not adequately studied United States police detectives' conceptualizations of these decisional thought processes. Previous research studies have primarily taken place outside the United States and focused on hypothetical criminal investigations (Akinci & Sadler-Smith, 2013; Fahsing & Ask, 2013; Sahm & Weizacker, 2016; Wright, 2013). Lack of adequate research provides a need for further exploration into the conceptualizations of decisional thought processes made during criminal investigations United States detectives personally experienced.

This chapter details the procedural protocols for this study addressing police detectives decisional thought processes during criminal investigations. This chapter begins with the research question addressing this study's phenomenon that guided this study. The chapter provided comprehensive details of the procedures associated with this study. These procedures consist of methodology, design, population and sample, materials and instruments, data collection, data analysis, and ethical considerations of this study. Observance to the procedural protocols established in this chapter assisted in addressing the research question associated with this study.

Research Question

Research Question: How do United States police detectives conceptualize inferential intuitive and analytic thought processes in investigative decision-making?

Research Method and Design

Qualitative methodology is applicable to studies wherein researchers seek personalized in-depth information-rich data. As I sought to explore individual conceptualizations of decisional thought processes rather than generalizations, a qualitative methodology provided proper alignment. Within qualitative studies there are five basic methodologies; ethnography, narrative, phenomenological, grounded, and case study (Ravitch & Mittenfelner-Carl, 2016). Conceptual data from the lived-experiences of police detectives were sought in this study. Participants exposed their lived experiences via their stories of experiences in decision-making during criminal investigations in which they participated. The best-suited qualitative method for obtaining this type of data was narrative inquiry (see Clandinin, 2016; Clandinin & Connelly, 2000; Kohler-Riessman, 2008).

A narrative inquiry methodological approach was appropriate to address the research question “How do United States police detectives conceptualize inferential intuitive and analytic thought processes in investigative decision making?” Narrative inquiry is a twentieth century development based on realist, postmodern, and constructionist perspectives. Narrative inquiry is based on Dewey inspired pragmatic assumptions of experiences. Dewey argued experiences interact with situations, have continuity, and are perceptual. Dewey inspired assumptions state that researchers must

understand each individual participant as a whole to understand the individual's story. An understanding of experiences involves exploring an individual's perspective of reality based on the factors that shape that individual's perception or individualistic reality (Clandinin, 2016).

The ontological commitments of narrative inquiry consist of the study of human experiences wherein human experiences are continually evolving. Human experiences are personal, subjective, and relational. Narratives told by participants are not merely one-dimensional. Narratives are transactional with the researcher and evolve with the conversational back and forth between researcher and participants (Clandinin, 2016). The epistemological commitments of narrative inquiry are two-fold. An individual's narrative is not a faithful representation of reality independent of participant and validated experiences through living, telling, and retelling produce comprehensive knowledge (Clandinin & Connelly, 2000).

Narrative inquiry stresses the importance of the narrators. Meanings are placed on narrators' specific to their cultures, demographics, linguistics, familial statuses, education, institutions, and so forth. These factors are significant to understanding participants' narratives because these factors help shape the perspectives or conceptualizations for which the stories were legitimized (Clandinin, 2016; Kohler-Riesman, 2008). Individuals' perceptions are on a continuum. The events individuals experience at one point in their lives may be perceived differently at another point in their lives. These perceptual transitions result from situations individuals have experienced in the interim. Perceptual experiences are relational to feelings, events, and people,

including the researcher (Clandinin, 2016). Previous narrative study researchers have also found participants will improvise elements of their narratives if they perceive judgments or uncertainties. The mere presence of the researcher becomes a relational factor in participants' narratives (Kohler-Riesman, 2008).

Narrative inquiry involves a collaborative effort between participants and the researcher. The researcher plays an active role in the telling, retelling, and reliving of the stories. The researcher's perspectives and experiences will affect depiction of participants' stories, no matter how organic the researcher seeks to keep the stories (Kohler-Riessman, 2008). The collaborative interview process between participants and the researcher in the telling and retelling of experiences will evolve the narrative to expose participants' truth and retold stories (Clandinin, 2016).

The purpose of this qualitative study was to explore police detectives' conceptualizations of decisional thought processes during criminal investigations. A narrative inquiry approach was used to discover these detectives' conceptualizations of the use of inferential intuitive and analytic thought processes when making decisions during criminal investigations. Narrative inquiry aligned best with this study because subjective and personal narrations of experienced criminal investigations we sought. Narrative inquiry allowed for the retrieval of quality rich data based on experiences related to the phenomenon associated with this study (Kohler-Riessman, 2008).

Population and Sample

Qualitative studies focus on individualistic quality rich data rather than quantity or generalizability of data. The intent of qualitative research is to extract, interpret, and

report on this study's phenomenon (Ravitch & Mittenfelner-Carl, 2016). Sampling must be representative of these qualitative goals. The focus and intent of qualitative research typically results in smaller and more purposeful sampling (Guetterman, 2015). Purposive sampling was used in this study to maintain proper alignment to address the research question regarding United States police detectives' conceptualizations of decisional inferential intuitive and analytic thought processes during criminal investigations.

Conceptualized data of decisional thought processes originated from a specific population (police detectives). A purposive sampling was required to address properly the research question because this study had specific characteristics and objectivity. In purposive sampling, the researcher identifies participants for the study based on their ability to answer the research question. Some may view this as a disadvantage as issues related to researcher bias and dependability of data can occur. To defend against these obstacles and increase credibility, safeguards were established (Barusch et al., 2011). A researcher identity statement is attached as Appendix B. Researcher identity statements provide detailed synopses of researchers exposing any potential biases (Ravitch & Mittenfelner-Carl, 2016). In addition, an audit trail was created. Audit trails are descriptive steps taken from the beginning to the end of studies and include researchers' decisions made throughout the studies. Audit trails allow for accountability, transparency, and increased credibility (Ravitch & Mittenfelner-Carl, 2016).

There are different strategies of purposive sampling. Research studies are not limited to just one strategy and often sampling strategies will overlap (Van Rijnsoever, 2017). This flexibility and variability of sampling is one of the benefits of purposive

sampling. Maximum variance sampling or heterogeneous sampling best aligned with this study. Heterogeneous sampling seeks to obtain a broad spectrum of perspectives related to the phenomenon (Guest et al., 2006). I sought to obtain conceptualizations based on experiences and perspectives of a diverse population of participants to reach inductively ideas addressing the phenomenon. The focus was on the perspectives of participants not the participants themselves (see Ravitch & Mittenfelner-Carl, 2016). In addition to heterogeneous sampling strategy, snowball sampling was applicable in this study. Snowball sampling occurs when participants refer individuals to the researcher who may add to the study (Guest et al., 2006). Referral participants also partook in this study.

Determining sample sizes for qualitative studies can be complicated, controversial, and convoluted. There is no one answer to address the number of participants needed in qualitative studies (Ravitch & Mittenfelner-Carl, 2016). Qualitative sampling sizes are dependent upon multiple factors. The research question, data collection, data analysis, and availability of resources direct sample sizes (Creswell, 2013). The key is to choose an appropriate number of participants that adequately address the research question (Guetterman, 2015).

Some qualitative researchers measure participant size based on theoretical saturation. Theoretical saturation occurs at a point when no new information, codes, or concepts emerge (Guetterman, 2015; Van Rijnsoever, 2017). Van Rijnsoever (2017) suggested that more is not always better in qualitative research participation. His findings supported the use of no more than fifty participants in qualitative studies. Guest et al. (2006) tested saturation levels and realized 92% theoretical saturation after

interviewing only twelve of the sixty participants in their purposive sampling qualitative study.

Narrative inquiry is laborious and time consuming (Clandinin, 2016; Kohler-Riessman, 2008). Time and cost limitations influence sampling sizes in these types of studies. Guetterman (2015) found in his meta-analytic study of sampling sizes that previous narrative inquiry research studies reached theoretical saturation with as few as two participants, however on average thirty participants were adequate to reach saturation. Participants' subcultures and cultural confidences also effect theoretical saturation. According to Guest et al. (2006) theoretical saturation can be reached with small sampling sizes in studies where purposive sampling involved specific subcultures wherein participants displayed cultural confidence.

Taking into consideration this study was qualitative via narrative inquiry with purposive sampling of participants within a specific subculture with cultural confidence; the sampling consisted of eleven participants. I originally estimated the sample size to be between ten to fifteen participants. Merriam (2009) suggested sample sizes be listed in approximation when completing proposals to allow for any needed variance. Theoretical saturation occurred in this study with eleven participants.

Participants in this study were gender nonspecific police detectives. The detectives had varying years of experience in criminal investigations. Participants came from different sociocultural backgrounds. Participants work or have worked within law enforcement organizations in different demographical areas along the Pacific North and Southwest Coasts. Participants came from small and large law enforcement

organizations servicing both large and small populations. Demographics effect law enforcement subcultures and as such interviewing police detectives from different demographics lessened the generalizability limitation and increased transferability of data in this study (Winston et al., 2017).

Instrumentation and Materials

The interview process allows the opportunity for one person to step into the experiences of another to gain insight into that person's reality. Narrative inquiry is only achieved when the collaboration of ideas and perspectives are verbalized via the interview process (Clandinin, 2016). "The skilled questioner and attentive listener know how to enter into another's experience" (Patton, 2015, p. 421). This study consisted of face-to-face individual interviews of police detectives with the researcher. These interviews connected the phenomenon addressed in this study to participants' lived criminal investigative experiences as well as how these participants constructed and made sense of their realities. The interview process is an expected instrument in qualitative research because it allows for the unification and integration of well-developed contextualized experiences (Ravitch & Mittenfelner-Carl, 2016).

Interviews for this study consisted of semi structured open-ended questions. Semi structured pre-established questions asked of all participants during the interview process established collective organization and collaboration. To maintain individuality and conversational flow, the sequence in which participants were asked these questions varied. This is an important instrumental feature of this study because narrative inquiry requires flexibility in story telling (see Clandinin, 2016). Flexibility in question

sequences allowed for in-depth narratives told in the manner in which participants desired (see Ravitch & Mittenfelner-Carl, 2016). The semi structured questions assisted in initiating and maintaining the interview process in a systematic manner (see Ravitch & Mittenfelner-Carl, 2016). Conversational style dialogues were achieved using open-ended questions that encouraged the evolution of information indicative of narrative inquiry (see Kohler-Riessman, 2008).

Narrative inquiry is a collaboration of ideas and perceptions that evolve into participants' told stories (Clandinin, 2016). Participants were able to direct the interview to expose their personalized stories with the use of follow up questions specific to their stories. Because this direction of the interviews was unknown when I established research protocols, the inclusion of individualized follow up questions was necessary. Follow up questions were not uniform, pre-established, and evolved based on the information provided by participants. The use of spontaneous follow up questions catered to the uniqueness of each interview (see Ravitch & Mittenfelner- Carl, 2016).

I utilized multiple forms of instrumentation to document the interviews for this study. All interviews were audio recorded. Audio recording enabled the subsequent review of data for analysis purposes (Saldana, 2016). Though audio recording is essential for interviews in qualitative research, its use can cause anxiety in participants. Participants are aware of the monetarization, which can affect their narrations (Ivey et al., 2014). An audio recorder serves as a visual reminder of this monetarization. Easing participants is essential to create the conversational style interview required in narrative inquiry (Clandinin, 2016). A Livescribe Echo smart pen was the audio recording device

used in this study and reduced the continual awareness of monetarization. The audio recorder is located in the smart pen and I informed all participants that the pen was the audio recording device. The removal of a visual recording apparatus created and maintained a relaxed interviewing environment (see Ivey et al., 2014).

In addition to audio-recording interviews, I took journaled notes of observational data during each interview. The journaled notes provided an additional data source. Observational data are important because not all information is verbal. Participants will often express their emotions and meanings nonverbally. Pauses in speech, facial expressions, and body language can provide informative data (Ivey et al., 2014; Kohler-Riessman, 2008). Audio data, as well as observational data, were significant sources of data in this study. The combination of these data sources triangulated data. Triangulated data increase credibility in qualitative studies because it provides an additional source of verification (see Ravitch & Mittenfelner-Carl, 2016).

Data Collection

Data were collected addressing the research question for this study via narrative inquiry. Participants exposed their personal lived experiences, as these experiences relate to decisional thought processes during criminal investigations, via this approach. Participants told their complete stories of past criminal investigations in which they partook. Participants' stories identified their investigative thought processes throughout those investigations. Participants and I obtained the re-storying of experiences through collaboration. This collaboration exposed descriptive conceptualizations of detectives' decisional thought processes during criminal investigations.

Participants in this study consisted of 11 police detectives with varying degrees of law enforcement and investigative experiences and within different demographics. I assigned each participant with a number to ensure participants' confidentiality and interviewed each participant individually. Interviews lasted between twenty-five and ninety minutes. The interviews lasted as long as was needed to reach its goal. The interviews consisted of two sections; the telling and then retelling of decisional thought processes made during criminal investigative experiences.

In the first section of each interview process, I asked each participant the same pre-established question to initiate narratives. Participants were able to answer the question as fully as they desired. This section of the interview process was without interruption or input, with the exception of slight acknowledgements of understanding or brief clarifications. Allowing participants to speak unabridged and without interruption produced raw data in reference to the research question (Ivey et al., 2014).

The second section of the interview process consisted of an interplay between participants and myself. Participants were asked pre-established and spontaneous follow up questions in reference to participants' previously told stories. This allowed for elaboration of narrations and effected retellings of the stories. The retellings of stories increased exposure to overlooked experiences, feelings, emotions, and thoughts (see Clandinin, 2016). The collaborative retellings of the stories clarified perspectives and conceptualizations (see Kohler-Riessman, 2008). Participants' retellings of their investigative experiences and decisional thought processes with researcher interaction provided significant data to address this study's research question.

Data Analysis

Data analysis methods for narrative inquiry vary depending on the research question and focus of the study (Clandinin, 2016). Thematic analysis is one of the most commonly used methods in narrative inquiry studies. Thematic analysis deals with the content of the narrator's story and strives to keep that story intact. The focus of analysis is solely on what participants say in their narratives. Data were sought to obtain police detectives' conceptualizations of decisional thought process use and reliance during criminal investigations. I sought detectives' conceptualizations of lived experiences so thematic analysis aligned best with this focus. Thematic analysis uncovered the themes of each participant's lived experiences based on their spoken words. Thematic analysis resulted in a final summation of similarities and differences across all participants' narratives (see Kohler-Riessman, 2008).

Thematic data analysis began with transcripts of the audio-recorded interviews. I analyzed each transcript individually on its own merit to isolate and organize relevant episodes into chronological and biographical accounts and then thematically summarized these episodes. Unlike qualitative coding wherein chunks of data are broken down into a word or small phrase, thematic summarization involves brief one to two sentence summaries of the theme directly derived from texts. Thematic summaries are synopses of overall meanings participants were conveying. After analyzing all transcripts individually, thematic summaries, underlying themes, general patterns, and ranges in variations across all interviews were identified (Kohler-Riessman, 2008).

Credibility or trustworthiness in qualitative studies is much different from validity and reliability in quantitative studies. Quantitative validity and reliability are measured with scientific and mathematical statistics. Qualitative credibility, also referred to as trustworthiness, is not as finite (Ravitch & Mittenfelner-Carl, 2016). A credible qualitative study results from strict methodological structure in data collection and analysis. In order to strengthen the credibility of this study and increase narrative coherence and competence, interview transcripts were also structurally analyzed. Structural analysis focuses on how the narrator told the story which results in the overall theme of the narration segment (see Kohler-Riessman, 2003). To structurally analyze the transcripts, I labeled thematically analyzed significant segments of participants' narratives. These labels consisted of the point of the story, orientation, complicating action, evaluation, resolution, and coda (ending). This attention to structure served as a triangulation measure of data because it generated information that either reinforced or contradicted thematic analysis findings. Making analytical sense of both convergent and divergent data, via structural analysis, helped increase the credibility of this study (see Kohler-Riessman, 2008).

Thematic and structural analysis are effective methods of data analysis for narrative inquiry studies. Thematic analysis focused on what participants said in their narratives. Structural analysis focused on how participants narrated their stories. The dual use of these analysis methods provided triangulation of data that increased this study's trustworthiness (see Kohler-Riessman, 2008). The dual use of these data analysis

methods provided insights into participants' conceptualizations of decisional thought processes during criminal investigations in which they partook.

Ethical Considerations

Psychological research requires ethical guidelines and practices to avoid intentional and unintentional harm. Unethical research practices and procedures can result in harm to participants and contamination of data. Ethical considerations in qualitative research studies are multifaceted and complex requiring focus on procedural and relational aspects of the study (Ravitch & Mittenfelner-Carl, 2016). Research procedures were established in this study to prioritize participants' safety, wellbeing, and privacy. The procedures established for this study abided by the ethical requirements of Walden University's internal review board to avoid participant malfeasance and to promote participant beneficence.

Participants within qualitative studies open themselves to researchers and share their experiences in relation to the study's phenomenon. Researchers must take the responsibility of receiving the stories of these experiences seriously (Clandinin, 2016). Healthy relationship cultivation is necessary throughout the interview process to show respect for participants and their stories. Equity-oriented relationships are essential in qualitative research. It is ethically important for researchers to ensure participants of their equality within the researcher-participant relationship (Ravitch & Mittenfelner-Carl, 2016). Correspondence and dialogue with participants in this study was respectful. I showed appreciation for the profession of law enforcement and for participants' efforts and time. Likewise, to maintain balance, the same respect for the researcher was

expected and realized. Any unbalance of equities might have diminished the authenticity of stories and truthfulness of data. Respectful rapport-built relationships were essential to this qualitative research study, adhered to ethical considerations, and enhanced this study's credibility (see Ravitch & Mittenfelner-Carl, 2016).

Ethical considerations and guidelines are needed that relate directly to the researcher because the researcher plays a significant role in qualitative research. Qualitative researchers must maintain an open mind and appreciate differences to effect quality research. Continual researcher self-reflection will help accomplish this and is ethically beneficial in qualitative research. It is impossible for researchers to be bias-free, because individuals consist of their experiences, cultures, and upbringings. These factors create perceptions, conceptualizations, prejudices, and biases (Ravitch & Mittenfelner-Carl, 2016). To avoid ethical issues related to researcher-bias, I drafted a researcher identity statement (Appendix B), prior to the commencement of this study. This researcher identity statement addressed my perceptions, possible biases, and conceptualizations that relate to this study's topic that may bias data collection and analysis. The researcher identity statement also served as a self-checking measure throughout this study to dissuade personal biases and prejudices from tainting participants' narratives (see Barusch et al., 2011). Quality qualitative research results when researchers look within themselves reflectively to acknowledge personal perceptions and biases (Kohler-Riessman 2008).

Transparency and honesty are ethical foundations of qualitative research. Informed consent relates directly with these two factors. Prior to participation, it was

imperative to disclose accurately to all participants the purpose, procedures, and requirements of this research study. The informed consent document for this study included time requirements, participation entailment, risks and benefits, confidentiality, and data dissemination. The consent document also informed participants that their participation was voluntary and could be rejected or terminated at any time (see Ravitch & Mittenfelner-Carl, 2016). Each participant was provided with a copy of the informed consent document approximately one week prior to participation to allow time for full review. Each participant was required to sign the informed consent document before participation within this study. The executed consents have been electronically stored and the files are password protected.

Confidentiality is another essential ethical component of qualitative research. Confidentiality allows participants to tell freely their stories without fear of disclosure, embarrassment, or retribution (Ravitch & Mittenfelner-Carl, 2016). To ensure confidentiality in this study, each participant was designated a numerical code so as not to disclose participants' names. Participants' names in relation to their numerical code are stored electronically and the file is password protected. Third parties, including transcription services, did not have access to the participant ledger. As certain demographics are applicable to this study; participants' locals, ages, genders, and experience may be disclosed but have only been referenced in relation to their numerical coding. These measures helped address any ethical considerations in relation to confidentiality in this study (see Ravitch & Mittenfelner-Carl, 2016).

Summary

This chapter contained in-depth procedural protocols to address the phenomena of investigative decisional thought processes of United States police detectives. The procedural protocols of this study included methods and design, population and sample, instrumentation and materials, data collection, data analysis, and ethical considerations. This chapter provided detailed information regarding the protocols for this study. These protocols were in proper alignment for a qualitative study. Adhering to the procedures and protocols established in this chapter assisted in retrieving information-rich data from participants that created a credible qualitative research study.

This study was qualitative as it sought to explore individual United States police detectives' conceptualizations. Conceptualizations consisted of participants' perceived beliefs based on their personal experiences, feelings, and emotions. Individual conceptualizations of participants consisted of their perceived truths and not necessarily factual truths. Factual truths were irrelevant to this qualitative study because information sought focused on participants' perceived truths (see Ravitch & Mittenfelner-Carl, 2016). This study sought to extract conceptual truths from the lived experiences of participants. Narrative inquiry was an effective method to extrapolate data and explore investigational experiences to obtain a better understanding of police detectives' decisional thought processes (see Kohler-Riessman, 2008).

Data were collected for this study via audiotaped, individual face-to face interviews. The conversational style interviews consistent in narrative inquiry were comprised of semi structured open-ended questions. The semi structure aspect of the

interview questions maintained procedural structure. The open-ended aspect of the interview questions allowed for freedom of storytelling (see Ravitch & Mittenfelner-Carl, 2016). This study consisted of 11 participants. Participants were a purposive sampling of gender nonspecific police detectives of different ages, within different demographics, and with varying degrees of investigative experience.

Upon completion of all interviews, participants' narratives were thematically and structurally analyzed. Thematic analysis focused on what participants said in their narratives. Structural analysis focused on how participants told their narratives. A dual analysis approach resulted in triangulated data and increased trustworthiness of this study. Although each narrative stands on its own story, through thematic and structural analysis of the narratives, convergent and divergent themes emerged (Kohler-Riessman, 2008). These themes may help identify factors that are not conducive to accurate investigative decisional thought processes of police detectives during criminal investigations.

In conclusion, a credible qualitative research study is dependent upon structured methodological practices that adhere to trustworthy and ethical practices (Ravitch & Mittenfelner-Carl, 2016). As shown in this chapter, this study was procedurally structured with properly aligned components. Safeguards were established to decrease researcher bias via a researcher identity statement and audit trails and increase trustworthiness in data analysis through triangulation. In addition, protocols were established to adhere to ethical considerations to protect participants, their stories, and this study's trustworthiness. This qualitative study, via narrative inquiry and with

thematic and structural analysis methods, extrapolated police detectives' narratives of decisional thought processes during criminal investigations in which they partook. The following chapter provides detailed information about the results of this study.

Chapter 4: Results

Introduction

The purpose of this qualitative study was to explore United States police detectives' conceptualizations of inferential intuitive and analytic thought processes in relation to decisions made during criminal investigations. Narrative inquiry was the method used to explore these investigative decisional thought process conceptualizations. Data from this study may expand current scientific literature on investigative decisional inferential intuitive and analytic thought processes. The following research question guided this study was:

Research Question: How do United States police detectives conceptualize inferential intuitive and analytic thought processes in investigative decision-making?

This chapter consists of data collection from in-depth individual interviews, data analysis with triangulation, and decisional conceptualization results of this study. In this chapter data collection settings, demographics, and participant summaries, as well as procedures used in data collection and analysis was described. Trustworthiness of this study and data analysis results were also addressed.

Context of Study

Once Walden University's Internal Review Board approved this study (IRB Approval Number 12-27-18-0501007) the recruitment process began with retired police detectives. Introduction emails were sent with a copy of the recruitment flyer (Appendix D) to retired police detectives requesting their participation in this study. When retired police detectives responded with their agreement to participate, informed consent letters

were provided for their review and approval. Interview locations and times were subsequently established.

Data collection for currently employed police detectives began once law enforcement supervisors provided executed letters of cooperation (Appendix E) and Walden University's IRB approved these letters. It was imperative to obtain letters from supervising law enforcement officials authorizing participant solicitation from active-duty police detectives for this study. I located appropriate law enforcement personnel who had authority to approve participation and sent emailed letters requesting cooperation. Included with the cooperation agreement was a brief synopsis of this study. One department approved participation based on this documentation and emailed the executed cooperation agreement. The other police department requested additional clarification regarding intended interview questions and verification of confidentiality regarding suspects' names and locations. The supervisor was reassured that suspect and/or witness names nor investigative outcomes were necessary for this study. The supervisor agreed to participation and emailed back the executed cooperation agreement. Upon Walden University's IRB approval of said cooperation agreements, recruitment of active police detectives began.

Requests for participation emails were sent to active-duty police detectives. Some requests were accepted, some were rejected for various reasons, and some participants never responded. Some detectives referred other police detectives who may wish to participate in this study. These referrals resulted in additional participation. To comply with confidentiality requirements, information pertaining to referring or referred

participation were not disclosed. All participants who agreed to participate in this study were accepted. Times and locations of interviews were subsequently established.

Participant Descriptions and Demographics

Participants consisted of eleven police detectives from areas within the Pacific North and Southwest Coasts. Participants consisted of ten men and one woman with a mean age of 49.73 years. The mean number of years participants worked in law enforcement is 20 years. The mean number of years participants acted in the capacity of police detectives is 9.41 years. Participants in this study served small, medium, and large populated areas. The majority of participants worked consistently within the same demographical area for most of their careers. There were no participants with law enforcement experience in both small and large populated areas. Participants were experienced in a variety of criminal investigations; burglary, theft, domestic violence, narcotics, gang-related crimes, child physical and sexual abuse, sexual assault, and homicide.

Table 1

Participants

Participants	Law enforcement demographics	Law enforcement experience / Investigative experience (years)	Primary investigative type
Participant 1	Large metropolitan area	25/12.5	Robbery/theft homicide
Participant 2	Small-medium populated area	25/22	Homicide
Participant 3	Small rural area	16/3	Robbery/theft homicide/swat
Participant 4	Small rural area	23/8	Narcotics
Participant 5	Small rural area	21.5/8	Robbery/drug enforcement/homicide
Participant 6	Small rural area	25/8	Robbery/drug enforcement/homicide
Participant 7	Small rural area	23/8	Narcotics
Participant 8	Small rural area	21.5/8	Child physical/sexual abuse
Participant 9	Large metropolitan area	27/15	Gang related crimes
Participant 10	Large metropolitan area	17/6	Narcotics/assault/gang related crimes homicide
Participant 11	Large metropolitan area	19/5	Domestic violence

Participant 1.

Participant 1 is a college educated male retired police detective who retired approximately two years ago. His law enforcement experience consisted of 25 years. His entire law enforcement career took place within a large metropolitan area. He was a police detective for a period of approximately 12.5 years. Participant 1 investigated a variety of criminal investigations including robbery, theft, gang violence, and homicide.

Participant 2.

Participant 2 is a retired police detective with 25 years' experience in law enforcement. His law enforcement career took place in a small town; however, many of his criminal investigations took place in mid-sized populated areas. He was a detective for the majority of his law enforcement career and retired approximately 23 years ago. Participant 2 investigated a variety of criminal investigations, however, primarily handled homicide investigations.

Participant 3.

Participant 3 is an active-duty police officer with 16 years' experience in law enforcement. His law enforcement career has taken place in a small rural town. He was a criminal investigative detective for approximately three years. Participant 3 investigated a variety of criminal investigations, including theft, robbery, homicide, and swat.

Participant 4.

Participant 4 is an active-duty police detective with 23 years' experience in law enforcement. He has eight years criminal investigative experience. His law enforcement

career has taken place within a small rural town. Participant 4 has investigated a variety of criminal investigations; however, his primary investigative experience is in narcotics and drug enforcement.

Participant 5.

Participant 5 is an active-duty police officer with 21.5 years' experience in law enforcement. His law enforcement career has taken place in small to medium populated towns. He was a criminal investigative detective for eight years. Participant 5 has investigated robbery, drug enforcement, and homicide criminal investigations.

Participant 6.

Participant 6 is an active-duty police officer with 25 years' experience in law enforcement. His career has served towns with small to medium populations. Participant 6 was a criminal investigative detective for eight years. Prior to becoming a police officer, he was in the military. Participant 6 handled a variety of criminal investigations including robbery, drug enforcement, and homicides.

Participant 7.

Participant 7 is an active-duty police detective with 23 years' experience in law enforcement. He has eight years' experience in criminal investigations. Participant 7's law enforcement career has taken place in a small rural town. Participant 7 has investigated multiple types of crimes; however, his primary and current experience is in narcotics crimes and drug enforcement.

Participant 8.

Participant 8 is an active-duty police officer with 21.5 years' experience in law enforcement. Her career has taken place within a small-populated town. She was a criminal investigative detective for eight years. Participant 8 investigated multiple types of crimes; however, she predominantly investigated child physical and sexual abuse cases.

Participant 9.

Participant 9 is a retired police officer with 27 years' experience in law enforcement in a large metropolitan area. He was a police detective for 15 years. Prior to entering law enforcement, he was in the military. Participant 9 has been retired for approximately 12 years. Participant 9 investigated gang-related crimes that consisted of vandalism, narcotics, assault, and homicide.

Participant 10.

Participant 10 is an active-duty police officer with 17 years' experience in law enforcement. He has six years' experience as a detective. His law enforcement career has taken place in a large metropolitan area. Participant 10 investigated a variety of crimes including narcotics, assault, gang-related crimes, and homicide.

Participant 11.

Participant 11 is an active-duty police detective with 19 years' experience in law enforcement in a large metropolitan area. He was a police detective for five years. Prior to becoming a police officer, he was in the military. Participant 11 has investigative

experience in domestic crimes consisting of violence, restraining orders, and child abductions.

Settings and Procedures for Data Collection

All interviews took place at locations and times of each participant's choice. Interviews for two of the retired participants took place in their respective homes. The third retired participant's interview took place in enclosed offices via Skype due to logistics. The remainder of the interviews consisted of active-duty police detectives. These interviews took place in participants' respective police departments within private enclosed conference rooms or interrogation rooms. There were no interruptions during any of the interviews. I personally completed all interviews with participants. Interviews with currently employed detectives took place while officers were on and off duty. Supervisors provided permission to on duty participants to participate in interviews. The interviews with on duty participants did not interfere with participants' work obligations. All participants confirmed they were comfortable within their interview settings and no participants expressed stress or discomfort during the interviews.

The interviews began with participants reviewing and signing consent forms (Appendix A). Participants were asked if they had any questions about the consent forms and were reminded the interviews were confidential and voluntary. Participants were shown the recording device, which was a LiveScribe pen, prior to interviews beginning. Participants did not express any objections to the recording device or to the fact that interviews were to be recorded. Participants were then briefed on the study and were asked to describe a criminal investigation in which they partook. Initially, a few

detectives had difficulties deciding on or remembering particular cases. In these instances, participants were asked to reference a hypothetical case, which eventually led to memories of actual cases. I took observational notes of nonverbal cues during the interviews. At the conclusion of each interview, participants' questions were addressed and they were thanked again for their time and contributions to this study. Thank you notes with 10 dollar coffee gift cards were mailed to the retired police detectives after their interviews were completed. Active duty participants were presented with coffee gift cards at the conclusion of the interviews. One police department did not allow active police detectives to accept gift cards and in adherence with this supervisory instruction, those participants refused the gift cards.

Data Analysis

Narrative research data analysis involves the determination of emergent themes through an evolutionary process. The researcher must be aware of all aspects of participants' stories from the beginning unabridged stories, through researcher interaction in the retelling of stories, to the final retold collaborative stories (Clandinin, 2016). This form of analysis occurs in stages, wherein each stage evolves into the next (Kohler-Riessman, 2008). Participant interviews were analyzed separately and independent of each other to establish emergent conceptualized themes. The emergent themes from individual interview analyses were then compared and contrasted to establish collaborative themes. In following this procedural format, individualistic themes and collaborative comprehensive themes were established.

While waiting for the transcription of audio interviews, data analysis first began with listening to the recorded interviews. This audible review provided familiarization with the interview experiences and establishment of notes referring to significant information. Upon receipt of the written interview transcripts, I compared written transcripts with the audio files and made required adjustments. Analysis of the written transcripts resulted in comprehensive summaries for each participant. These summaries consisted of each participant's demographic details, observational notes, thought process consistency, thematic analysis notes with applicable quotes, structural analysis notes with applicable quotes, and a list of conceptual themes established from thematic and structural analysis methods.

Review of interview transcripts first consisted of identifying inferential intuitive and analytic thought processes in participants' initial stories and notating the frequency of each decisional thought process. This analysis provided an introduction into participants' conceptualizations of decisional thought processes. After the establishment of this conceptual baseline, I thematically analyzed initial stories told by participants notating themes and identifying substantiating quotes. The next step of transcript analysis involved the re-telling of stories wherein researcher interjection had taken place. During the retelling portion of interviews, participants were asked questions regarding investigation details and perceptions of decisional thought processes. Participants' responses were thematically analyzed and emergent themes along with substantiating quotes were notated. The combination of established emergent themes from initial stories and perceptual emergent themes from the retelling of stories established overall

conceptualizations. This resulted in the final retold stories that produced comprehensive summaries of individualistic conceptualizations.

Data were triangulated via structural analysis of participants' interviews. Thematic analyses of narrative data are concerned with what participants say in their stories. Structural analyses of narrative data are concerned with how participants tell their stories. This secondary analysis helped measure thematic analysis accuracy. Structural analysis entails separating informative segments of participants' stories into stanzas. These stanzas usually have at least one abstract, orientation, action, resolution, and coda (see Kohler-Riessman, 2008). I structurally analyzed participants' stanzas from their interviews in the telling and retelling of their investigative stories. Structurally analyzing stanzas that occurred at different times during the interviews, with and without researcher integration, provided a broad spectrum for analysis (see Clandinin, 2016). This secondary structural analysis measure confirmed, added to, and contradicted thematic analysis findings of participants' stories.

After thematic and structural analysis of data, emergent themes of each were added to participants' individual summaries. Divergent themes established through structural analysis were notated in participants' individual summaries. Participants' all-inclusive summaries were then compared and contrasted collaboratively to established collective comprehensive emergent themes. This final review of triangulated data of all participants' summaries led to the formation of comprehensive emergent themes related to investigative decisional inferential intuitive and analytic thought processes.

Evidence of Trustworthiness

Procedures within this study relating to credibility, transferability, dependability, and confirmability established trustworthiness in this study (see Ravitch & Mittenfelner-Carl, 2016). The research question for this study directed data collection and analysis upon the completion of an extensive literature review and establishment of a theoretical framework. These procedures assisted in the establishment of trustworthiness. Additional procedures, such as purposive sampling, verbal and transcribed interviews, saturation, in-depth descriptors, and saturation also assisted in the establishment of trustworthiness.

Credibility

Credibility in qualitative research equates to internal validity of data in quantitative research. Data are foundational to research studies and therefore must be valid to substantiate the results and solidify the study (Ravitch & Mittenfelner-Carl, 2016). To ensure the accuracy of data in this study, all interviews were recorded. At the end of each interview, audio recordings were transferred and saved separately and securely in Echo Desktop. Echo Desktop audio files were then electronically forwarded to a professional transcription company. The transcription company returned the transcripts in separate Microsoft word document files that were electronically and securely stored. I personally reviewed the written transcripts against their respective saved audio files and made corrections as needed to ensure accuracy for data analysis.

Transferability

Transferability in qualitative research refers to the degree to which the results from this study may be applicable to other situations and populations (see Terpstra & Schaap, 2013). Qualitative research, especially narrative qualitative research, typically consist of small purposive sampling sizes that may hinder generalization. To increase transferability, the setting, participants, demographics, and findings of this study were descriptively disclosed. Verbatim participant quotes were also provided. The results of this study may be generalized to other populations whose participant demographics are similar to those within this study.

Dependability

In qualitative narrative research, dependability refers to the reliability of data (Ravitch & Mittenfelner-Carl, 2016). Descriptive procedural processes established dependability in this study. Process replication in future studies is possible based on the comprehensive and detailed procedures disclosed in this study. The inclusion of audit trails also established dependability in this study. I created journaled notes of decisions, procedures, thoughts, and interpretations that evolved during data collection and data analysis stages. The inclusion of audit trails allowed for self-monetarization as well as reflexivity during this study (see Ravitch & Mittenfelner-Carl, 2016).

Confirmability

Confirmability in qualitative research equates to objectivity in quantitative research. Confirmability relates to the extent to which alternate researchers can confirm the results of this study (Ravitch & Mittenfelner-Carl, 2016). Confirmability was

achieved with the inclusion of an identity statement (Appendix B). I do not have personal career experience in law enforcement nor have been investigated or arrested for a crime. I do have familial relationships that relate to both. To disclose any possible biases a researcher identity statement was created. This identity statement discloses my life experiences that may have inadvertently affected data. The inclusion of the identity statement will allow future researchers to interpret the extent, if any, they allocate to researcher bias (see Ravitch & Mittenfelner-Carl, 2016).

Study Results

In narrative research, the ultimate retold story develops from participants' uninterrupted first told stories and the process of retelling stories with researcher input. Comparison of these comprehensive retold stories produced significant emergent themes (see Clandinin, 2016; Clandinin & Connelly, 2000; Kohler-Riessman, 2008). Significant themes were established related to police detectives' conceptualizations of inferential intuitive and analytic thought processes in relation to investigative decisions. These themes evolved by comparing the retold stories of all participants. Multiple themes associated with inferential intuitive thought processes were established; starting point, informative, experience driven, value, and fallibility. Reoccurring themes in relation to analytic thought processes were also established; mandatory, purpose, and collaboration. These themes developed from the comprehensive data that aligned with the research question of this study.

Table 2

Themes

Thought Process

Associated Common Themes

Inferential Intuitive Thought Processes

Theme 1: Starting point – providing direction upon presentation of new information

Theme 2: Informative – providing directional information including information for self-protection

Theme 3: Experience driven – experience increased intuitive use and reliance

Theme 4: Value – inferential intuition results in investigational value

Theme 5: Fallible – inferential intuition can be inaccurate

Analytic Thought Processes

Theme 6: Mandatory – analytic thought processes are required during criminal investigations

Theme 7: Purpose – differing reasons for the use of and reliance on analytic thought processes

Theme 8: Collaboration – criminal investigative decisions are based on both inferential intuitive and analytic thought processes

Theme 1: Inferential Intuitive – Starting Point

According to default-interventionist theory, intuitive thought processes act in a manner that provide individuals with immediate information (Kahneman, 2011). This instinctive information directs an initial spontaneous decision (Thompson & Johnson, 2014). Data from this study supported default-interventionist theory. Numerous excerpts from participants' interviews disclosed that inferential intuitive thought processes acted as starting points. These starting points directed participants' subsequent thought processes, decisions, and actions. At the presentation of new information, inferential intuition planted thoughts or ideas into the minds of the detectives that directed these detectives' decisions and actions. Inferential intuitive thoughts provided participants starting-point decisional direction during their criminal investigations.

Participant 1 discussed bicycle thefts and stated:

“If they're BMX, the first thing that comes to mind is kids, because kids want them for parts, mountain bikes, I'm going to think more of transient because their more heavy duty, they're going through canyons, Now if they're training bikes, well now this is probably going to be some middle-class person or persons from middle class background because they're going to notice the \$4,000 to \$5,000 training bike.”

Participant 2 stated: “I wasn't sure why I knew something wasn't right, because at first sight it was probable that the death was of natural causes, but I just knew something wasn't right.”

Participant 3 stated:

“But to me, high-crime area based upon the totality of the circumstance, that sends a little buzzer off in my head that, “Hey, something’s going on here and I need to talk to that guy.” It might be nothing. It might be a guy out taking a walk at 3:00 in the morning because he has insomnia. You know, I’ve encountered that before.”

Participant 5 referred to inferential intuitive thoughts as “themes” and stated:

“...so you’re trying to follow up on that theme and see if you’re right.”

Participant 8 stated: “Because I’m cataloguing those in my mind, as she’s saying, A, B, C, and D. I’m like okay, well, I want to follow up on that. I want to follow up on that. I want to follow up on that.”

Participant 10 stated: “Hunches are very real things and I teach them to always follow up on them because there’s something that you haven’t processed yet.”

Theme 2: Inferential Intuitive – Informative

According to Kahneman (2011), inferential intuition provides individuals with immediate information that will assist and/or protect. The results from this study supported this concept. All but one participant referred to inferential intuition as being informative. Some participants referred to inferential intuitive thought processes as providing them with information when questioning witnesses and suspects. These participants found this information beneficial in determining truthfulness and when seeking to bond with suspects to obtain confessions. Other participants described this intuitive ability as a protection measure. Participants’ inferential intuitive thought

processes enabled them to immediately apprise individuals and their surroundings to avoid harm. Participants also stated informative intuition was established from verbal, nonverbal, and body language cues.

Participant 1, when describing a fellow detective's intuitive thoughts during an initial interview of a witness, who later turned to be a suspect, stated: "So long story short, first minute she walked in ... she had already figured things out, and knew who it was."

Participant 2 described inferential intuition as being informative at an initial meeting with a potential suspect and stated: "you just automatically read body language, eye shifting, you follow that instinct."

Participant 3 described inferential intuitive thought processes as being informative during patrol. He stated:

"However, the average person when they're walking down the street doesn't turn their head away from the police, they don't try to avoid eye contact or anything like that. And so, that inference that something is going on is just present because you've seen it before a bunch of times."

Participant 4 likened his intuitive sense to protection. When describing an undercover controlled drug buy, he stated:

"Cops, generally... after you've been a cop for a little while, you just start getting that instinct where you can just tell something is not right. But there are times when it starts getting a little more uncomfortable what they're asking and why."

Participant 5 referred to inferential intuition as being a protective mechanism when describing a situation wherein the suspect had a weapon, he stated: “So, and you can tell by their actions, because hand movement, you know, or they might look away from me or turn a certain side of their body away from me.”

Participant 6 also referred to intuitive thought processes as being a protective mechanism when he discussed confronting a suspect in his homicide investigation, he stated:

“That whole sixth sense, I completely believe in it. You’re on a call and you’re already getting inky feelings just based on their nonverbal cues, the way they’re standing, the way they’re talking to you or their fists clench. Are they taking their hat off, getting ready for a fight? If those hairs on the back of your neck stand up, you better listen to it.”

Participant 7 perceives inferential intuition as a means of protection. When referring to an undercover controlled drug buy, he stated “Because, you know, you do this a while and you just kind of get a feel of how a person acts and stuff.”

Participant 8 referred to inferential intuition as an ability to bond with suspected child abusers, she stated:

“Yeah. There are little telltale signs. Right. They're becoming more comfortable with you. You're building more of a rapport with. There have been cases where I've had to really let my guard down and feed into their own crap that they're spoon feeding themselves as to why they sexually assaulted a child.”

Participant 9 referred to inferential intuition as being informative for protection. When referring to his dealings with gang members he stated: “I think obviously, knowing and understanding the gang issues, I mean, you just know it. I mean, it’s not a matter of analyzing anything. It’s a matter of just knowing that they’re going to go with it.”

Participant 11 stated:

“That’s intuitive, because you’re, you’re thinking this guy’s going to talk. So, I, I have an intuition that I can get him to admit to it, or at least provide some type of incriminating answers to at least lean that way, where I could probably make an arrest.”

Theme 3: Inferential Intuitive – Experience Driven

Previous researchers have documented that experience increases inferential intuitive thought process use, reliance, and accuracy (Akinci & Sadler-Smith, 2013; Fahsing & Ask, 2013; Wright, 2013). Inexperienced police detectives have less law enforcement knowledge to draw from and therefore exhibit less intuitive confidence. This results in decreased intuitive thought process use and reliance (Evans & Stanovich 2015; Olds & Link, 2016; Wright, 2013). This concept was indicative to many of participants’ in this study. Many participants referenced increased inferential intuitive thought process use and reliance based on their extensive law enforcement experience. The results from this study reinforced the conceptualization that experience has an effect on the use of and reliance on inferential intuitive thought processes during criminal investigations.

Participant 3 stated: “When police officers have an inference that something is going on because you have seen it before a bunch of times and it’s hard to articulate those things on paper.”

Participant 4 stated: “Cops, generally... after you've been a cop for a little while, you just start getting that instinct where you can just tell something is not right.”

Participant 6 stated: “That intuition definitely plays a part in it, and it does get stronger over time.”

Participant 8 stated her inferential intuitive knowledge, based on extensive experience, expedited victim interview processes: “Our younger guys use these checklists. We're all supposed to use the checklists. But after working 1,000 of those cases, I don't.”

Participant 10 stated:

“What I can tell you now, me being almost a 17-year veteran, my trainees almost believe I can tell the future because I can tell them what’s going to happen on calls, why it’s going to happen and whatnot, and what I explain to them is that the reason I know what I’m going to do.”

Participant 11, when questioned about intuition and experience, responded: “I think it’s a whole lot of it. The more experienced you are and the more you know, and you’ve made the mistakes and have learned from them, automatically you don’t do that again.”

Theme 4: Inferential Intuitive – Value

Previous researchers reported mixed results when identifying the value police detectives place on inferential intuitive thought processes (Fahsing & Ask, 2013; Sahm & Weizacker, 2016; Wright, 2013). Fahsing and Ask (2013) found that participants either minimized or denied use of or reliance on inferential intuitive thought processes during criminal investigations. Wright (2013) found overall participants' acceptance of inferential intuitive thought processes. Participants within this study identified acceptance of inferential intuitive thought processes. The majority of participants in this study expressed their acknowledged use of, reliance on, and appreciation for inferential intuitive thought processes during criminal investigations. The majority of participants in this study also disclosed inferential intuitive thought processes were accepted within their law enforcement organizations and viewed as an investigative tool.

Participant 1 expressed his admiration for intuitive thought processes:

“But intuitive and just the skill, I mean work hand in hand. But like I said there are some officers that intuition is just far and beyond, almost like a sixth sense, then what I personally have. And I admire those guys. I just look at them just like in awe.”

Participant 2 expressed his view of intuitive value in stating: “You have to pay attention to those initial thoughts.”

Participant 3 expressed the value he perceives in the use of inferential intuitive thought processes: “So, that hunch is key to success many times”. Participant 3 also

stated recruits are taught how to recognize and use inferential intuitive thoughts which reinforces organizational value as well:

“So, like we run a reserve academic. And they try to – I think officers are scared – or detectives even – are scared of going outside the law [referring to inferential intuition]. They’re like, “I saw this. You know, it’s very linear and very single-tracked. I saw this, he violated this crime, I did this, I did that.” And they fail to mention all those other body language cues or the actions – the actual actions – of that person, their nervousness, and things like that.”

Participant 5 identified his perception of the value of inferential intuitive thought processes in relation to training recruits:

“Like, I trained, I was training a guy the other day and picked up a woman with a warrant, she always has warrants and she, she saw us and the pedaling started getting faster and I told him she’s telling you right now she has a warrant.”

Participant 6 expressed his faith in investigative decisional inferential intuitive thought processes stating: “You learn to trust it.”

Participant 8 disclosed value in inferential intuition in reaching a positive outcome during an interrogation of a child sexual abuse suspect: “But sometimes you need to read between the lines, and feel your setting, and determine what is going to get you the best response for your outcome.”

Participant 10 expressed perceptual value in inferential intuition is the ability to unconsciously foresee situations to improve reactions:

“Well, it’s just because I know these things or I’ve seen so many different things, so I can see slightly into the future of what’s going to happen and it allows me to react quickly, whether that’s in a use of force or anything like that.”

Participant 10 also disclosed he teaches his trainees to identify and acknowledge inferential intuitive thought processes: “I teach my trainees today; your sixth sense is a very real thing. Hunches are very real things and I teach them to always follow up on them because there’s something that you haven’t processed yet.”

Participant 11 stated a value of inferential intuition is that it allows for expedient reactions: “It can end it a lot faster than going through all the proper steps.”

Theme 5: Inferential Intuitive – Fallible

Inferential intuitive thought processes are vulnerable to inaccuracies. Inferential intuition is not based on presentation of facts and are subject to illusions, heuristics, personal beliefs, and biases. These factors significantly influence intuitive thought process use, reliance, and accuracy (Kahneman, 2011). The majority of participants within this study identified their awareness of the fallibility of inferential intuitive thought processes. This awareness caused participants to engage alternate thought processes to verify the accuracy of their intuitive thoughts and change investigative direction when required.

Participant 1 expressed his reservations with inferential intuitive thought processes: “Yeah because they’re so experienced or feel so confident in their abilities that they may jump the gun.”

Participant 3 expressed the fallibility of inferential intuitive thought processes when discussing a police-stop. In spite of his internal intuitive warnings, the individual he stopped was not acting nefariously. He stated:

“No big deal. But to me, high-crime area based upon the totality of the circumstance that sends a little buzzer off in my head that, “Hey, something’s going on here and I need to talk to that guy.” It was a guy out taking a walk at 3:00 in the morning because he had insomnia.”

Participant 5 expressed his awareness that inferential intuition is fallible, when referring to some of his inferential intuitive thoughts: “Sometimes, you’re right, most of the time, you’re wrong.”

Participant 10, when speaking of sole reliance of inferential intuitive thought processes, stated: “That’ll lead to the convictions that aren’t accurate.”

Participant 11 expressed his awareness of inferential intuitive thought process fallibility when referring to a back-end interrogation of a suspect “So, you can have an intuition and think it’s going to go, but if you blow it, your whole case is gone.”

Theme 6: Analytic - Mandatory

All participants in this study expressed, through their stories and via their responses, that analytic thought processes are essential to decision-making during criminal investigations. Some participants expressed analytic thoughts were in response to inferential intuitive thoughts, as purported in default-interventionist theory (see Thompson & Johnson, 2014). Some participants referred to analytic thought processes as independent of other thought processes (see Kahneman, 2011). All participants told their

unabridged criminal investigation stories almost exclusively via analytic thought processes. Participants' retold stories also reinforced participants' conceptualizations regarding the necessity for decisional analytic thought processes during criminal investigations in which these participants partook.

Participant 1 discussed his investigative procedures when investigating a series of bicycle thefts:

“So as I go out – since it’s a series and there’s seven in that one neighborhood I’m going to start knocking on doors. I’m going to start talking to people instead of just sitting at my desk looking at seven reports. I’m going to take each report and go follow up and talk to the people who actually had their bikes stolen.”

Participant 2 discussed analytic thought processes practiced at the beginning of each day during a homicide investigation: “So we met every morning and discussed all the information and evidence we collected the day prior. We then established an investigative plan for the day.”

Participant 3 referenced analytic procedures when tracing victim’s steps to link a crime to possible suspects:

“So, we were able to backtrack that through the State of Oregon to get certain times and see – kind of like a trail of breadcrumbs, if you will – of where he had made purchases. And we were able to get video and kind of track back who he’d been with. Got a vehicle that he had been in at that time, her description of it.”

Participant 4 relates analytic thought processes to determining whether or not to investigate a suspected drug dealer:

“So, I'll start with them and start doing research on that individual, finding out who they are, what they're about, and if we have any past information on them, crime histories, connections, who they're associated with, and put all those pieces together to be able to confirm what the informant said, that this person is legitimately involved in that type of activity.”

Participant 5 disclosed some of his analytic thought processes and procedures at the initiation of a homicide investigation of a juvenile killed on public streets: “So, you go into investigative mode, you're getting evidence, you're trying to figure out what's going on. And, then once you get that collected, you have officers, detectives out in the field actually knocking on doors, canvassing.”

Participant 6 described how his analytic thought processes verified his intuitive thought processes when determining whether a suspect would be arrested: “We did a work up on him, even though we didn't absolutely—couldn't say it was him. We had nothing to go on, so we just kept diving into it, but we did start tracking him.”

Participant 7 described investigative procedures of a drug investigation exclusively via analytic thought processes:

“And, then we did that two or three times until, just to kind of get the lay of the land as far as their, their way of doing things. And, then we wanted to, we would bust them. So, with all those controlled buys, I would apply for, applied for search warrants, went into their house with the search warrant and we ended up finding an ounce, just over about an ounce and a quarter.”

Participant 8 discussed her analytic thought procedures during the beginning stages of a child abuse case:

“Then, I determine whether or not by and through just kind of looking at, even Googling, "What is the temperature of water? Or, what does the water temperature need to be to cause second third-degree burns? Then comparing it to that, and then even going to the next step of me just taking my arm, my bare arm, and putting it under the water while another officer videoed it.”

Participant 9 described his analytical procedures while investigating a gang shooting: “I was doing research on the computer with my partner and I interviewed the girl and I’m putting a lineup together – a photograph lineup together – until we identify the character.”

Participant 10 expressed the requirement of analytic thought processes when preparing for interrogations: “the big thing is coming up with plans for interviews... I was able to get a confession out of this guy in five minutes because of a plan.”

Participant 11 explained analytic thought processes are required in determining lie detection in a child sexual abuse suspect: “So, that pretext phone call was huge for us, because now we’ve corroborated it and now, we had probable cause to arrest.”

Theme 7: Analytic – Purpose

Previous researchers have identified numerous contextual factors associated with the use of and reliance on analytic thought processes (Alison et al., 2013; Calabretta et al., 2017; Elbanna & Fadol, 2016; Fahsing & Ask, 2013; Sahm & Weizacker, 2016; Wright, 2013). Upon the retelling of participants’ investigation stories, the importance of

investigative decisional analytic thought processes remained consistent. However, the reasons or purposes for analytic thought process use and reliance varied. Based on this multi-purpose identification this comprehensive theme of analytic thought process purposes is included.

Participant 1 stated the need for analytic thought processes were to provide a solid case for prosecution:

“It took a long time because they had to put the pieces together. We have to put all these pieces together before we can present it to the DA”. He also expressed using analytic thought processes made the job interesting “It’s the little bits and pieces that make it interesting, to put it together.”

Participant 2 conceptualized the use of analytic thought processes during criminal investigations determined the quality level of the detective. He emphasized at least three times during the interview his disdain for law enforcement professionals who are: “lazy and do half-assed jobs, not using their mind’s capacity.”

Participant 3 expressed one of the primary purposes for the use of analytic thought processes during criminal investigations is based on a need to quantify inferential intuitive thought processes:

“And I hit this home with those people that our students or recruits in the academic pretty hard because it’s going to come up later. You can interact with somebody based on a lot of things. And if you’re doing it for the right reason and you can articulate that, then, that’ll lead to a positive outcome more often than not.”

Participant 4 conceptualized the purpose or need for analytic thought process use during criminal investigations is to remain competitive with drug dealers:

“I have spent eight years of my 20-year career working just narcotics, so I've handled just about every way a deal can possibly go down – good or bad. But as time progresses, drug dealers progress, get smarter, learn our trends, learn what we're doing, so we have to be smarter in how we do things.”

Participant 5 perceived analytic thought processes as necessary to fact-check intuitive thought processes: “...so you're trying to follow up on that theme [inferential intuitive thought] and see if you're right.”

Participant 6 believes one of the primary purposes behind analytic thought process use during criminal investigations is to retain employment:

“You learn to—if you're going to make a decision to arrest somebody, you really learn to make sure that you can back up that intuition with articulation.

Obviously, you don't want to just do it off intuition. It just doesn't help you career...”

Participant 8 stated that a successful abuse investigation requires analytic thought processes to lessen harm to the abused child. Confronting the suspect with analytic facts improves the chance of a confession. Usually abused children are able to avoid trials when confessions are obtained. When responding to a question regarding analytic thought processes Participant 8 responded: “In the 20 years that I've been here and the eight years that I worked nothing but child physical and sexual abuse cases, I think I went to trial maybe three times.”

Participant 10 purported one of the primary purposes of analytic thought process use is to fact-check intuitive thoughts so as to avoid confirmation bias:

“All right, so the issue that I have, I think it’s important for us to develop opinions on cases, and you can have an opinion and you can place your opinion here, and you allow the facts to lead you to wherever they lead you, but if they lead you here, you must take your opinion and push it to right here.”

Participant 11 expressed the gravity of the situation is a primary purpose for analytic thought process usage and reliance during criminal investigations:

“I can’t really [rely on inferential intuition], I, I can’t say I’ve ever done that. I’ve always investigated a case, because again, in our business, it’s not like you lost a backpack or a bike. This is hardcore life-changing, sometimes life-ending.”

Theme 8: Analytic/Inferential Intuitive – Collaboration

Previous researchers on investigative decisional thought process studies identified the dual use of and reliance on inferential intuitive and analytic thought processes (Akinci & Sadler-Smith, 2013; Fahsing & Ask, 2013; Wright, 2013). When questioned about inferential intuitive and analytic thought process use, all participants in this study collectively conceded dual use of these decisional thought processes during criminal investigations. Though participants varied in each thought processes’ importance, purpose, and frequency, they all agreed in the dual access of these decisional thought processes during criminal investigations.

Participant 3 expressed the dual use of these thought processes when referring to a missing person case:

“So, as soon as we got this information And, so we, we had this hunch, like I wonder if maybe we should go look at this property that the narcotics dealer was attached to, that he had, he was buying, basically.”

Participant 5 responded: “*Well, I think it is a combination of everything*” when asked what thought processes are used during criminal investigations.

Participant 6 responded when questioned about the duality of thought process use during criminal investigations: “Both of them do...if you’re going to make a decision to arrest somebody, you really learn to make sure that you can back up that intuition with articulation.”

Participant 8 stated criminal investigations were:

“A combination of both, I think you have a series of information (internal and external) that's placed in front of you. You look at that information. You strategically plan out what is going to be your best course of action.”

Participant 10 stated:

“I think it’s important for us to develop opinions [inferential intuitive thoughts] on cases, and you can have an opinion and you can place your opinion here, and you allow the facts to lead you to wherever they lead you...”

Participant 11 responded when questioned about investigative thought processes stating:

“...there’s a lot of cases that are very similar, and you look at and you already know, just reading the report, you’re like I know where this is going. And, sure

enough, by the time you're done with it, it's like I knew that. ...there is a process. And, it's in a certain, you know, certain direction, but it doesn't always work that way. It depends on the case, depends on your victim, it depends on your suspect, it depends on witnesses. It, it depends on the evidence.”

Summary

The purpose of this narrative qualitative study was to explore United States police detectives' conceptualizations of inferential intuitive and analytic thought processes used and relied upon during criminal investigations in which they partook. Data obtained from participants' stories within this study were extracted from individual face-to-face interviews. Through narrative thematic analysis, *what* participants said in their stories were established. Through narrative structural analysis, *how* participants told their stories were identified. The triangulation of data through thematic and structural analysis solidified identifiable themes associated with participants' conceptualizations. Collective exploration of participants' conceptualizations resulted in significant comprehensive themes associated with investigative decisional inferential intuitive and analytic thought processes. Chapter 5 will contain information related to the interpretations of the findings from this study, limitations of this study, and recommendations for further research. Chapter 5 ends with the positive social change possibilities related to the findings from this study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this narrative qualitative study was to explore United States police detectives' conceptualizations of inferential intuitive and analytic thought processes in relation to decisions made during criminal investigations in which they partook. Narrative research seeks to derive a comprehensive understanding of the lived experiences of individuals. These comprehensive lived experiences evolve with the back and forth communication style interview between participants and the researcher (Clandinin, 2016; Clandinin & Connelly, 2000; Kohler-Riessman, 2008). Participants' comprehensive evolved stories in this study exposed their conceptualizations with respect to investigative decisional inferential intuitive and analytic thought processes. A better understanding of police detectives' conceptualizations of decisional thought processes adds to existing literature on thought process use and reliance. The findings from this study have implications for positive social change. Data from this study can be used to improve training and education for police detectives and new police recruits.

The following research question provided the foundational direction of the interview questions in this narrative qualitative study:

Research Question: How do United States police detectives conceptualize inferential intuitive and analytic thought processes in investigative decision-making?

Information in chapter 4 identified the results of this study on participants' conceptualizations of inferential intuitive and analytic thought processes in relation to decisions made during criminal investigations in which they partook. Identified themes

emerged associated with these conceptualizations. These conceptualizations consisted of inferential intuitive-starting point, inferential intuitive-information, inferential intuitive-experience driven, inferential intuitive-value, inferential intuitive-fallible, analytic-mandatory, analytic-purpose, and analytic/inferential intuitive-collaborative.

Theme 1 - Inferential intuitive-starting point refers to default-interventionist theory wherein detectives' immediate intuitive thought processes provided a starting point for future investigative decisions. Theme 2 - Inferential intuitive-information refers to the concept that intuitive thought processes provided immediate information to detectives for investigative assistance and protection. Theme 3 - Inferential intuitive-experience driven is a theme that emerged wherein the majority of detectives correlated law enforcement experience with investigative decisional inferential intuitive thought process use and reliance. Theme 4 -Inferential intuitive-value is an emergent theme wherein detectives exposed their acceptance and appreciation for inferential intuitive thought processes. Theme 5 - Inferential intuitive-fallible is an all-inclusive theme wherein participants conceptualized inferential intuitive thought processes as being vulnerable to inaccuracies.

Theme 6 - Analytic-mandatory is a unanimous conceptualized theme wherein participants purported the necessity for analytic thought processes during criminal investigations. Theme 7 - Analytic-purpose is a divergent theme wherein multiple reasons for analytic thought process use and reliance emerged. Theme 8 - Analytic/inferential intuition-collaborative is the final theme that emerged from participants' interviews wherein most participants expressed investigative decisions

resulted from both inferential intuitive and analytic thought processes. These emergent themes evolved from the descriptive investigative stories told by participants in this study. These emergent themes represented participants' conceptualizations of investigative decisional inferential intuitive and analytic thought processes.

Chapter 4 also included procedures and protocols established to insure the trustworthiness of this study. Adherence to these protocols increased credibility, transferability, dependability, and confirmability of this study. This chapter consists of the interpretations of these findings, limitations associated with this study, recommendations for future research, and possible positive social change implications.

Interpretation of Findings

This section includes interpretations of findings from this study on United States police detectives' conceptualizations of investigative decisional inferential intuitive and analytic thought processes. These interpretations are presented according to the research question and from the context of peer-reviewed literature referenced in Chapter 2. In Chapter 2, I reviewed and synthesized previous research studies related to intuitive thought processes, inferential intuitive thought processes, analytic thought processes, criminal investigations, law enforcement culture, heuristics, illusions, and beliefs.

Based on the reviewed literature from Chapter 2, decisions consist of intuition and analytic thought processes. Multiple contextual factors affect each thought process' use and reliance. Individuals with domain-specific experience exhibit inferential intuitive thought processes. Individuals access inferential intuitive thought processes more frequently and inferential intuitive thought process decisions tend to be more accurate

than simple intuition. Researchers also have documented that the decisional thought processes of police detectives during criminal investigations correlate with investigative accuracy. Inaccurate investigative decisions are one of the primary factors associated with inaccurate suspect identification, nonapprehensions, and wrongful convictions (Rossmo, 2016). Injustices and diminished faith in law enforcement can result from inaccurate investigative decisions. What is unknown with respect to investigative decisional thought processes is how United States police detectives conceptualize inferential intuitive and analytic thought processes in relation to decision-making during criminal investigations in which they partook. I address this gap in research through the following emergent themes that evolved from participants' investigative stories.

Inferential Intuitive – Starting Point

Intuitive thought processes were primarily explored during the retelling of participants' stories. The majority of participants expressed either directly or in the telling of their investigation stories that intuitive thought processes provided them with starting points throughout their investigations. Upon the presentation of new information during criminal investigations, participants' inferential intuitive thought processes provided investigative direction. Participants would encounter new information and immediate inferential intuitive thoughts would arise. Participants would then investigate further in the direction set by those intuitive thoughts. Participant 1 illustrated this conceptualized theme in his investigation of a series of bicycle thefts. Information as to the types of stolen bicycles was presented to Participant 1. This presentation of information activated an immediate inferential intuitive thought as to what type of

person(s) the suspect(s) would be. This led Participant 1 to begin his investigation looking into possible suspects within that group:

BMX bicycles stolen > Suspects = kids > Investigative direction - kids

Mountain bicycles stolen > Suspects = transients > Investigative direction - transients

This emergent theme was supported by previous research studies on investigative decisional thought processes. Participant 1's series of thought processes, along with other participants who expressed this conceptualization, supported the arguments of default-interventionist theory. According to default-interventionist theory, intuitive thought processes yield default responses. Default responses result in immediate decisions and actions. These immediate decisions or actions will remain constant unless analytic thought processes intervene and redirect decisions and/or actions (Thompson & Johnson, 2014). Wright (2013) also found in her study of police detectives' decisional thought processes that police detectives rely on their immediate inferential intuitive thought processes upon the presentation of new information. Wright found that police detectives have a cycle of cognition wherein contextual cues are presented, which lead to spontaneous hypotheses generation, which lead to inferences, and then to decisions or actions.

Fahsing and Ask (2013) found that investigative "tipping points" caused a shift in decisional thought processes. Like Wright (2013), they found that hypotheses generation occur in inferential intuitive mindsets (implemental mindsets). The studies by Fahsing and Ask and Wright purported detectives use and rely on inferential intuitive thought processes in investigative hypotheses generation. With respect to inferential intuitive

thoughts providing investigative starting points, the findings from this study are consistent with the findings of Fahsing and Ask and Wright. Inferential intuitive thought processes provide detectives with starting points for investigative decision-making.

Inferential Intuitive – Informative

Inferential intuition can provide individuals with information that directs and protects (Kahneman, 2011). Ten participants within this study perceived inferential intuitive thought processes as being informative. Participants expressed that immediate intuitive thought processes provided information used in investigative decision-making. Participants also expressed investigations wherein inferential intuitive thought processes afforded them protection. Others perceived information gained from inferential intuition enhanced their bonding abilities. All participants correlated this intuitive information with the ability to decipher immediately verbal and nonverbal cues. According to Wright and Wheatcoft (2017), police detectives' abilities to identify verbal and nonverbal cues exceed those abilities within the general public and is an acknowledged concept among law enforcement.

Participants within this study stated inferential intuition informatively prompted them to investigate or interrogate further. This concept was supported in Wright (2013) wherein participants in that study disclosed inferential intuitive thought processes directed lines of inquiry for further investigation. Participants in this study also expressed that their inferential intuitive thoughts provided them with immediate information for their protection. Worrall (2013) also found this protective mechanism concept in his law enforcement decisional thought processes study. Participants in this

study also perceived their inferential intuition enhanced their ability to bond with suspects. Participants within this study conceptualized inferential intuitive thought processes as providing them with information. This intuitive information enabled them to assess quickly individuals and situations that enhanced investigative goals and increased personal safety.

Participants 1, 2, 3, 5, 7, and 11 perceived that their inferential intuitive thought processes enabled them to interpret nonverbal cues that provided immediate information. Participants' intuitive thought processes directed attention to possible wrongdoers or enabled adaptation during interrogation questioning. Participant 3 illustrated this concept in the apprehension of an individual with felony warrants. Participant 3 stated that the individual's body language activated his inferential intuitive thought processes instructing him to investigate further. Participant 11 described an interrogation scenario wherein his inferential intuition provided him with information that successfully directed his interrogation tactics. The detective intuitively processed the suspect's verbal and nonverbal cues that directed his questioning and led to a confession.

Participants 4 and 6 perceived that inferential intuitive thought processes provided information that helped maintain their safety. Their inferential intuition alerted them to the possibility of danger throughout their law enforcement experiences. Participant 4 conceptualized his inferential intuition increased his ability to maintain safety when interacting with known drug dealers while undercover. Participant 6 described a scenario of inferential intuitive thought process protection when he confronted a suspect. Participant 6 stated he intuitively suspected something was not right based on the

suspect's nonverbal cues and he reacted by pulling his weapon. This reaction, based on inferential intuitive thought processes, resulted in his protection.

Participants 8 and 9 stated suspects' verbal and nonverbal cues provided them information that increased suspect bonding during investigations and interrogations. Participant 8 stated inferential intuitive information helped her bond with a sex-offender suspect. This ability to bond resulted in the establishment of suspect-investigator trust and ultimately resulted in a confession. Participant 9 expressed his ability to bond with gang members was a result of information provided by his inferential intuitive thought processes. His intuitive abilities assisted him in blending within gang environments to obtain information for investigations.

According to Wright and Wheatcoft (2017) verbal and nonverbal cues, such as emotion, body language, eyes, vocal pitch, and external cues, provide implicit and immediate thoughts. Intuitive thought accuracy, based on these cues, are just over chance at 54% within the general public. Police detectives' intuitive thought accuracy, based on these cues, are higher ranging from 64% to 72% (Mann & Vrij, 2006). Two factors are primarily associated with determining truth/deception via these contextual cues. There must be an observable behavior differences between truth-tellers and deception-tellers and individuals must be cognizant of those differences. It may be the latter that relates to law enforcements' increased intuitive accuracy in verbal and nonverbal lie detection (Wright & Wheatcoft, 2017).

Researchers have shown that law enforcement officers, in high stakes situations, immediately and accurately identify verbal and nonverbal deception (Mann & Vrij, 2006;

Mann, et al., 2004; Mann et al., 2006; Vrij & Mann, 2001; Mann et al., 2006; Wright et al., 2015a). Hartwig and Bond (2011) went so far as to say that due to the nature of high stakes situations, intuitive judgments about deceptive behaviors may be more accurate than analytic information. Wright and Wheatcroft (2017) found that law enforcement officers are more sensitive to these cues and therefore can immediately and implicitly identify behaviors indicative of deception. Data from these studies supported accuracy is plausible and even probable in detectives' ability to intuitively interpret cues and respond accordingly. The findings from these studies may provide scientific rationale for the conceptualization that inferential intuitive thought processes are informative. Participants in this study self-reported high rates of accuracy when relying on inferential intuitive information based on social cues associated with truth/deception detection.

Inferential Intuitive – Experience Driven

Experience is a contextual factor associated with inferential intuitive thought process use and reliance (Brogaard, 2014; Calabretta et al., 2017; Wright, 2013). The study completed by Calabretta et al. (2017) found that inexperienced police detectives used and relied upon inferential intuition at lower rates than experienced police detectives rely. Elbanna and Fadol (2016) referred to inferential intuition as a composite phenomenon of sensing and acquired knowledge based on experiences. The findings from this study supported the findings from previous studies wherein experience correlates with inferential intuitive thought process use and reliance. Participants in this study purported that their domain-specific experiences have an effect on inferential intuitive thought process use and reliance.

Participants 2, 3, 4, 6, 8, 10, and 11 perceived a correlation existed between experience and inferential intuitive thought process use and reliance. As an example, Participants 2 and 4 stated that experiences have increased their intuitive abilities to identify crime scene inaccuracies. Participant 10 referred to his 17 years' experience in law enforcement as having increased his intuitive abilities wherein his trainees believe he can see into the future. Participant 11 perceived his law enforcement experiences increased inferential intuitive thought process use that allowed him to intuitively avoid past mistakes.

Wright (2013) also found that experience is a significant contextual factor associated with inferential intuitive thought process use and reliance. In her study of police detectives, she found that more experienced police detectives, detective constable inspectors (DCI's), relied upon intuitive thought processes more often than less experienced police detectives, detective inspectors (DI's). DCI's relied upon their inferential intuition 70% of the time wherein DI's relied upon inferential intuition 62% of the time. DCI's also showed increased inferential intuition accuracy over DI's. DCI's were inaccurate 21% of the time and DI's were inaccurate 26% of the time. The results from this study reinforced the findings of previous researchers that experience has a correlational relationship with inferential intuitive thought process use and reliance in detectives' criminal investigative decision-making.

Inferential Intuitive – Value

The value law enforcement officers place on inferential intuition is not consistent throughout existing research studies (Akinici & Sadler-Smith, 2013; Fahsing & Ask,

2013; Wright, 2013). Fahsing and Ask (2013) found that United Kingdom and Norwegian law enforcement officers diminished the importance and even the existence of inferential intuitive thought process-based decisions during criminal investigations. In contrast, Wright (2013) found in her study of United Kingdom law enforcement officers that detectives placed value on inferential intuition in perceptual recognition of interpretations of crime scenes. Akinci and Sadler-Smith (2013) found law enforcement officers value inferential intuition and linked inferential intuitive thought processes to measurements of workplace performance. A common theme that emerged from this study was that participants placed a degree of value on inferential intuitive thought processes in criminal investigative decision-making. Many participants in this study placed a high degree of value on inferential intuitive thought processes use and reliance in investigative decision-making.

Participants 2, 3, 5, 6, 7, 8, 9, 10, and 11 expressed value in investigative decisional inferential intuitive thought processes. Participant 3 placed a high value on inferential intuitive thought processes. He feels the problem is not with the accuracy of inferential intuitive thoughts, but in the way in which officers articulate their inferential intuitive thoughts. This inability to articulate causes problems with prosecutorial scrutiny. Participant 5, much like Participant 3, stated that inferential intuition has significant value however, the judicial system and the court of public opinion do not accept this value. Participants 1, 5, 6, and 8 reported high value in inferential intuitive thought processes wherein their intuitively-based investigative decisions resulted in apprehensions, confessions, and convictions. Participant 11 expressed value in the speed

of inferential intuitive thought processes in investigative decision-making. According to Participant 11, inferential intuitive thought processes can be advantageous in situations that require quick responses.

Identifying the value police detectives place on inferential intuitive thought processes is significant as it relates to usage and reliance in investigative decision-making. Cognitive style refers to differences in the representation, organization, value, and processing of information of thought processes. Understanding cognitive styles, which is inclusive of intuitive and analytic thought processes, aids in understanding decision-making and behaviors (Akinci & Sadler-Smith, 2013). The results of this study provided evidence that police detectives place a significant value on inferential intuition when making investigative decisions. Data from this study supports the conceptualization that inferential intuition is a valued investigative tool accessed during criminal investigations.

Inferential Intuitive – Fallible

Numerous researchers have identified that intuitive thought processes are susceptible to error (Elbanna & Fadol, 2016; Evans & Stanovich, 2013; Kahneman, 2011; Rassin, 2016; Sahm & Weizsacker, 2016; Wright, 2013). Intuitive thought processes are not fact- nor evidence-based and spontaneously result from an individual's subconscious. Intuitive thought processes are internal and consist of an individual's experiences and beliefs. It is for these reasons; intuitive thought processes are susceptible to error via heuristics, biases, and illusions (Kahneman, 2011).

Many participants within this study reported awareness in the fallibility of inferential intuitive thoughts. Participant 1 expressed investigative errors can occur with the reliance on inferential intuitive thought processes. He stated intuitive thought processes lack evidence and can result in premature decisions causing investigative errors. Participants 3, 5, 10, and 11 stated inferential intuitive thought processes could lead to inaccurate decisions, inaccurate suspect identifications, and wrongful convictions. Participant 11 expressed inferential intuitive thought process reliance can cause rush-to-judgements that can disrupt an entire investigation.

Police detectives' awareness of the fallibility of inferential intuitive thought processes is a significant theme associated with criminal investigative decisions. Sole reliance or over-reliance on inferential intuitive thought processes can cause decisional errors resulting in inaccurate suspect identifications and nonapprehension of suspects because these thought processes are not evidence- nor fact-based (Rossmo, 2016). Inferential intuitive thought processes, even with the benefit of experience, are vulnerable to factors that increase the likelihood of cognitive error. Factors that correlate with intuitive thought process cognitive errors are heuristics, illusions, biases, personal beliefs, and FORs (Kahneman, 2011; Thompson & Johnson, 2014). Data from this study supported findings from previous research wherein police detectives are fully aware of the fallibility of inferential intuitive thought processes. This awareness indicated that police detectives practice restraint when relying upon inferential intuitive thought processes during criminal investigations.

Analytic - Mandatory

Analytic thought processes are structured, time consuming, methodical, complex, and information-based (Evans & Stanovich, 2013; Kahneman, 2011; Wright, 2013).

Analytic thought processes consist of problem identification, information collection, hypothesis development and assessment, and logical choice decisions. Analytic thought processes result in higher accuracy rates than intuitive thought processes however, are not exempt from cognitive errors (Evans & Stanovich, 2013; Olds & Link, 2016). Analytic thought process use and reliance are encouraged in criminal investigative decision-making to assist in creating sustainable criminal cases that can withstand judicial scrutiny (Rossmo, 2016).

I identified analytic thought process use and reliance in all participant interviews within this study. Participants' referenced and described their analytic thought processes overwhelmingly in the initial telling of their investigative stories. Participants methodically described their primarily analytic unabridged investigation stories. When I interjected myself into the interviews and requested their perceptions of different thought processes, all participants reaffirmed their initial stories stating analytic thought processes were mandatory in investigative decision-making. Participant 1's story of an investigation into stolen bicycles illustrated this concept. Participant 1's investigation was systematic wherein he described each strategic step that he analytically aligned to obtain evidence. Participant 2 disclosed team meetings wherein detectives met to analyze and review collected evidence from the previous day. Participant 5 referenced an investigative mode mindset wherein he equivocated analytic thoughts with canvassing

areas, collecting evidence, and identifying solutions. Participant 7 exposed analytic thought process use and reliance in steps completed during his drug investigation; including communicating with informants, setting up controlled buys, and serving search warrants. Participant 8 exposed her analytically-based investigation, wherein each stage of the investigation was analyzed before implemented.

The analytically mandated findings from this study supported research by Rassin (2016) wherein he purported the beneficial use of analytic thought processes. Rassin (2016) advocated for the use of analytic thought processes in investigative decision-making. Analytic investigative decisions provide fact-based evidence that is supported within the judicial system. Participants' conceptualizations regarding the necessity of investigative decisional analytic thought processes supported this argument. Some participants expressly stated prosecutorial and judicial processes require analytical investigative decisions to substantiate evidence, create sustainable criminal cases, and to withstand prosecutorial scrutiny. Participants' stories within this study established a consistent conceptualized theme wherein analytic thought processes are mandatory for decision-making during criminal investigations.

Analytic – Purpose

All participants within this study acknowledged analytic thought process use and reliance during criminal investigations they discussed in their interviews. However, what I identified as being diverse were the primary reasons disclosed by participants as to why they used and relied upon analytic thought processes in investigative decision-making. Prosecutorial purposes, detective quality, quantification, competition, fact-checking,

continued employment, harm alleviation, confirmation bias, and significance of outcome were all reasons participants within this study used and relied upon analytic thought processes when making investigative decisions.

Participant 1 expressed prosecutorial requirements were a primary reason for the use of analytic thought processes during criminal investigations. According to Rassin (2016), investigative decisions must be explicable to withstand judicial scrutiny. Analytic thought processes are explicable because they are fact- and evidence-based. Therefore, investigative decision-making should consist of analytic thought processes. Participant 1 stated that before he transfers a case to the district attorney, all evidence must be justified analytically to present an evidence-based sustainable case to the district attorney.

Analytic thought processes require cognitive effort and ability. These are two significant factors associated with its deterred use (Kahneman, 2011). Participant 2 expressed law enforcement officers who resist cognitive ease and invest cognitive effort in investigative decision-making are higher caliber officers. He purported analytic thought process use equates to detectives' quality levels. Participant 2 stated detectives who do not invest cognitive effort in investigative decisions are ineffective, lazy and lower quality detectives.

Participant 3 had a unique conceptualization of the primary purpose for analytic thought process use and reliance during criminal investigations. He stressed one of the primary reasons to access analytic thought processes is to quantify inferential intuitive thought processes. Proper quantification and articulation of decisions result in

sustainable prosecutorial cases. Proper quantification and articulation of decisions, regardless of their origination, result from analytic thought process activation. This conceptualization may present problems with respect to confirmation bias and suspect misidentification if the inferential intuitive thought processes being quantified were inaccurate (see Wallace, 2015).

Participant 4 is a narcotics law enforcement officer and conceptualized analytic thought processes as enabling him to remain competitive with wrongdoers. He stated that many individuals within high-level drug organizations are highly intelligent. This requires narcotic detectives to use and rely on analytical thought processes to remain analytically competitive with these individuals. Participant 5 conceptualized analytic thought processes as a means to fact-check intuitive thoughts, information, and evidence presentation. This conceptualization supported Kahneman (2011) wherein he argued that one of the primary functions of analytic thought processes is to monitor and regulate intuitive thought processes.

Participant 6 equated continued employment with analytic thought process use and reliance. He believes investigations that are unsubstantiated by decisions based on analytic thought processes will ultimately lead to dismissals. Participant 6 also stated public pressures and prosecutorial scrutiny cause the need for analytic thought process use and reliance during criminal investigations. Rassin (2016) supported Participant 6's conceptualization wherein analytic thought processes are essential in investigative decision making for prosecutorial reasons. Participant 8 conceptualized analytic thought process use and reliance ultimately reduces harm to child abuse victims. Participant 8

purported that analytically processed investigations increase the likelihood of suspect confessions, which negates child abuse victims from experiencing the detrimental effects of a trial.

Participant 10 conceptualized that one of the primary purposes for investigative analytic thought process use and reliance is to avoid confirmation bias. Confirmation bias occurs when individuals prematurely settle on an idea, theory, or hypothesis and ignore any subsequent information that contradicts or does not support the pre-established idea, theory, or hypothesis (Wallace, 2015). Confirmation bias is a significant factor associated with investigative decisional errors. Confirmation bias can result in omission of evidence, misinterpretation of ambiguous information, and minimization of inconsistent information or evidence (Rossmo, 2016). Confirmation bias is extremely difficult to avoid because it reinforces internal feelings of rightness and is belief-based (Andrzejewska et al., 2013). Participant 10 articulated that a primary purpose for analytic thought process use is to monitor inferential intuitive thought processes that are improperly influenced by confirmation bias.

Elbanna and Fadol (2016) stated that the significance of consequences correlates with analytic thought process activation. Participant 11 stated one of the primary reasons he relied on analytic thought processes during criminal investigations related to outcome severity. Arrests significantly affect individuals' emotional and financial wellbeing (see Kavanaugh, 2016). Participant 11 believes police detectives should not diminish the severity of the consequences associated with arrests. Participant 11 purported for investigative analytic thought process use and reliance to reduce cognitive errors that may

lead to suspect misidentifications. Reduction in cognitive errors increases decisional accuracy. Increased decisional accuracy correlates with a reduction in judicial injustices (Olds & Link, 2016).

Rassin (2016) purported for sole reliance of analytic thought processes during criminal investigations. Inferential intuitive thought processes lead to less accurate decisions that decrease investigative accuracy (Narchet et al., 2011). Analytic thought processes withstand prosecutorial and judicial scrutiny because these thought processes are fact- and evidence-based. Detectives' conceptualizations of analytic thought process purposes may provide additional information relating to contextual factors associated with its use. This study provided data on some of the reasons why United States police detectives use and rely upon analytic thought processes for investigative decision-making. These purposes add to the list of domain-specific contextual factors associated with investigative analytic thought process use and reliance.

Analytic/ Inferential Intuitive – Collaborative

According to dual process theory decisions consist of two distinct thought processes, intuitive and analytic thought processes (Pennycok et al., 2015). Although these thought processes are paradoxical (Calabretta et al., 2017) many decisions result from a combination of both intuitive and analytic thought processes (Kahneman, 2011). Calabretta et al. (2017) purported not only for the use of both intuitive and analytic thought processes in decision-making, but for a full appreciation for the advantages of each thought process. A full appreciation of these decisional thought processes results in maximum benefit. Results from this study supported the dual use of these thought

processes in investigative decision-making. Participants within this study disclosed and displayed numerous occasions of dual thought process use and reliance during their investigative stories. Participants expressed collaborative use reaffirming the arguments of default-interventionist theory wherein analytic thought processes regulate intuitive thought processes in decision-making (see Thompson & Johnson, 2014). Participants also expressed and exhibited the dual use of inferential intuitive and analytic thought processes independent of each other during investigative decision-making.

Participants 3, 5, 6, 8, 10, and 11 expressed or exhibited dual thought process use and reliance in relation to the findings associated with default-interventionist theory. These participants analytic thought processes were accessed to accept or reject their immediate intuitive thoughts. To illustrate this concept of collaborative dual thought process use, Participant 3 described an investigative situation wherein suspect identification based on his inferential intuition needed verification. Although Participant 3 believed he had the correct suspect, he did not feel confident in sole intuitive reliance. Participant 3 accessed analytic thought processes to verify the accuracy of his intuitive thought processes and then proceeded to make his arrest.

Participants 1, 2, and 4 expressed and exhibited separate use of and reliance on both inferential intuitive and analytic thought processes during their criminal investigations. Participant 1's investigation story illustrates this concept of separate yet dual use of decisional thought processes. Participant 1 started his investigation based on intuitive thought processes when categorizing possible suspect types. Participant 1 then processed the remainder of his investigation based on analytically directed decisions

through evidence collection. Participant 5's story exhibited the fluid and intermingled use of decisional inferential intuitive and analytic thought processes throughout his investigation.

Although previous research data are divided on the advantages of intuitive and analytic thought process use and reliance, most data supported the existence of dual thought process use and reliance in decision-making (Brogaard, 2014; Calabretta et al., 2017; Fahsing & Ask, 2013; Olds & Link, 2016; Pennycock et al., 2015; Pretz, et al., 2014; Rassin, 2016; Worrall, 2013; Wright, 2013). Participants in this study expressed and exhibited dual thought process use and reliance in their investigative decision-making. The findings from this study with respect to the use of and reliance on inferential intuitive and analytic thought processes supported the findings from previous research studies on investigative decision-making. The dual use of inferential intuitive and analytic thought processes represented a consistent conceptualized theme throughout all participant investigative stories.

Theoretical Framework

The results from this study validated the theoretical framework for this narrative inquiry study and provided clarity to the research question. The theoretical framework for this study was dual process theory based upon the assumptions of Kahneman (2011), Evans, and Stanovich (2013) along with the paradoxical model of Calabretta et al. (2017). The premise of dual process theory is that individuals have two distinct thought process types. Type 1 consist of intuitive thought processes. These thought processes are subconscious, immediate, belief- and experience-based, and effortless. Type 2 consists

of analytic thought processes. These thought processes are conscious, deliberate, fact-based, and effortful. Dual process theorists argue these thought processes are accessed in decision-making, either independently or collaboratively.

Inferential intuitive thought processes result from domain-specific experiences and are considered more reliable than basic intuitive thought processes (Kahneman, 2011; Salas et al., 2010). Inferential intuition consists of stored information within one's semantic memory that was gleaned from experiences (Kahneman, 2011). Inferential intuitive use and reliance in investigative decision-making can be advantageous. Increased inferential intuitive thought process use and reliance results in situations where detectives are afforded little information or time. Organizational and public pressures also increase inferential intuitive thought process use and reliance. Inferential intuitive thought processes also have disadvantages. These thought processes are susceptible to cognitive errors because they are experience- and belief- based. These factors subject inferential intuitive thought processes to prejudices, illusions, biases, and heuristics which interfere with decisional accuracy (Brogaard, 2014; Calabretta et al., 2017; Olds and Link, 2016; Pennycock et al., 2015; Pretz et al., 2014; Worrall, 2013).

The ability to access analytic thought processes in decision-making is one of the primary characteristics that differentiates human beings from other species and renders them superior (Pennycock et al., 2015; Rassin, 2016). Analytic thought processes are beneficial in investigative decision-making. Analytic thought processes are not emotion nor bias influenced. Analytic thought processes are fact- and evidence-based and therefore can withstand judicial scrutiny (Rassin, 2016). Analytic thought processes

require vigilance, cognitive ability, and time (Rossmo 2016). These factors can detract from analytic thought process use and reliance (Kahneman, 2011; Pennycock et al., 2014).

According to Kahneman (2011) and Evans and Stanovich (2013) individuals will access both thought processes when making decisions. Intuitive and spontaneous thought processes occur first and unless individuals activate analytic thought processes, these intuitive thoughts will remain constant. This concept is supported by default-interventionist theory (Thompson & Johnson, 2014). Calabretta et al. (2017) argued that focusing on the importance of one thought process over the other is a hindrance to dual process theory. They stated that rather than focusing on one thought process' value over the other, benefit is found in the paradoxical aspects of each as well as their paradoxical relationship to each other. Effective collaborative use results from an awareness and acceptance of each thought process' characteristics.

Existing literature on decisional thought processes differ regarding use of, reliance on, and accuracy of intuitive and analytic thought processes (Fahsing & Ask, 2013; Rossmo, 2016; Wright, 2013). Elbanna and Fadol (2016) suggested that correlating accuracy of these dual thought processes is difficult, if not impossible, due to the abundance of contextual factors associated with thought process use and reliance. Elbanna and Fadol found contextual factors associated with thought process use and reliance are cognitive ability, beliefs, biases, domain-specific experience, time constraints, situational complexity, and outside pressures. These factors create a large spectrum of variance wherein the effects may be limitless.

During this narrative study, it was apparent that inferential intuitive and analytic thought processes, independently and collaboratively, directed investigative decision-making. Participants exhibited and expressed acknowledged use of and reliance on both inferential intuitive and analytic thought processes when making decisions during investigations in which they partook. Participants also exhibited and expressed a necessity for the use of and reliance on both inferential intuitive and analytic thought processes in investigative decision-making. Participants also expressed conceptualized value in both of these decisional thought processes. Dual process theory with the assumptions of Kahneman (2011), Evans and Stanovich (2013), and Calabretta et al. (2017) provided a strong theoretical framework for this study. The findings from this study, based on participants' stories, reinforced the arguments of dual process theory wherein decisional thought processes consist of intuition and analysis.

Limitations of the Study

This study provided data on police detectives' conceptualizations of investigative decisional thought processes. Data from this study contributed to the existing body of literature on investigative decisional thought processes. Data from this study also added to existing literature relative to contextual factors associated with thought process use and reliance. Although this study added to current research literature, it is important to identify the limitations of this study. Acknowledging the limitations of this study encourages a full understanding of the results of this study. Limitations associated with this study consisted of generalizability, memory-recall, and time-lapse perceptions.

Generalizability is the ability to apply data from this study to multiple domains and populations. Generalizability is an identified problem within qualitative research because qualitative research results in rich data, however, that data are individualistic (Ravitch & Mittenfelner-Carl, 2016). This study focused on the conceptualizations of United States police detectives' decisional thought processes. This hindered generalizability two-fold. Conceptualizations were personal realities that are inconsistent with generalizability of data. Participants' culture, beliefs, age, and professional and personal experiences may have affected their conceptualizations (see Ravitch & Mittenfelner-Carl, 2016). In addition, the research question directed the need for purposive sampling of individuals within a specific domain. Though data from this study may be applicable to individuals within different domains it cannot be directly associated with domains outside of United States police detectives from the Pacific North and Southwest Coasts. To mitigate for limitations associated with generalizability, I sought participation from detectives with varying degrees of experience, from different locals within different cultures, and in areas with population-size variance.

Narrative research requires the story telling of participants' experiences. The final retold story in which conceptualizations emerged; result from the told and re-told participants' stories. These stories were experienced in the past and are reliant on memory recall. Memory recall adds to the limitations of this study (see Kohler-Riessman, 2008). Memory recall is susceptible to inaccuracies wherein participants simply forgot details of their investigative stories. Participants' ability to correctly recall their investigative experiences may affect their current stories. Forgotten or

misremembered information can have an impact on the results established in this study. To mitigate for memory recall limitations, participants were asked to discuss criminal investigations that they could easily recall or that occurred in the recent past.

Participants' told and retold stories formed the basis for this narrative research study. Individualistic recalled experiences are subject to subsequent experiences, evolved beliefs, and maturity. Individuals' perceptions evolve over time based on their lived experiences. Individualist perceptions influence the telling and retelling of participants' stories (see Clandinin, 2016). Perceptual evolution is another possible limitation of this study. Participants' current perceptual beliefs may not be the same perceptual beliefs they had during their actual investigations. Subsequent life events and experiences may have affected participants' current perspectives causing a discrepancy in conceptualizations. Even though this limitation could not be mitigated or reduced, the purpose of this study was to obtain conceptualizations. These conceptualizations are significant even with the limitation of perceptual influence.

Recommendations

This study was completed to address a current gap in research wherein United States police detectives' conceptualizations of decisional thought processes during investigations in which they partook were under researched. Data from this study resulted from individual face-to-face interviews with 11 United States police detectives from differing locals within the Pacific North and Southwest coasts. Participants had varying degrees of experience and partook in a variety of criminal investigations. Participants' collective stories provided valuable insights into their perceptions and

conceptualizations of lived investigative experiences. Participants' conceptualizations in this study provided data to add to existing literature on investigative inferential intuitive and analytic thought processes decision-making.

Participants for this study were police detectives from the Pacific North and Southwest Coasts. Although participants originated from different locals, demographical limitations existed due to logistics and financial limitations. According to Verhoeven and Stevens (2012) law enforcement organizations differ based on demographics and culture. For this reason, it is recommended that additional research, similar to this study, be conducted in different locals within the United States. Data retrieved from research studies similar to this study, derived from detectives in differing demographics and from different cultures, may add to the findings of this study. Investigative decisional thought process data from police detectives within differing locals and from differing cultures may increase generalizability and add to literature on investigative decisional inferential intuitive and analytic thought processes.

Participants within this study partook in a wide spectrum of criminal investigative experiences. Participants completed criminal investigations involving robberies, burglaries, homicides, child physical abuse, child sexual abuse, narcotics, domestic violence, gang-related crimes, and so forth. Most participants had experience in a variety of crimes, however, usually one or two specific types of crimes encompassed most of their investigative experiences. It appeared that the type of crime investigated may have an impact of decisional thought process use and reliance. Additional research on decisional thought process use and reliance, in relation to primary investigative crime

types, may be beneficial. I recommend that future investigative decisional thought process research be conducted correlating thought process use and reliance in relation to the investigated crime type. I also recommend that additional research be conducted correlating investigative decisional thought processes with primary crime-type investigative experience. Data from research studies aimed on these possible correlations may provide important information linking criminal investigation type and criminal-type investigation experience to decisional thought process use and reliance.

This study provided data on the conceptualizations of United States police detectives' investigative decisional thought processes. This study did not explore nor confirm the accuracy of decisional thought processes in relation to participants' investigative stories. Additional quantitative research studies measuring the accuracy of investigative decisions based on these conceptualizations of decisional thought processes may prove insightful. It is recommended that future quantitative studies be conducted to include accuracy measures. Ultimately, the determination of accurate investigative decisions is a collective goal of investigative decisional thought process research. Additional research measuring the accuracy of detectives' investigative decisional thought processes, based on the findings of this study, may add to this collective goal.

This study provided quality rich data on United States police detectives' conceptualizations of investigative decisional inferential intuitive and analytic thought processes. Recommendations were made to further psychological research in relation to investigative decisional thought processes. These recommendations included demographical and cultural expansions, investigation and experience type correlations,

and accuracy measurement inclusion via quantitative research. Additional research based on these recommendations may add to existing literature on investigative decisional thought processes. The inclusion of the recommended research may provide additional information that may improve criminal investigative decision-making.

Implications for Social Change

Psychological research is most beneficial when the findings contribute to or create positive social change. “Positive social change is a deliberate process of creating and applying ideas, strategies, and actions to improve the worth, dignity, and development of individuals, communities, organizations, institutions, cultures, and societies” (Vardhan, 2010, p 1). Positive social change produces improved societal conditions. The findings from this study have the potential to contribute to or create positive social change by enhancing training and education for police detectives and recruits.

Data from this study on United States police detectives’ conceptualizations of inferential intuitive and analytic thought processes in relation to criminal investigative decision-making confirmed and added to current research. Participants’ conceptualizations in this study provided additional insights into how, when, and why police detectives use and rely upon these thought processes in investigative decision-making. A better understanding of these decisional investigative thought processes may increase identification of decisional thought processes that are inconsistent with accurate and efficient criminal investigations. Law enforcement agencies can use the reaffirmed

data and new data from this study to possibly improve investigative training protocols and education for detectives.

The decisional investigative thought processes of police detectives correlate with investigative accuracy. Investigative decisional errors hinder effective and accurate criminal investigations (Rossmo, 2016). Inaccurate criminal investigations can lead to suspect misidentification and nonapprehensions (Carter & Carter, 2016; Clow & Leach, 2013). Investigative suspect misidentifications and nonapprehensions result in societal safety issues, instill mistrust in law enforcement, impede faith in the judicial system, and present financial burdens to society (Kavanaugh, 2016). Data from this study provided information regarding investigative decisional thought processes that can be used to improve investigative training and education. These educational and training enhancements may ultimately lead to more accurate investigative decision-making and more effective criminal investigations. Society would benefit from increased investigative accuracy with improved trust and faith in law enforcement and the judicial system, increased societal safety, and reduction in financial expenditures.

Data from this study can also result in positive social change by enhancing training and education for new police recruits. In addition to investigative services, law enforcement officers affect society in multiple ways. How police officers interact with society significantly affects how society will interact with them (Geberth, 2015). Although participants in this study disclosed analytic thought process predominance, inferential intuitive thought processes accounted for a significant amount of investigative decisions. Data from this study, showing significant inferential intuitive thought process

use, beckon the need for increased inferential intuitive thought process education for new police recruits. Researchers have found new police officers, due to their inexperience in law enforcement, will access intuitive thought processes less often (Elbanna & Fadol, 2016; Fahsing & Ask, 2013; Kahneman, 2011; Wright, 2013). It would be beneficial to educate new police recruits on the fallibilities of inferential intuitive thought process, before increased intuitive activation. Enhanced educational training provided to new police recruits regarding the contextual factors associated with cognitive errors resulting from inferential intuitive thought processes, may improve law enforcement-societal interactions.

Conclusion

This study focused on the lived investigative experiences of United States police detectives. To address this focus, narrative research method was chosen to collect and analyze data in response to this study's research question. The purpose of this study was to address a gap in literature involving United States police detectives' conceptualizations of investigative decisional inferential intuitive and analytic thought processes. Through the telling, retelling, and retold participants' stories, investigative decisional thought processes were explored. Data from these multiple-versioned stories resulted in detailed comprehensive conceptualizations of investigative decisional thought processes. Collective analysis produced emergent themes associated with investigative decisional inferential intuitive and analytic thought processes. Participants' conceptualizations and subsequent emergent themes from this study reaffirm and add to existing literature and provide a better understanding of the phenomenon of investigative decisional inferential

intuitive and analytic thought process use and reliance (Akinci & Sadler-Smith, 2013; Fahsing & Ask, 2013; Rassin, 2016; Wright, 2013).

Many of the conceptualized themes from this study reaffirmed data from previous research studies regarding inferential intuitive and analytic thought processes (Akinci & Sadler-Smith, 2013; Fahsing & Ask, 2013; Rassin, 2016, Rossmo, 2016; Wright, 2013). According to Wright (2013) and Fahsing and Ask (2013) police detectives access inferential intuitive thought processes upon presentation of new information for hypotheses generation. Data from this study supported these findings wherein participants conceptualized inferential intuitive thought processes as starting points (hypotheses generation).

This study corroborated the findings from previous research studies wherein experience correlates with inferential intuitive thought process use and reliance. Experienced police detectives use and rely upon inferential intuitive thought processes more often than inexperienced police detectives (Alison et al., 2013; Sahm & Wezsacker, 2016; Wright, 2013). Participants within this study were experienced law enforcement officers. The mean number of years of law enforcement experience was 20 years. Participants exhibited and disclosed significant amounts of decisional inferential intuitive thought process use and reliance during criminal investigations. Sahm and Wezsacker (2016) argued that domain-specific experienced individuals' inferential intuitive thought processes result in accurate decision-making. In this study, self-reported instances of inferential intuitive decisional accuracy were high; however, it is

important to note the focus of this study was not on decisional accuracy and self-reports of decisional accuracy were not verified.

According to Worrall (2013) police officers rely upon inferential intuitive thought processes for protection. Participants in this study expressed this concept of protection, which reaffirmed the findings of Worrall. Participants disclosed multiple scenarios wherein inferential intuition enabled them to react instinctively in dangerous situations. Data from this study also reinforced previous research data regarding the mandatory need for analytic thought processes in investigative decision-making (Fahsing & Ask, 2013; Rassin, 2016; Rossmo, 2016). According to Rassin (2016) and Rossmo (2016) prosecutorial and judicial processes rely upon analytically-based criminal investigations. Participants within this study expressed this concept for analytic thought process need, as well as additional reasons, why there is a mandatory requirement for analytic thought processes in investigative decision-making.

Previous researchers identified the fallibility of intuitive thought processes and the dual use of thought processes in decision-making (Kahneman, 2011; Pennycock et al., 2015; Rassin, 2016; Wright, 2013). Intuitive thought processes are not fact- nor evidence-based and therefore are subject to cognitive error because of the influences of heuristics, bias, illusions, and internal beliefs (Kahneman, 2011). Participants within this study expressed their awareness of intuitive thought processes fallibility. It is for this reason that many participants expressed the need for collaboration of both thought processes during investigative decision-making. Participants expressed the use of analytic thought processes to verify inferential intuitive thought processes. These

findings supported the arguments of dual-interventionist theory (see Kahneman, 2011). Participants also exhibited independent use of both thought processes throughout their investigative stories wherein investigations resulted in the collaboration of decisional thought processes. Participants within this study reaffirmed previous research findings with the acknowledgement of inferential intuitive fallibility and by exhibiting dual thought process use in investigative decision-making.

Data from this study added to existing literature on investigative decisional thought processes with the inclusion of Theme 7 Analytic – Purpose. Participants provided an abundance of data on the multiple purposes for their use and reliance on analytic thought processes in investigative decision-making. Participants' conceptualizations from this study expanded upon established contextualized factors identified in previous research (Alison et al., 2013; Calabretta et al., 2017; Elbanna & Fadol, 2016; Fahsing & Ask, 2013; Sahn & Weizacker, 2016; Wright, 2013). A richer understanding of the reasons police detectives use and rely upon analytic thought processes during criminal investigations may prove useful in future decisional thought process research.

The goal of this qualitative research study was to explore conceptualizations of inferential intuitive and analytic decisional thought processes that United States police detectives used and relied upon during investigations in which they partook. This goal was accomplished as multiple thematic conceptualizations regarding these investigative thought processes emerged through participant interviews. There are many hopes for this study. I hope that the results of this study improve investigative training and education

for detectives and new recruits. Enhanced education and training based on a better understanding of these thought processes might improve investigative decision-making. I hope that the data and findings from this study promote additional research into investigative decisional thought processes, as so much is left to be researched. My final hope is that the findings from this study promote positive social change by establishing enhanced investigative training that result in more effective and accurate criminal investigations.

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Appendix A: Consent Form

CONSENT FORM

You are invited to take part in a research study about decisional thought processes of detectives during criminal investigations. The researcher is inviting police detectives, working or retired, who have completed at least one criminal investigation, to be in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Melissa Roy who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to explore detectives’ perspectives of investigative decisional thought processes.

Procedures:

If you agree to be in this study, you will be asked to meet with the researcher in a face-to-face audio recorded interview for approximately 60 minutes. Follow up phone interviews may be needed after the interview process to clarify information for the researcher and will take no longer than 30 minutes.

Here are some sample questions:

1. In regard to a criminal investigation you completed, would you walk me through the steps of the investigative process, beginning to end, and in as much detail as you feel comfortable disclosing without giving specifics regarding the suspect and location of the crime or outcome of the investigation?
2. When you were first assigned the investigation, what were you told about the crime?
3. When you first went to the crime scene, what were your initial thoughts?
4. During this investigation could you give me examples of the decisions you made that did not require analytic thought?
5. What factors do you feel led you to rely on analytic-based thought processes?

Voluntary Nature of the Study:

This study is voluntary. You are free to accept or turn down the invitation. No one within your law enforcement agency will treat you differently if you decide not to be in the

study. If you decide to be in the study now, you can still change your mind later. You may stop at any time. The researcher will follow up with all volunteers to let them know whether or not they were selected for the study.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life while revisiting the criminal investigation, such as emotional stress and fatigue. Being in this study would not pose risk to your safety or wellbeing.

The study seeks to benefit law enforcement organizations in enhancing training protocols and procedures for police detectives.

Payment

A small thank you gift card (\$10.00) will be provided to all volunteers in recognition for your time and effort. The gift card will be presented at the conclusion of the interview or when the volunteer decides to discontinue participation.

Privacy:

Reports coming out of this study will not share the identities of individual participants. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Data will be kept electronically secure via multiple password protection procedures wherein only the researcher will have access to the passwords. Names will be coded on all reports and the name-code ledger securely stored electronically with only the researcher having access. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone or text at 619-456-7771 or email melissa.roy@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is **12-27-18-0501007** and it expires on **December 26, 2019**.

The researcher will give you a copy of this form to keep.

Obtaining Your Consent

If you feel you understand the study well enough to make a decision about it, please indicate your consent by signing below.

Printed Name of Participant

Date of consent

Participant's Signature

Researcher's Signature

Appendix B: Identity Statement

My personal experience with law enforcement is two-fold. Through family experiences I have established viewpoints from the perspective of both the accuser and the accused. I believe these experiences have provided me with a comprehensive perspective which enables me to process this type of research with minimal bias. I have close relatives (immediate and extended) who are or have been police officers and detectives. I respect their career choices and am very proud of the sacrifices these family members (and their families) have made to protect society. I do believe that laws are important and necessary for societal safety. I am aware their law enforcement stories are valid but originate from their singular perspectives. I also have close relatives who have experienced law enforcement as the accused. Again, I believe the stories of their experiences are valid, however, I take into account these stories are based on singular perspectives. While I believe in the necessity of laws for societal safety, I also believe there are abuses and errors in law enforcement that need to be researched, addressed, and corrected.

Through my comprehensive experiences in relation to law enforcement, I have evolved into an individual who not only questions every perspective but also absorbs every perspective. I have the ability to understand and empathize with multiple viewpoints of the same story. I firmly believe that every standpoint is valid and that collaborative truth is found after analysis of all perspectives.

Appendix C: Interview questions

How many years have you been a police detective?

How many investigations would you say you have completed (approximate)?

Have you worked in other police departments outside of the one you are currently employed? If yes, were these departments in large or small geographical areas?

What type of crime occurred in the investigation you are planning to discuss in this interview?

In regard to a criminal investigation you completed, would you walk me through the steps of the investigative process, beginning to end, and in as much detail as you feel comfortable disclosing without giving specifics regarding the suspect and location of the crime or outcome of the investigation?

When you were first assigned the investigation, what were you told about the crime?

When you first went to the crime scene, what were your initial thoughts?

During this investigation could you give me examples of the decisions you made that did not require analytic thought?

During this investigation could you give me examples of the decisions you made with analytic thought?

What factors do you feel led you to rely on expert-based intuitive thought processes?

What factors do you feel led you to rely on analytic-based thought processes?

Do you remember any decisions made by expert intuition that you changed as time and information were presented?

Do you remember any decisions made by expert intuition that were affirmed by subsequent facts?

POSSIBLE FOLLOW UP QUESTIONS:

Do you endorse expert intuition in any investigative decision making? If so, how and in what capacity? If not, please explain why?

Do you ever feel pressured to rely on one thought process over the other? If so, please explain?

Appendix D: Participation flyer



Participation Makes A Difference

Research participation needed by police detectives on decisional thought processes. Research doctoral student needs your assistance to partake in a private one-on-one interview to complete her doctoral degree. If you are

- A current or retired police detective
- English speaking
- Have completed at least one criminal investigation

PLEASE contact me to discuss participation

Melissa Roy
melissa.roy@waldenu.edu
619-456-7771

Appendix E: Letter of cooperation

Dear Ms. Roy,

Based on my review of your research proposal, I hereby grant you permission to conduct the study entitled Inferential Intuitive and Analytic Thought Processes in Criminal Investigative Decision Making within the XXXXXXXX Police Department. As part of this study, I authorize you to collect data from officers and police detectives who have completed criminal investigations. I further authorize you to speak with police officers and detectives to ask them if they are willing to participate in the research study and if they are, to allow you to complete verbal interviews. You are also authorized to disseminate the research findings in the form of your dissertation upon its approval by your Dissertation Committee. It is understood that the individual officers and/or detectives' participation will be voluntary and at their own discretion. The XXXXXXXX Police Department reserves the right to withdraw from the study at any time if our circumstances change.

We understand that the XXXXXXXX Department's responsibilities may include providing a room or space where the research may be completed for the time that it takes to conduct the interview. I confirm that I am authorized to approve research in this setting. I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Sergeant
XXXXXXX Police Department