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Intuitive Decision-Making: Engagement, Agency, and Leverage

Roger E. Callese
Governors State University

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Intuitive Decision-Making: Engagement, Agency, and Leverage

Roger E. Callese

Submitted in Partial Fulfillment of the Requirements
for the Degree of
Doctorate of Education, Ed.D.

Interdisciplinary Leadership, Public Safety Concentration
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This project is dedicated to my wife, Bobbie, and son, Tyler; they have been the foundations of any success I have achieved and all of the joy I have experienced in my life. I love you both more than words can say. Thank you.

A special thank you to my committee chair, Dr. Brian Vivona, for all of his patience, support, and guidance throughout, and particularly in the completion of this project. Thank you.

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Abstract

This project explored law enforcement decision-making through the review of decision-making literature, consideration of the Critical Decision Model (CDM), and semi-structured interviews with law enforcement officers. In 2016, the Police Executive Research Forum (PERF) recommended the adoption and use of the CDM by law enforcement officers as a new way to approach tactical decisions. A review of the CDM suggests a linear, rational, weighing of options by officers. While this may be an excellent tool for slowly developing situations, for pre-mortems, or for debriefing, the CDM step four (identify options and determine best course of action) and step five (act, review, and reassess) create a gap in the understanding of the model use as they are not supported by the literature in describing how experts actually make decisions specifically, under tense, uncertain, and rapidly evolving circumstances. This project led to the framework of a new training intervention to address this gap in model use; the Intuitive Decision-Making: Engagement, Agency, and Leverage (ID:EAL) Model. The ID:EAL Model training intervention could provide law enforcement officers with a foundational understanding of decision-making and empower them with the knowledge to make, understand, and improve decisions under the inchoate, emergent situations they encounter. Additionally, this project identified the CDM as a tool for critical reflection that supports the ID:EAL Model development as a training intervention and further exploits training and experience in moving an officer toward the goal of improved decision-making.

Keywords: intuition, law enforcement, decision-making
Introduction

On March 4, 2015, the U.S. Department of Justice (DOJ) published the findings of their investigations into a recent officer-involved shooting of an unarmed citizen and the law enforcement practices of the Ferguson (MO) Police Department (FPD). The local community and national response to the officer-involved shooting rapidly evolved into a police crisis; a crisis that demanded accountability, competence, and changes in response to the concerns of stakeholders that culminated with a DOJ investigation into the Department. The DOJ concluded that the officer involved in the shooting lacked criminal intent and would not be prosecuted (DOJa, n.d.).

However, when the DOJ published the results of their investigation into the law enforcement practices of the FPD, they concluded that the FPD had engaged in a “pattern or practice of unlawful conduct that... systematically violated the First, Fourth and Fourteenth Amendments [of the citizens and others within the jurisdiction of the FPD]...and that its practices both reflect and exacerbate existing race bias” (DOJb, n.d., no p. #).

The dual DOJ investigations are a revealing and relevant example of how an officer employed by an agency engaged in unlawful practices can lawfully act as an autonomous decision-maker. In other words, the officer is an outlier in his or her discretion to act lawfully and is not subjugated by the culture or unlawful practices of the agency in which they are employed. This case exemplifies the dichotomy of decision-making occurring within law enforcement agencies; the first being decisions made at the organizational level and the second being decisions made at the level of the individual officer. This dichotomy between the decisions made by individual officers and the decisions made by agency administrators, whether lawful or unlawful, provides one impetus to further explore the decision-making process of
individual law enforcement officers; specifically, those decisions made under inchoate and emergent situations.

If a function of the officer’s role in our community is to act as an autonomous, accountable, decision-maker empowered with discretion to enforce the law, two clear questions arise: How are officers trained to make decisions? And, how do officers make decisions? DeLone (2015) asserted “you cannot adequately evaluate police performance if you do not first examine what it is police say they are doing” (p. 221). This project used semi-structured interviews of law enforcement officers to gain insight into their decision-making process and understanding.

**Background of the Problem**

In February of 2016, the Police Executive Research Forum (PERF) published a report entitled Use of Force: Taking Policing to a Higher Standard. The PERF report included the recommendation that law enforcement agencies adopt and train their officers in the use of the Critical Decision Making (CDM) model. Due to the conceivable international influence of PERF, this recommendation has the potential to impact the training and operations of law enforcement organizations around the world. This research project defined and conceptualized the CDM model’s use as a tool for critical reflection.

My interest in this project began with consideration of a number of publicized incidents involving law enforcement actions that caused physical harms and/or diminished public trust in law enforcement. These incidents sparked debate in our local and national communities, and frequently resulted in calls for individual, organizational, and societal change. This research project culminated in a training intervention model that leverages the antecedent cues, patterns, and understanding of the decision-making process of the law enforcement officer under tense,
uncertain, and rapidly evolving circumstances in which many of these encounters occurred; as well as the post incident feedback, reflection, and learning potential from these incidents.

**Purpose of Project**

The purpose of this project was to explore law enforcement decision-making through the review of decision-making literature, consideration of the Critical Decision Model (CDM), and semi-structured interviews with law enforcement officers. In 2016, the Police Executive Research Forum (PERF) recommended the adoption and use of the CDM by law enforcement officers as a new way to approach tactical decisions. A review of the CDM suggests a linear, rational, weighing of options by officers. While this may be an excellent tool for slowly developing situations, for pre-mortems, or for debriefing, CDM’s step four (identify options and determine best course of action) and step five (act, review, and reassess) create a gap in the understanding of the model use as they are not supported by the literature in describing how experts actually make decisions – specifically, under tense, uncertain, and rapidly evolving circumstances.

A further purpose to this project emerged with the development of the framework for a new training intervention to address this gap in model use; the Intuitive Decision-Making: Engagement, Agency, and Leverage (ID:EAL) Model. The ID:EAL Model training intervention could provide law enforcement officers with a foundational understanding of decision-making and empower them with the knowledge to make, understand, and improve decisions under the inchoate, emergent situations they encounter. It is the hope that the ID:EAL Model will lead to an improved understanding of officer decision-making and inform the development of training to effectively engage and leverage intuitive decision-making by law enforcement experts.
Lastly, this project aimed to identify uses for the CDM in the context of the law enforcement practitioner. This project identified one such use of the CDM, as a tool for critical reflection, that supports the ID:EAL Model development as a training intervention, and further exploits training and experience in moving an officer toward the goal of improved decision-making.

**Problem Statement**

Law enforcement has suffered from a paucity of understanding in the decision-making process. While there are many professions that must make sense of, and respond to, their realities under difficult circumstances, there is no domestic profession that must make decisions under the same tense, uncertain, and rapidly evolving circumstances in which law enforcement officers often find themselves. It is necessary and responsible to recognize our limitations in decision-making but it is just as important to the future of law enforcement training and practices to maximize officer potential to make reasoned judgments and defensible decisions in complex situations.

It is critical for the profession of law enforcement to be reflective, accountable, and proactive in instituting change. Being proactive does not encompass the prescribing of actions to resolve every potentiality, but it does involve endeavoring to understand and prepare for the emergent, inchoate situations that officers will predictably encounter. Acknowledgment of the limitations of human perception and decision-making does not absolve individuals, especially law enforcement officers, from their responsibility to act within the bounds of our cultural norms, values, and laws. It does serve the purpose of framing the discourse and further study the decision-making of law enforcement officers within the context of their duties.

There can be little doubt left in the minds of law enforcement professionals that the tide of
public sentiment and patience with the contemporary approach to police decision-making is waning. The news cycle is often replete with stories of biased, heavy-handed and/or deadly police encounters that expose fault in some aspect of officer tactics and/or decision-making. In some quarters of our country, the anger and frustration with prior judgment errors in police-citizen encounters is ever present.

The research on police decision-making and use of force “tends to focus on four general areas: the frequency of occurrence, race, policies, and police education” (McElvain & Kposowa, 2008, p. 506) and not on the critical element of the officer’s decision-making process. This project acknowledged as well as leveraged the findings of researchers who have argued that even with formal training, police officers develop behavioral patterns and other working rules that govern their reactions to similar situations (Rubinstein, 1973). If we understand that those patterns and working rules govern behavior, we can leverage these concepts, supported by research, into our training programs to influence behavior and decision-making.

**Identification of Stakeholders**

Stakeholders in this project include participants, law enforcement officers, trainers, and the community. The project may be used to develop decision-making training for law enforcement officers to improve their understanding of the decision-making process. The community may benefit from this project as officers endeavor to improve their decision-making in response to their needs.

**Research Question**

How do law enforcement officers describe their decision-making experiences under tense, uncertain, and rapidly evolving circumstances? From these descriptions, is there: a) usage of decision-making model(s); b) usage of intuitive decision-making; and c) preparedness and/or
training in decision-making?

Theoretical Frameworks

This study has been informed by three theories: a) theory-in-use (Argyris & Schön, 1974); b) adult learning theory (Knowles 1970); and c) reflection-in-action (Schön, 1987). Because the bounded rationality model seems to provide a means to assess several variables of this study, the model was considered but ultimately not selected. The bounded rationality model of decision-making contains four assumptions: 1) managers select the first alternative that is satisfactory; 2) managers recognize that their conception of the world is simple; 3) managers are comfortable making decisions without determining all the alternatives; and 4) managers make decisions by rules of thumb or heuristics (Simon, 1992). This model was not chosen primarily for two reasons. The first reason is its contention that there are “constraints that force a decision maker to be less than completely rational” (Nelson, Mathis, Daft, Bennett, & Lewis, 2006, p. 509). This assumption would not be consistent with the purpose of the study or with the suggested use of training as an intervention to improve decision-making. Secondly, the model’s assumption that one’s conception of the world is simple is contrary to the reality of inchoate, emergent circumstances faced by law enforcement officers.

Theory-in-use

A theory-in-use is defined as “a program for action designed to keep the values of certain variables constant within acceptable ranges” (Argyris & Schön, 1974, p. 22). The effectiveness of one’s theory-in-use depends on the following: the governing variables held within the theory; the appropriateness of the strategies advanced by the theory; and the accuracy and adequacy of the assumptions of the theory (p. 24). Lastly, testability is determined if “one can specify the situation, the desired result, and the action through which the result is to be achieved” (p. 25).
Argyris and Schön used the data from case studies to advance two models of theory-in-use in 1974: model I theory-in-use (pp. 63-84) and model II theory-in-use (pp. 85-95).

The first model, Model I theory-in-use, was developed from case studies’ data and found that practitioners used four variables in an effort to satisfice. These variables were: a) define goals and try to achieve them; b) maximize winning and minimize losing; c) minimize generating or expressing negative feelings; and d) be rational (Argyris & Schön, 1974, pp. 66-67). Model I identified four action strategies used by these practitioners: a) design and manage environment unilaterally; b) own and control task; c) unilaterally protect self; d) unilaterally protect others (pp. 68-71). Each action strategy, intended to keep the corresponding governing variable within acceptable range, resulted in “consequences for the behavioral world” that were interpreted as defensive and limited the freedom of choice (p. 72). These findings affect learning behavior by encouraging “single-loop rather than double-loop learning” (p. 79). The authors summarized the findings of the model I theory-in-use by stating:

Model I leads to a kind of hybrid world – a pre-civilized, competitive, hostile, defensive, win/lose world onto which the supposedly civilizing safety valves of repression, containment, and deviousness have been grafted. Such a behavioral world maintains its tenuous equilibrium through Machiavellian safety valves (p. 81).

The second model, model II theory-in-use, was also formulated from case studies’ data and proposed to be “free of the dysfuntionalities of model I (Argyris & Schön, 1974, p. 85). Model II contained only three variables that the authors described as “highly valued by people in all segments and levels of our society” (p. 85). Those variables were: a) maximize valid information; b) maximize free and informed choice; and c) maximize internal commitment to decisions made (pp. 88-89). Model II identified three action strategies used by these
practitioners: a) make designing and managing environment bilateral task; b) make protection of self and other a joint operation; and c) speak in directly observable categories (pp. 89-90). The authors found that model II consequences for the behavioral world would support group norms that would be less defensive and encourage double-loop learning. They concluded that: others will tend to see them as minimally defensive and open to learning, as facilitators, collaborators, and people who hold their theories-in-use firmly (because they are internally committed to them) but are equally committed to having them confronted and tested (p. 91).

**Adult Learning Theory**

Knowles (1970) premised adult learning theory on four assumptions. These assumptions are that, as a person matures:

1) his [or her] self-concept moves from being a directed to a self-directed human being; 2) he [or she] accumulates a growing reservoir of experience that becomes an increasing source for learning; 3) his [or her] readiness to learn becomes oriented increasingly to developmental tasks of his [or her] social roles, and 4) his [or her] time perspective changes form one of postpones application of knowledge to immediacy of application, and accordingly his [or her] orientation toward learning shift from one of subject centeredness to one of problem centeredness (p. 39).

Andragogy is defined as “the art and science of helping adults learn, in contrast to pedagogy as the art and science of teaching children” (Knowles, 1980, p. 43). The andragogical approach has been adopted in a number of disciplines, including criminal justice (Birzer, 2004).

Birzer (2003) argued that the andragogical approach allows for learner-centered instruction designed to improve the competencies and traits necessary for criminal justice professionals. It also promotes the use of relevant learning experiences and encourages officers to utilize their
experience in problem solving (Birzer, 2003). Chan (2010) concluded that adult learners "need to be involved actively in the learning process to construct their own knowledge, to make sense of the learning, and to apply what is learned" (p. 33).

**Reflection-in-action.**

Schön (1987) suggested that the theory of reflection-in-action, specifically its idea of reflective practice, offers an "an alternative to the traditional epistemology of practice...and leads us to recognize the scope of technical expertise is limited by situations of uncertainty, instability, uniqueness, and conflict" (p. 345). Schön (1987) spoke to the general subject of this study – practitioners experience making decisions under uncertainty – when he stated:

If we focus on the kinds of reflection-in-action through which practitioners sometimes make new sense of uncertain, unique, or conflicted situations of practice, then we will assume neither that existing professional knowledge fits every case nor that every problem has a right answer (p. 39).

This research project explored decision-making under uncertainty by law enforcement officers through their critical reflection of training and experience making decisions.

Argyris and Schön (1974) defined a practice as “a sequence of actions undertaken by a person to serve others, who are considered clients” (p. 6). This study explores the decision-making of law enforcement officers (people who serve others) under inchoate and emergent situations that involve other officers and citizens (clients).

In the context of the officer’s descriptions of how they make decisions in inchoate, and emergent circumstances, the theory of reflection-in-action provides the framework to assess: (1) the congruence (internal consistency or internal inconsistency) between espoused theory and theory-in-use; (2) the effectiveness of the theory-in-use; and (3) the testability of theories-in-
action used (Argyris & Schön, 1974, pp. 20-25).

Argyris and Schön (1974, p. 23 defined congruence as “one’s espoused theory matches his theory-in-use” (p. 23) – internal consistency. In the framework of this study, congruence means that an officer’s espoused theory (internal - prior to action) matches his or her theory-in-use (observable - action) and conflict between the two can be an impetus for change. The authors cautioned that congruence itself is not a virtue and that: “an espoused theory that is congruent with an otherwise inadequate theory-in-use is less valuable than an adequate theory that is incongruent with the inadequate theory-in-use, because then the incongruence can be discovered and provide a stimulus for change” (p. 23).

Summary

Decisions made by law enforcement officers are inherently imperfect and this imperfection may be amplified when errors are made in decision-making under tense, uncertain, and rapidly evolving circumstances. With experience and training, law enforcement officers develop behavioral patterns and other working rules that govern their reactions to similar situations (Rubinstein, 1973). This research project leveraged this concept by exploring law enforcement decision-making through the review of decision-making literature, consideration of the CDM, and semi-structured interviews with law enforcement officers. My hope is that we can exploit PERF’s advancement of the CDM as an impetus for change and further study of law enforcement decision-making.
Literature Review

The Supreme Court of the United States (SCOTUS) has found that the use of force by law enforcement officers is constitutional when it is “objectively reasonable” (Graham v. Connor, 1989) and acknowledged that the “calculus of reasonableness must embody allowance for the fact that police officers are often forced to make split-second judgments - in circumstances that are tense, uncertain, and rapidly evolving – about the amount of force that is necessary in a particular situation” (Graham v. Connor, 1989).

Studies on police shooting policies have led researchers to conclude that it is in the best interest of police administrators to move toward more conservative use of force policies (Boutwell, 1982; Chapman, 1982; Fyfe, 1982a, 1982b; Geller, 1982; Geller & Karales, 1981, 1982; Lingren, 1981; Reiss, 1980; Sherman, 1982) and the Police Executive Research forum “has called for greater restraint from officers and slower, better decision making” (Apuzzo, 2015, August 1).

In February of 2016, the Police Executive Research Forum (PERF) published a report entitled Use of Force: Taking Policing to a Higher Standard. The PERF report included the recommendation that law enforcement agencies adopt and train their officers in the use of the Critical Decision Making (CDM) model. It is critical for the profession of law enforcement to be reflective, accountable, and proactive in instituting change. While being proactive does not encompass the prescribing of actions to resolve every potentiality, it does involve endeavoring to understand and prepare for the emergent, inchoate situations that officers will predictably encounter. Purposes of this project include framing the discourse in critical decision-making model use and decision-making of law enforcement officers within the context of their duties.

Part of being proactive is the research, development, and application of training. Training
is not only a critical element in communicating expectations and change; it is also a legal responsibility of the police agency. In *Canton v Harris* (1989), the SCOTUS ruled that a city might be liable if one of its officers injures a person due to lack of training or failure to train adequately. The legal standard for this lack of training or failure to train is deliberate indifference to the constitutional rights of the citizen with whom the police come into contact.

**Organizational Change**

Leaders in law enforcement organizations must recognize the need for change in response to the needs of groups and actors both inside and outside of the agency (Simon, 1947; Katz & Kahn, 1966). The need for change is often “driven by events or activities taking place in a broader societal context” (DeLone, 2015, p. 218) and law enforcement leaders often fail to direct appropriate actions in response (Fyfe, 1996). If the law enforcement agency is to meet its obligations, and the expectations of stakeholders, leaders within the organization must communicate the connection between organizational mission and organizational performance (Weis, 1996; Weis & Piderit, 1999) and clearly define the purpose of change to move the organization in the chosen direction (Andrews, 1971).

Crises in policing also lead to change (Greenwood, Suddaby, & Hinnings, 2002; Walker & Katz, 2005) and act as watershed events that tend to incentivize, rather than impede, this change (DeLone, 2015). Greenwood, Suddaby, and Hinnings (2002) coined the term “precipitating jolts” (p. 60) to describe events in society that force organizations, such as police agencies, into crisis mode and lead them to change. Absent the broader societal context, law enforcement organizations may be slow to respond and be labeled as being “bureaucratically stagnant” (Delone, 2015, p. 221). Bureaucratic stagnation serves the police organization with the advantage of consistency in process and procedures (DeLone, 2015; Maquire, 2002; Metcalfe,
2001; Riley, 1999; Rohe, Adams, and Arcury, 2001; Skolnick & Bayley, 1999; Walsh & Vito, 2000). But “change [is] an inevitable feature of organizational life” (Cummings & Worley, 1999, p.52) and responsiveness to the shifting needs of the community is a cornerstone of professional accountability (Romzek & Dubnick, 1987).

**Decision-Making**

“Police agencies, like all government organizations and private entities, are not immune to the necessity of effective decision making” (Swanson, Territo, & Taylor, 2004, p. 653). While it has been argued that empirical research on the police use of deadly force has been rather limited (McElvain & Kposowa, 2008), there is no shortage of studies examining the result of police decisions made under inchoate and emergent situations, specifically in regard to deadly force policies and the use of deadly force (Aamodt, 2004; Alpert & Dunham, 1999; Boutwell, 1982; Chapman, 1982; Fyfe, 1982a, 1982b; Garner & Maxwell, 1999; Geller, 1982; Geller & Karales, 1981, 1982; Greenfield, Holmes, 2000; Henriquez, 1999; Langan, & Smith, 1999; McElvain & Kposowa, 2004; Langan, Greenfield, Smith, Durose, & Levin, 2001; Lindgren, 1981; Paoline & Terrill, 2007; Reiss, 1980; Scrivner, 1994; Sherman, 1982; Smith, 2003; Son, Davis, & Rome, 1998; Weitzer, 1999) but there is a gap in the research and a paucity of understanding of the decision-making process of individual law enforcement officers facing these circumstances.

**Officer Discretion**

The chief of police is “ultimately responsible for the discipline and control of all subordinate personnel” (More, Wegener, & Miller, 2003, p. 365) but they are often unaware of best practices or what their officers are actually being taught, specifically in the context of use of force training (Appuzzo, 2015, August 1). Fyfe (1999, as cited in LaFrance and Allen, 2010) found that law enforcement administrators have been very successful when they have “taken the
lead in formulation and enforcement of policy to define and limit line officer's discretion" (p. 199). But the DOJ findings cited in the investigation of the FPD and its officer involved in the shooting are contradictory, and demonstrate an unexpected disconnect that allowed the officer to act with lawful discretion while being accountable to administrators who where incapable of formulating and enforcing lawful policies and practices. In other words, the ability for the officer to act autonomously, in spite of the espoused need for his discretion to be defined and limited by administrators who fostered unlawful practices within their agency, resulted in lawful law enforcement actions being taken by the officer.

Review of the Critical Decision Model

In 2016, the PERF recommended that the CDM (Figure 1.0), adapted from the United Kingdom National Decision Model (Figure 2.0) for adoption and use by law enforcement officers. One way to view the CDM is as a cyclical pattern - centered on ethics, values, proportionality, and sanctity of life – with the following steps:

1. Collect information
2. Assess situation, threats, and risks
3. Consider police powers and agency policy
4. Identify options and determine best course of action
5. Act, review and re-access

The UK National Decision Model differs only minimally from the CDM but does include the following caveat:

In a fast-moving incident, the police service recognizes that it may not always be possible to segregate thinking or response according to each phase of the model. In such cases, the main priority of decision makers is to keep in mind their overarching mission to act with integrity to protect and serve the public (UK National Decision Model, n.d.).
Consistent with the caveat of the UK National Decision Model, the literature supports the assertion that in tense, uncertain, and rapidly evolving circumstances, the officer is indeed unable to segregate thinking or respond to each phase of the UK National Decision Model or the suggested CDM. This caveat - not duplicated in the CDM adopted by PERF - provided one impetus for further examination of the model and its practical application to law enforcement officers.

Ethics, values, proportionality, and sanctity of life are at the center of the Critical Decision-Making Model and are vital aspects of much decision-making in law enforcement. It is important to remember that not all critical incidents involve persons in crisis or occur in tense, uncertain, or rapidly evolving circumstances. Many critical incidents may even be mundane to experienced officers and result from natural disasters, accidents, etc. and may only be critical in their potential or continuing risks.

The CDM may be construed as a continuous, clockwise, cycle; with no reversal or allowance for the uncertainty inherent in inchoate and emergent situations. While this could be partially remedied with the superficial addition of two-way arrows – allowing for reversal to revisit the collection of information for example – it does not remedy the lack of understanding in how officers actually make decisions in these situations.

The first step in the model is to collect information. Officers responding and making decisions in critical situations may have limited information. These officers could be informed about the critical situation by dispatch, witnesses, victims, offenders, observation, prior experience, and/or other officers. Depending on the circumstances, an officer may take time to research aspects of the situation – such as criminal histories of suspects, check for warrants, past contacts with the police, history of mental illness, etc. – and develop a more complete
understanding.

The second step in the model is to assess the situation, threats, and risks. Again the officer may be limited in his or her assessment by information gathered in the dispatch, from witnesses, victims, offenders, observation, past experience, and/or other officers. The officer will rely on past experiences, awareness of known risks, and unknown threats and risks.

The third step in the model asks the officer to consider police powers and agency policy. This step assumes that the central tenets of the model—ethics, values, proportionality, and sanctity of life—have been incorporated into department policy. It also assumes that the foundation of legitimacy and authority have been established by the officers and agency.

The fourth step is to identify options and determine the best course of action. This step is not supported by the literature for decision-making under tense, uncertain, and rapidly evolving circumstances.

Lastly, the fifth step is to act, review, and re-assess. Once again, this step is not supported by the literature for decision-making under tense, uncertain, and rapidly evolving circumstances. This step would ideally require only that the officer act. Asking an officer to act, review, and re-assess in one step ignores the whole premise of the model. One interpretation of the model as presented is that the fifth step potentially places the officer in a continuous loop to act—review—reassess—act—review—reassess—and on and on (conceptualization Figure 3.0).

**Intuition Defined**

Research in decision-making is concerned with “how to improve decision quality by identifying situational factors and associated psychological processes that reduce decision quality” (Fischer, Fischer, Weisweiler, & Frey, 2010, p. 871). As a facet of decision-making, Simon (1992) described intuition in this way: “the situation has provided a cue; this cue has
given the expert access to information stored in memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition.” (p. 155). Klein explained intuition as the manner in which we translate our lived experiences into judgments, if we see something recognizable from our past, we refer to that experience and reference how we acted or responded. The explanation is similar to Schön’s (1983) reflection-in-action, how the results of past actions play a role in how we interpret and respond to new situations and problems.

Intuitive Decision-Making

In many professions, including firefighting, law enforcement, the military, and medicine, decision-makers must draw upon, trust, and exert intuitive processes to address and resolve emergent situations (Klein, 2013). Whether or not professionals have the opportunity to develop intuitive expertise depends on the quality and speed of feedback, as well as on adequate opportunity to practice (Kahneman, 2011, p. 241).

These intuitive decisions are more than gut feelings or instincts; there are physiological responses and thought processes that facilitate the rapid recognition of the appropriate and best response by the decision-maker (Mayer, 2011). There is evidence to support the assertion, that given the same circumstances faced by the decision-maker outside of the emergent conditions, with additional time to consider many different options, the initial, intuitive decision remained the best choice (Klein, 2013).

Intuitions “are fast and take into account nonconsciously generated information, gathered from experience, about the probabilistic structure of the cues and variables relevant to one’s judgments, decisions, and behavior” (Lieberman, 2000, p. 110). Liberman (2000) cited a number of studies that found “the lack of conscious awareness of the information contributing to
one’s intuitive judgment makes it impossible to delineate in reflection, or for others in discourse, the justification for one’s judgment” (p. 110).

**Pattern Recognition**

Klein (1999) concluded, “intuition depends on the use of experience to recognize key patterns that indicate the dynamics of the situation” (p. 31). In 2003, Klein related that the more patterns and action scripts we develop through experience, the more expertise we develop and the easier it is to make decisions. Klein (2013) conducted naturalistic studies of intuitive decision-making in natural settings – such as rapid decisions made by firefighters – and developed what he termed the recognition-primed decision strategy. This recognition-primed decision strategy explained how individuals:

Made rapid decisions by recognizing how the situations they encountered fit the patterns they had learned. The pattern-matching part of their decisions was fast and automatic. It was how they used their intuition to quickly identify an option that was likely to succeed. Then they evaluated their intuitions, not by comparing the option they recognized with others, but by consciously and deliberately imagining how it would fare if they carried it out. (p. 26)

Klein’s (2013) studies have been replicated with other specialties, such as military commanders and oilrig managers. Of significance was the revelation from Klein (2013) that decision researchers had not considered expertise in the past because “their laboratory work on decision-making typically studied novices trying to perform unfamiliar tasks” (p. 26). Klein (2013) later distinguished intuition; the use of patterns already learned, from insight; the discovery of new patterns. Recognition-primed decision strategy requires the accumulation of hundreds and thousands of patterns (Klein, 2013).

**Temporal Pattern Completion**

Temporal pattern completion is tantamount to prediction of later sequence elements and “sequential representations only form if predictor cues really predict rewards, these
representations are structurally designed to lead to intuitions that are accurate" ((Lieberman, 2000, p. 114). Temporal associations:

Guide one through a set of sequential operations, whereas in the other case, the presence of early cues activates later cues that bring them to mind as intuitions. The fact that the temporal pattern completion is automatic will leave individuals unable to recognize explicitly that the early cues are guiding their intuitions. (Lieberman, 2000, p. 118; see also Bargh, 1989)

These learning sequences and probabilistic relationships are developed in the basal ganglia and are not accessible to consciousness (Rauch et al., 1995).

**Unconscious Thought Theory (UTT)**

Dijksterhuis, Bos, Nordgren, and van Baaren (2006) formulated the unconscious thought theory (UTT). Unconscious thought theory asserts that:

Because its low capacity, conscious thought leads to progressively worse choices with more complex issues. Unconscious thought...the quality of choice does not deteriorate with increased complexity, allowing unconscious thought to lead to better choices than conscious thought under complex circumstances. (Dijksterhuis, Bos, Nordgren, & van Baaren, 2006, p. 1006)

This theory asserted that unconscious thought is superior to conscious thought because it does not suffer from low capacity and is not bound by rules and does not need to be precise.

**Systems of Thought**

Thaler and Sunstein (2009) described our thought process as being composed of two separate, but complimentary systems; the automatic system and the reflective system. The authors described the automatic system as intuitive and automatic and the reflective system as reflective and rational. Strack and Deutsch (2004) referred to these dual process models as a reflective (deliberative) system and impulsive (automatic) system. “In terms of measures, while explicit measures tap into the deliberative system or propositional processes, implicit measures
tap into the impulsive system or associative processes (Richetin, Perugini, Adjali, & Hurling, 2007, p. 530).

System 1 provides rapid, automatic responses that enter consciousness only in their final form; while System 2, acting as a parallel system, is slower, sequential, and enables conscious hypothetical, abstract thinking (Ha, Haury, & Nehm, 2012). “Common to all these models of reasoning is the idea that one of these systems (System 2) is more effortful and rule based, whereas the other (System 1) is relatively effortless and relies on quick associations and heuristics” (Masicampo & Baumeister, 2008, p. 256). Gigerenzer and Goldstein (1996) characterized the processes of System 1 as providing a fast and frugal substitute for the expensive thinking of System 2. Reyna and Ellis (2004) suggested that there is evidence that the role of intuitive, heuristic strategies of System 1 is to usurp the effortful, analytical processes of System 2 over time, so that comparable benefits can be achieved with much less effort.

System 1 decisions are the default, System 2 processes may override System 1 processes when their conclusions are undesirable. According to this view, a lock of System 2 resources should not affect heuristic processing when heuristics produce perfectly sound conclusions, which some models of decision-making suggests they generally do. (Masicampo & Baumeister, 2008, p. 259)

Rehder (2003) studied these processes under the causal-model theory and found that there is a special importance of casual relations in people’s intuitive theories of the world. He stated that it is the “ability to represent causal regularities that enables an organism to successfully intervene in external events and attain control over its environment” (p. 1157; see also Sperber, Premack, & Premack, 1995)

Heuristics. Heuristics are shortcuts used by System 1 to develop intuitions (Taleb, 2007) and can be defined as a “simple procedure that helps find adequate, though often imperfect, answers to difficult questions” (Kahneman, 2011, p. 98). However, Kahneman (2011) cautioned
“the accurate intuitions of experts are better explained by the effects of prolonged practice than by heuristics” (p. 11). Based on the intuitive reasoning model developed by Tversky and Kahneman (1984), three forms of heuristics or subjective probability judgments can be associated with intuition; availability heuristics, representational heuristics and anchoring, and anchoring and adjustment heuristics (Cioffi & Markham, 1997).

Physiology and Intuition

“There are two components to understanding: having the knowledge that enables comprehension, and having the feeling of knowing” (Burton, 2008, p. 4). Ha, Haury, and Nehm (2012) described these components as:

One component – knowing – is the result of conscious thought processes, while the other component – the feeling of knowing – results from involuntary, unconscious processes, intuitive cognitions, produced by neural networks within the brain’s interface between incoming sensory data and the construction of a final perception. (p. 98)

The statement that someone has made a decision based on their gut feelings may have a “neurological basis related to brain-gut interactions and to interoceptive memories related to such interactions” (Mayer, 2011, p. 461). Mayer (2011) found evidence from neuroimaging studies in humans that the “fronto-insular cortical regions, in particular subregions of the Ains” (p. 461) are involved in the development of intuitive decision-making.

Allman, Watson, Tetriault, and Hakeem (2005) suggested that large spindle shaped bipolar neurons, called von Economo neurons (VENs) primarily located in the fronto-insular and anterior cingulate cortex in great apes and humans may be involved in such unique cognitive processes as the development of intuition. Allman et al. (2005) proposed, “VENs and related circuitry are involved in rapid intuition, which like perceptual recognition involves immediate effortless awareness rather than the engagement of deliberative processes” (p. 370).
There are an equal number of neurons, between 200 and 600 million neurons, in the spinal cord and the human gut (Furness, 2006). Mayer (2011) reviewed the “emerging role of integrated bidirectional signaling between the brain and the gut in homeostasis…” – the brain, referring to the autonomic nervous system (ANS) and the gut, referring to the enteric nervous system (ENS) – and the “possible consequences for higher-level executive functions and emotional states, with a primary focus on gut to brain signaling” (p.453). Damasio (1999) theorized that there are somatic markers that arise from positive and negative emotional states being associated with visceral and other bodily responses – which he termed body loops – to certain contextual situations. This theory stated, “these body loops, or their meta-representations in the orbitofrontal cortex, may play a part not only in how somebody feels at a given moment but may also influence future planning and intuitive decision-making” (p. 455).

### Learning and Teachability

Lieberman (2000) found that “if intuition and implicit learning are both largely dependent on the basal ganglia, then this would constitute strong evidence that intuition and implicit learning are related overlapping processes” (p. 123).

...intuition is a phenomenological and behavioral correlate of implicit learning, which has been established both through an inspection of the similarities between the two phenomena as well as through a review of neuropsychological, neuroimaging, neurophysiological, and neuroanatomical data suggesting that both intuition and implicit learning rely critically on the integrity of the basal ganglia. There is substantial evidence that there is a major division in social, cognitive and neural components of intuition between judgment and action. (Lieberman, 2000, p. 126)

Our educational institutions give scant attention to the development of intuitive understanding and intuition is not highly valued as a byproduct of education (Bruner, 1960). Seligman and Kahana (2009) found “that there are two old-fashioned ways of teaching intuition: through brute force experience and through verbal explanation” (p. 401). Through repeated
experience and many forced choice trials with feedback, ordinary people can be trained to very high accuracy (Myers, 2002). Seligman and Kahana (2009) argued that intuition is teachable “virtually and on a massive scale” (p. 401).

Research on implicit learning has suggested that our behavior can be rule-like and adaptive even without conscious insight into the nature of the rules we are using (Knowlton & Squire, 1996; Reber, 1993). The “similarity between intuition and implicit learning suggests that it may be fruitful to consider intuition as the subjective experience associated with the use of knowledge gained through implicit learning” (Lieberman, 2000, p. 109). Social intuition and implicit learning rely on the integrity of the basal ganglia, this property provides “insights into the type of training environments likely to yield accurate intuitions” (Lieberman, 2000, p. 127).

Summary

Law enforcement leadership must be responsive to the forces of change both inside and outside of their respective agencies (Simon, 1947; Katz & Kahn, 1966). The recommendation of PERF (2016) that police organizations adopt and train their officers in the CDM is one such change that should be considered. The literature reviewed for this project suggested that CDM’s step four (identify options and determine best course of action) and step five (act, review, and reassess) are not supported by the research and do not describe how officers actually make decisions in tense, uncertain, and rapidly evolving circumstances.
Methodology and Methods

This project initially proposed to conduct critical incident scenarios involving use-of-force decisions by law enforcement officers to observe their actions and as a foundation for discussion of their decision-making process. My employer was in the middle of an administrative change during this project and I felt it was not an opportune time to be conducting research in the workplace. A neighboring department originally agreed to allow its officers to participate, but while developing a proposal they became understandably apprehensive about any potential conflicts between the scenarios and their written use-of-force policies. In the end, my Committee Chair and I decided that interviewing experienced officers from different police agencies might be a more fruitful approach.

Action Research

The purpose of this project was to explore law enforcement decision-making through the review of decision-making literature, consideration of the Critical Decision Model (CDM), and semi-structured interviews with law enforcement officers. The decision-making literature and CDM were discussed in the literature review chapter of this project. To complete this inquiry, the action research method was chosen because it allows for a systematic inquiry by practitioners; the results of which are “not intended to be broadly applicable beyond the specific context or problem that is the focus of the study” (McMillan & Schumacher, 2010, p. 445).

The goal of action research is “to understand how things are happening, rather than merely on what is happening, and to understand the ways that stakeholders…perceive, interpret, and respond to events related to the issue investigated” (Stringer, 2014, p. 36). Action research may use qualitative methods but has an applied focus to address “a specific, practical issue and seeks to obtain solutions to a problem (Creswell, 2012, p. 577). Stringer (2014) specified that
action research emphasizes the "production of 'practice scripts' – plans, procedures, and models derived from the final stages of action research that describe the actions people will take or the behaviors in which they will engage" (p. 61).

Initial stages of exploration are not intended to gather "concrete evidence or objective data but to reveal the reality that makes up people's day-to-day experience, bringing their assumptions, views, and beliefs out in the open and making them available for discussion" (Stringer, 2015, p.102). Action research enhances decision-making, promotes reflection and self-assessment, and instills a commitment to continuous improvement (McMillan & Schumacher, 2010, p. 445). Action research may use qualitative methods, such as interviews to ask participants general, open ended questions (Creswell, 2012) and may be used to provide participants the opportunity to reflect and describe their experiences in their own terms (Stringer, 2015).

McMillan and Schumacher (2010) outlined four phases in the action research process: 1) selecting a focus, topic, or issue to study; 2) collecting data; 3) analyzing data; and 4) taking action based on the results (p. 446). The focus of this study was the decision-making of law enforcement officers in tense, uncertain, and rapidly evolving circumstances. Data collection was obtained through semi-structured interviews of police officers and coded for analysis. Lastly, consistent with Stringer’s (2014) emphasis of action research, this project advances a model for future actions that may be taken by practitioners.

Research Question

Consistent with Stringer’s (2014) theoretical foundations of action research and Creswell’s (2012) qualitative research characteristics, this study was commenced to address a broadly defined question: Is there a model and/or training intervention that can be developed with the
goal of improving law enforcement understanding of intuitive decision-making under tense, uncertain, and rapidly evolving circumstances? This project was guided by the following research question: How do law enforcement officers describe their decision-making experiences under tense, uncertain, and rapidly evolving circumstances? From these descriptions, is there: a) usage of decision-making model(s); b) usage of intuitive decision-making; and c) preparedness and/or training in decision-making?

**Research Participants**

Purposeful sampling allows for the selection of participants based on the location and personal experiences that can best help to understand the central phenomenon (Creswell, 2012). This purposeful sample included five law enforcement officers from three different municipal police departments who were identified as primary stakeholders in the stated purpose of this research (Stringer, 2014). I knew four research participants from professional relationships and one participant was referred to the study. Participants were solicited based on their employment and training (Table 1.0). Participants were law enforcement officers who were: a) employed as a law enforcement officer and b) during the period of their employment as a law enforcement officer, they had completed a firearms simulator program that utilized simulated police/citizen interactions.

**Research Setting**

Allowing participants to choose the location of the interview is intended to facilitate open discussions of personal experiences (Creswell, 2012). Before meeting, I asked participants to select a place they were comfortable being interviewed. Two participants were interviewed in public coffee shops, two were interviewed in their place of employment, and one participant was interviewed in his home.
Consent

This project received expedited approval from the Governors State University (GSU) Institutional Review Board (IRB), Protocol #17-01-03 (Appendix B). There were no foreseeable risks or discomforts for participants. A potential benefit of participation was a better understanding of the officer's decision-making processes from critical reflection on the topic of this study. Prior to each interview, participants were presented with a $10.00 gift card to a coffee retailer as a token of my appreciation. No outside funding was received for this study.

Each officer signed an informed consent form (Appendix C) indicating their willingness to participate in the study and also signed to indicate their agreement for their voice to be recorded during the interview. Participants were advised of their right to refuse questions or withdraw from the study at any time. They were also provided with contact information for the project director, the GSU IRB, and myself.

Method of Data Collection

Participants were asked to meet once at a location of their choosing to answer 15 semi-structured questions related to the topic of this study (Appendix D). Fifteen questions were prepared in advance to guide the discussion and were submitted for approval of the GSU IRB. Semi-structured questions often begin with general questions and may be followed with more specific questions (McMillan & Schumacher, 2010). During each interview, I was attentive to the participants' answer to see if the question was clear, not leading, and solicited an answer to the subject of the question. Some of these questions were changed slightly from the initial interview to better solicit participant reflection of their training and experiences. For example, it was found that one officer had attended PRISM simulator training rather than FATS simulator training so the question was changed to include “any police simulator training”. I continuously
reviewed questions and answers, and followed with questions to further investigate the officer's experiences. The semi-structured nature of the interview and iterative process of reflection resulted in specific and varied questions being asked of individual participants. Actual interviews lasted between approximately 20 and 90 minutes.

**Data Management**

Transcription has been described as the "process of converting audiotape recordings or fieldnotes into text data" (Creswell, 2012, p.239). A digital recorder was used for this project. Each participant was identified only by their initials and written notes and recordings were kept strictly confidential. Following each meeting, I transcribed the interview verbatim and then wiped the audio recording from the digital recording device, using best practices for overwriting the file, not simply deleting it. No personal identifying information was recorded or retained. The word file of the transcript is stored on a password protected, locked, and secured computer. Written notes, consent forms, and other products of this project will be stored in a locked filing cabinet within my office.

**Data Saturation**

Taylor-Powell and Renner (2003) suggested that "before beginning any analysis, consider the quality of the data and proceed accordingly" (no p. #). I began with preliminary, exploratory review of the interviews to gain a general sense of the organization of the data and to determine if additional data was required. Homogeneous sampling occurs when the researcher selects individuals for participation based on "membership in a subgroup that has defining characteristics (Creswell, 2012, p. 208). Likely due to this homogenous sampling, after review of the five interviews no new important information was being obtained. This finding has been
referred to as data saturation (McMillan & Schumacher, 2010) and I felt the data set would not benefit from additional interviews in the context of the approved project.

**Data Analysis**

Themes have been described as aggregated ideas found in analysis of the data (Creswell, 2012). To bring meaning to the information, Taylor-Powell and Renner (2003) suggested that themes and patterns be identified. The process of categorizing and coding finds meaning within the data and allows the experiences and perspectives of the participants to be summarized (Stringer, 2014).

Themes are aggregated ideas found in analysis of the data (Creswell, 2012). “All analysis is an act of interpretation, but the major aim is to identify information that clearly represents the perspective and experience of the stakeholding participants” (Stringer, 2014, p. 139). Consistent with Creswell’s description of hand analysis of qualitative data, the transcripts were read, marked by hand, and divided into themes with various colored highlighters. Through the iterative process of reading and rereading, lean coding (Creswell, 2012) identified nine broad themes (Table 2.0). The data was coded with these nine broad themes with memos in Microsoft Word. Constant comparison was used to continually search for “both supporting and contrary evidence of the category” (McMillan & Schumacher, 2010, p. 377). Following this process, three major themes, that included two minor themes each, were coded from the original nine broad themes (Table 3.0).

**Trustworthiness**

Each participant agreed to be contacted at the conclusion of data analysis for member checking of results. Member checking may be used to review the accuracy of results with participants (Creswell, 2012). Direct quotes and coding resulting from individual participant
statements was presented to four of the five officers to review to “verify that the research adequately represents their perspectives and experiences” (Stringer, 2014, p. 93). All four who reviewed the materials agreed with the representation and coding of their interviews. The fifth officer was not contacted due to logistical and time constraints.

Credibility of results can be improved through referential adequacy (Stringer, 2014). Referential adequacy can be defined as concepts and ideas within the study being clearly “drawn from and reflect the experiences and perspectives of participating stakeholders, rather than be interpreted according to schema emerging from a theoretical or professional body of knowledge” (Stringer, 2014, p. 93). The conceptual representations of the data were presented to the same four officers as in the member checking. All four officers found the concepts consistent with their related experiences and unique in their form.

Low-inference descriptors can be viewed as almost literal terms that are drawn from the data and can be understood by the participants (McMillan & Schumacher, 2010). Descriptions used in analysis should reflect the participant’s views rather than the language of the researcher (Stringer, 2014). The use of low-inference descriptors is one of “the hallmarks of qualitative research and the principal method for identifying patterns in the data” (McMillan & Schumacher, 2010, p. 331). Each term used in the coding of the data was used by at least one participant during their interview. The four officers who participated in member checking understood the terms used in the coding and did not raise any contradictory inferences.

A factor in assessing the rigor and trustworthiness of an action research project is the ability to confirm that it actually took place (Stringer, 2014). I have maintained notes documenting planning, meetings, and conceptual designs related to this project. These notes
include handwritten and word processing documents. I have maintained contact with my Committee Chair who continuously reviewed the progression and results of this project.

**Researcher Perspective**

This project is grounded in my experiences observing and making decisions as a practitioner in the armed forces and in law enforcement. I have been a law enforcement officer for over 20 years, of which I have been a supervisor for more than 14 years. I was a member of the military for over 16 years; serving as a member of the U.S. Army Reserve (as a combat engineer), and U.S. Navy and U.S. Naval Reserve (as an operations specialist). I have experienced decision-making under emergent and inchoate circumstances in my military and law enforcement careers.

Among many duty assignments and operations, I worked in support of, and in, combat operations in Operation Desert Shield, Operation Desert Storm, Operation Noble Eagle, and Operation Enduring Freedom. As a law enforcement patrol officer and supervisor, I have been present during rapidly evolving situations and managed the successful resolution of many emergent and inchoate circumstances. Inferences guiding aspects of this project were drawn from my experience and made with appreciation and understanding of the similarities, differences, and gestalt of military and civilian law enforcement organizations. This project was conducted from the perspective of a law enforcement practitioner and intended for the advancement and understanding of intuitive decision-making by law enforcement officers.

**Researcher Role**

As a law enforcement officer employed by a municipal agency in Illinois, my role in this study was as an insider-researcher. The term insider-researcher is generally used to define "those who choose to study a group to which they belong" (Unluer, 2012, p. 1). Stringer (2014)
has suggested that action research requires the researcher “to participate in the process, not as an expert who does research on people but as a resource person” (p. 20).

The use of interviews can be conceptualized as “a socially-situated encounter in which both interviewer and interviewee play active roles” (Roulston, 2011, p. 348). The selection of trustworthy data begins with an “awareness of the researcher’s assumptions, predispositions, and influence on the social situation (McMillan & Schumacher, 2010, p. 379). My insider-researcher role provided insight into the design of this project and the development of interview questions.

**Ethics**

As part of review of this project, documentation of Project Director and researcher completion of affiliated CITI training was submitted to the GSU IRB prior to approval of the protocol. Participants were informed of the purpose of the study and completed informed consent forms prior to interviews. All documents and work products related to this project will be kept secure.

**Summary**

The purpose of this project was to explore law enforcement decision-making through the review of decision-making literature, consideration of the Critical Decision Model (CDM), and semi-structured interviews with law enforcement officers. The decision-making literature and CDM were discussed in the literature review chapter of this project. To complete this inquiry, the action research method was chosen and semi-structured interviews with law enforcement officers were conducted.
Results

The purpose of this project was to explore law enforcement decision-making through the review of decision-making literature, consideration of the Critical Decision Model (CDM), and semi-structured interviews with law enforcement officers. The literature and CDM were explored in the literature review. The results of the semi-structured interview data are discussed here.

Participant Attributes

The five participants in this study were white and male, with professional experience greater than eight years. S.C. was a command level administrator of his department. P.H. was assigned to investigations as a detective. D.D., J.W., and T.K. were assigned to patrol. S.C., P.H., D.D., and T.K. were Field Training Officers (FTO) who had trained new officers within their departments. D.D. and J.W. were members of multi-jurisdictional special weapons and tactics teams. J.W. had combat experience as a member of the military.

All five participants confirmed their employment as law enforcement officers in Illinois and that each had previously attended a firearms simulator training course. Each stated that they are authorized and empowered by their agencies to make decisions as a function of their jobs and that this authority included use-of-force decisions. As none of the officers had received formal or informal training in the CDM, a copy of the CDM (Figure 1.0) was given to each participant for review and reference during the interview.

Importance of Decision-Making

The officers in this project viewed decision-making as their most important job function. Participants were asked to discuss the importance of decision-making in their duties as law enforcement officers. All five officers related that decision-making is the most important
function of their job. D.D. commented, “The most important thing of my job is making decisions.” T.K described the duties of decision-making as “paramount.” The reported importance of decision-making in their duties as law enforcement officers supported the relevance of this area of research.

Themes

Lean coding (Creswell, 2012) initially identified nine general themes from the interviews (Table 2.0). Overlap was found in the nine general themes so they were reviewed and reordered. The interviews focused on the decision-making experience of law enforcement officers, several of the responses shared common terms and ideas; I did my best to link their experiences to a representative theme. The final coding identified three major themes that included two sub-themes each (Table 3.0). The major theme of experience included the sub-themes of temporal limits and pattern recognition. The second major theme of training included the sub-themes of identifying option/actions and situation. The third major theme of critical reflection included the sub-themes of model use and intuitive decision-making.

Experience

Experience influences how officers make decisions. S.C. related a specific incident that captured how his decision-making has been influenced through experience.

Actually my third day of FTO we got called to a fireworks complaint. As we walked up to speak to the guy about lighting off fireworks, we realized he was holding a .45 in between his legs. Yeah, I remember that vividly...I mean I was basically; I was waiting on my FTO’s cues. My training officer’s cues before I acted...I wasn’t obviously going to fire my weapon until my training officer fired his weapon...I think I would have more control over my own actions now, rather than relying on a training officer for that reaction.

S.C. elaborated on his answer:

At this point in my career it would be intuitive. You would look for, as he started to grab it or raise it, as you learn through your experience, and through more training, you learn
there is a point of no return. Where, if that gun comes to a certain level, then use of force is going to be necessary. Otherwise his is going to fire before you do. As a young officer, a rookie officer, you wouldn’t necessarily know where that point is.

Each of the officers related that they rely heavily of experience in resolution of situations. For example, P.H. related:

I generally rely on experience. What I’ve seen in the past. What I’ve had work in the past...just kind of go from there. And if those don’t work, then I kind of have to problem solve a new solution. But, generally, it’s based on my experience – what I’ve seen.

Experience affects how law enforcement officers make decisions. Time is another factor and constraint on the officers decision-making process.

**Temporal Limits**

Law enforcement officers “are forced to make split-second judgments” (*Graham v Connor*, 1989). When faced with an inchoate situation, P.H. related, “I just intuitively make a decision. It’s normally not enough time to sit there and weigh out a bunch of different options.” When asked to share further insight into his decision-making, P.H. added:

I think its pretty heavily experienced based...so exposure to more ideas that you gain, the better. But, normally when I’m in a tense situation and I don’t have time to think, I’m just going with what I’ve done and what I’ve seen in the past.

D.D. related that the response and decision-making begins with the dispatch to the call.

Oh yeah. You’re already going. As you’re on your way to the objective, no matter what, whether it’s a domestic in progress in town as a patrol officer, or whether you’re getting a, you know, armed with a knife, officer down, hostage rescue... What am I going to do? How am I going to get there? What’s my fastest avenue of getting there?

T.K. described how he views the limited time to resolve situations.

There is always going to be that narrow scope of a critical incident where you don’t have time. And I think that’s the problem. In law enforcement, time can literally be life and death...where you might not have time. And that also goes with the rapidly evolving...it can go from, you know, from hours to minutes, from minutes to literally nanoseconds before you have to react.
As part of the experience of decision-making, officers must make decisions within temporal limits. With experience law enforcements officers develop the ability to recognize patterns in their environment and the behaviors of others.

Pattern Recognition

Officers use pattern recognition gained through experience to make intuitive decisions.

S.C. described his experience identifying local patterns.

You know, especially in a small town, you get to know the people and you get to know how they act. And you go to the same houses repeatedly. You notice if they are acting different. You start to use a little more caution or heighten your officer safety a little bit because they are not acting like they normally act.

D.D. related how his training and experience has influenced his approach to all scenes.

I park a block away...I look and check the entire neighborhood. Is anyone else, am I seeing people trying to flag me down? Pointing toward a house? Do I hear anything upon my approach? Do I smell anything upon my approach?

You will recognize the anomaly to that neighborhood based on the patterns of everything within that. What is different about this area than it would normally be and this normal time of day, is this normal? You pass these same spots and if you take the opportunity to roll the windows down just a bit, and keep scanning and looking at them, you’ll see how they normally act, I guess at their baseline rest, when there is nothing going on.

I read structures when I walk. So, when I walk I’m always kind of taking a quick glance up at the ceiling to see the quick readout of how the rooms are going to flow. Do I see that it is breaking off this way, and I can’t see, and there is already a common wall? I know where my deep corner is so before I walk into that room, I already know where my deep threat is and I have a flash site picture before I move off that spot.

Experience of decision-making within temporal limits may lead to the development of pattern recognition by the officer. Experience in decision-making may potentially be improved through training.

Training
Relating their experience with firearms simulation training, S.C. found that “situations rapidly change and...you have to pay attention to the different cues.” While P.H. stated, “I just reacted to what was in front of me.” J.W. described his experienced with firearms simulation training as being “like a video game...it’s two-dimensional so you can’t really tactically be where you want.” Relating training to the real world can be a challenge as noted by T.K.

You don’t want to have a here we go again scenario. Because this incident ended like...let’s say, man with a knife...this incident ended A, B, and C, exactly the same the last two times. You cannot go into the same call with that same ending ideology. Ok, so I’m going to do this, he’s going to do this, cause every outcome is going to be different. You can’t put a label on everything you do.

Outside of scenario training, situational decision-making understandably varies from scene to scene but it may also be influenced by assignment within a jurisdiction. S.C. discussed the challenge of training new officers.

Definitely it would take time to acclimate. I think every new environment you’re put in. Having worked for a big city department early in my career, the south side districts you had to look for stuff a lot different than the north side districts. And stuff on the east side was different than the west side.

Law enforcement officers develop the ability to recognize and ameliorate physical responses to critical incidents through training and experience. Officers described how their experiences making decisions and physical responses to stimuli had changed over time. Each related past visceral reactions when first experiencing tense, uncertain, and rapidly evolving circumstances. D.D. reflected:

My physical reaction was feeding into my actual response. So as I was getting that auditory exclusion start to come in, I could start to feel that tunnel vision coming in, I was also depressing my accelerator going faster. So, instead of going on a thirty mile an hour road, and just allowing the time to get there, or just going a little bit faster speed but not going lights and sirens, I was lights and sirens going sixty-five. Flying down that road going to the target faster than I was prepared to get there and faster than I needed to get there.

T.K. shared his experience.
Rapid respiration. Rapid breathing. I know I had that. I do remember that. And the fight would be over and it would take some time to calm down. I didn’t have the shakes but my respirations increased, that’s for sure.

The officers related their experiences with physical reactions in response to critical incidents, but they also conveyed a very distinctive ability to recognize and address similar reactions in other officers. This is a critical aspect of an officer’s preparedness to address critical incidents. The officer must recognize and ameliorate his instinctive responses, but to enhance his safety, and the safety of others, he learns through training and experience to recognize and address other officer’s responses. D.D. stated, “I can go ahead and read, are you ok? If you’re a rookie and you’re starting to like get some shakes, I’m going to make sure I can see that and I want to calm you down.”

J.W. discussed how the ability to recognize and control physical responses in others is imperative to officer safety. As a trainer he felt that:

Because it is going to be hard to give someone that experience if they’ve never had it in the real world. It is. But, even if they recognize that, hey, my body is going to do something. You know. I would love to give it to them before, or at least as close as you can get to that visceral reaction.

Scenario and simulation training for law enforcement officers may lead to an improved understanding of their decision-making process. Training may help officers to recognize and ameliorate their own instinctive responses to critical incidents. Through a shared experience of training with others, their ability to recognize these effects in others could be enhanced.

**Identifying options**

With experience and training, officers learn to intuitively respond to situations and do not weigh options. Officers were asked to reflect on whether or not they identified options when making decisions under tense, uncertain, and rapidly evolving circumstances. P.H. related his experiences.
I would say it was not really weighing options or anything like that. I’d say I was just acting on what I thought would resolve the situation. It was rapidly evolving and happened quickly so it wasn’t a whole lot of time to sit back and think… I just kind of reacted to what I saw.

Asked if he weighed options in critical incidents - for example choosing between option A, option B, or option C - D.D. stated, “The closer you get to a problem, the less options, the more options fall away. I intuitively know the correct response. The next decision is A.”

D.D. related how he approaches situations when responding to NIPAS calls outside of his working jurisdiction.

I’m processing what information do I know? What am I hearing as soon as I get comms up? When I was in NIPAS, listen to the CP [command post]. Start getting information… This is what the PD [police department] came here for so they are already giving me a flash of the totality of the circumstances that I’m dealing with.

In the critical reflections of the participants they did not use option identification in the sense of choosing among alternatives. The situational elements of time and pattern recognition impact how officers resolve critical incidents.

**Situation**

Law enforcement decision-making is limited by options and time. The Supreme Court of the United States (SCOTUS) has found that the use of force by law enforcement officers is constitutional when it is “objectively reasonable” (Graham v. Connor, 1989) and acknowledged that the “calculus of reasonableness must embody allowance for the fact that police officers are often forced to make split-second judgments - in circumstances that are tense, uncertain, and rapidly evolving – about the amount of force that is necessary in a particular situation” (Graham v. Connor, 1989).

J. W discussed situational use-of-force challenges.

You try to get the totality of circumstances. You always say that, but do you really have it? So I think over the past two years I have really tried to gather more, like everything that is
involved, that has to do with the environment that I’m going into... And some of that gets into the force science of when I’m going to use force... but there is no like specific thing, that’s what is hard for me to say because there is not like... Every situation is different.

While not every situation faced by police necessitates the use of force, every situation is unique and often tense, uncertain, and/or rapidly evolving. The legal definition of use-of-force by police is beyond my expertise and the scope of this project. It is important to understand that as a term of art, “use-of-force” is viewed from the experience and perspective of both officers and citizens. Every action taken by an officer is open to interpretation – from tone of voice, vehicle positioning, approach, etc. – but the findings in Graham v. Connor (1989) provide a foundational understanding of reasonableness in the context of decision-making by law enforcement officers. Consequently I have used it here as a baseline for the discussion and examination of situational decision-making by law enforcement officers.

**Critical Reflection**

Law enforcement officers can leverage critical reflection of experience and training to improve decision-making in tense, uncertain, and rapidly evolving circumstances. P.H. shared his thoughts on the subject of critical reflection.

I think that the more you know about your thinking process, the better decisions that you could be making. Help you to be able to understand what is happening, and why, so you can make better decisions.

J.W. related that he has incorporated the use of critical reflection in his training programs.

“The reflection, self-reflection is huge. And that is what I’ve been trying to instill in my guys. It’s hard, very hard.”

**Model Use**

Law enforcement officers can leverage experience, training, and critical reflection to improve decision-making. The CDM is one tool that officers may use for pre-mortems,
debriefing, slowly developing situations, and critical reflection. S.C. stated his belief that the CDM may be best used in static situations, “Where they are not rapidly evolving.” P.H. described his thoughts on use of the CDM.

I think that every circumstance is so different that it is very hard to cover with this kind of a model (pointing to the CDM)...Especially with how rapidly things are happening. It’s difficult to sit back and think about it. Certain aspects could be. But, for identifying options and determine the best course of action, normally that’s a just kind of a split-second decision that you have to make. If you have time to sit back, sure, you can go through your options. It’s more if you have time to set up and go through all the steps, maybe a more static environment.

D.D. gave examples of how he viewed the CDM being used.

This model here (pointing to the CDM) is much more in the lines of a warrant service, a dignitary protection planning...a barricade where you’ve already, your perimeter is set...Everyone else up in the command post is doing the rest of this (pointing to the steps of the CDM).

T.K. shared his thoughts on how the CDM could be used as an evaluation tool.

I personally think this model (head nodding toward the CDM), this is a good, for critiquing an officer’s actions. It’s a good step by step to ask them, you know, what they did and how they did. To critique how they did. The officer might not have this ideology in his head while he is acting, depending on the situation, but...as [an] evaluating tool...question one to question done, I think it covers all the bases.

Officers identified several uses for the CDM including as a tool to critically reflect on decision-making by the officer and others.

Intuitive Decision-Making

Law enforcement officers use experience and pattern recognition to make intuitive decisions. S.C. described his experience making decisions. “It’s more intuitive. You more go by your experience. What the person is doing. What the situation is doing. You know based on your time as a police officer you learn cues about what people are doing.” T.K. related his view.

I personally believe that if you don’t take some of that knowledge from previous incidents, you’re missing out on a very, very, good piece of information or reference
point to start from. You might start from that through your experience, you might even get a different ending on this next experience, but at least you know where you are going.

The ability to make intuitive decisions requires the rapid assessment of probability and relies on past experiences and training (Liberman, 2000).

**Summary**

This project began with the following research question: How do law enforcement officers describe their decision-making experiences under tense, uncertain, and rapidly evolving circumstances? From these descriptions, is there: a) usage of decision-making model(s); b) usage of intuitive decision-making; and c) preparedness and/or training in decision-making? Based on the interviews, I submit that these officers: a) did not describe usage of a decision-making model(s); b) discussed extensive usage of intuitive decision-making; and c) expressed a lack of preparedness and training in decision-making.

The results of this research project suggest that decision-making is the most important job function of law enforcement. Experiences influence an officer’s decision-making as they learn to intuitively respond to situations and naturally develop pattern recognition to make these intuitive decisions. They develop the ability to recognize and ameliorate their physical responses, and those of other officers, to critical incidents through training and experience. Lastly, law enforcement officers can leverage critical reflection of experience and training to improve decision-making in tense, uncertain, and rapidly evolving circumstances.
Conclusions and Recommendation

In 2016, the Police Executive Research Forum (PERF) recommended the adoption and use of the Critical Decision Model (CDM) by law enforcement officers as a new way to approach tactical decisions. There has been considerable multidisciplinary research conducted on intuition and decision-making, but there are few studies that look at its role in the context of law enforcement decision-making and under specific circumstances in which they must often make decisions. The purpose of action research is to “provide participants with new understandings of an issue they have defined as significant and the means for taking corrective action” (Stringer, 2014, p. 61). This project explored law enforcement decision-making through the review of decision-making literature, consideration of the CDM, and semi-structured interviews with five law enforcement officers.

Conclusions

The results of this project imply that the CDM may not be an appropriate model for use in every tense, uncertain, and rapidly evolving circumstance in which law enforcement officers make decisions. The results further suggest that decision-making is an essential function of law enforcement and a training intervention designed to improve officer understanding of the decision-making process could be of value. Lastly, this project identified the CDM as a tool for critical reflection that supports the Intuitive Decision-making: Engagement, Agency, and Leverage (ID:EAL) Model advanced below as one possible training intervention; The ID:EAL Model exploits experience, training, and critical reflection to move an officer toward the goal of improved decision-making while the CDM may be viewed as a driver of experience and training (Figure 4.0). The culmination of this project is the conceptual basis and framework for the ID:EAL Model.
ID:EAL Model: Conceptual Model and Framework

Robson (2002, as cited in Green, 2014) suggested “new researchers find it useful to develop a conceptual model – the diagrammatic form of a conceptual framework – and refine it as data collection and analysis take place” (p. 36). The conceptual framework has been described as a map for study that gives rationale for the development of research questions (Fulton & Krainovich-Miller, 2010). While generating theory has been suggested as the purpose of most qualitative research (Parahoo, 2006), the role of a conceptual framework is to make the research findings more meaningful (Polit & Beck, 2004). Green (2014) suggested “linking the findings into a coherent structure can make them more accessible and so more useful to others” (p. 36). Where a framework is based in concepts, the framework should be called a conceptual framework (Fain, 2004).

Conceptual Model: Venn Diagram – Basis for ID:EAL Model Development

Three main subjects, or domains of learning as I will call them here, were identified from this project to advance law enforcement officer’s awareness and understanding of the decision-making process. The three domains are experience, training, and critical reflection. One may view the origin of the ID:EAL Model as the sum of these domains (Figure 5.0).

When these domains are brought together in the context of decision-making, the elements of the ID:EAL Model may be defined:

*Intuitive Decision-making = Experience + Training + Critical Reflection.*

Engagement, agency and leverage may be viewed as consequential interrelationships between these domains (Figure 6.0). The Venn diagram illustrates the following relationships:

*Engagement = Experience + Training;*

*Agency = Experience + Critical Reflection; and*
Leverage = Critical Reflection + Training.

Conceptual Framework: ID:EAL Model

The conceptual framework (Figure 7.0) advanced here conveys a temporal and contributing relationship between the: a) Novice Condition; b) ID:EAL Training Intervention; and c) Ideal Condition. The purpose of this framework is to theorize how a training intervention, grounded in the interrelating domains of learning, may provide law enforcement officers a foundational understanding of decision-making and empower them with the knowledge to make, understand, and improve decisions under the inchoate, emergent situations they encounter.

Novice Condition. The Novice Condition illustrates the concept of the leveraging of experience and training by the officer to respond to circumstances that are tense, uncertain, and rapidly evolving. The Novice Condition does not use critical reflection and assumes the required accumulation of an unquantifiable amount of training and experience to successfully resolve these circumstances. Restated, the law enforcement officer arrives on scene and is subjected to the tense, uncertain, and rapidly evolving circumstances that the officer relies on past training and experience to resolve. The officer views these circumstances as isolated emerging crises that require individualized attention and resolution as each reaches the officer’s awareness. The officer in the Novice Condition views the dilemma as circumstances, rather than a situation that possesses cues and patterns to its solution and does not yet command agency to engage and leverage intuitive decision-making.

ID:EAL Training Intervention. The ID:EAL Training Intervention may be used to improve officer decision-making through training in the consequential interrelationships between the domains of learning: engagement, agency, and leverage. This training is intended to provide law enforcement officers with an improved understanding of how they perceive, reflect, and
learn from experiences employing intuitive decision-making, and endeavors to advance the use of intuitive decision-making to successfully resolve inchoate, emergent situations through the officer’s agency to engage and leverage intuitive decision-making. This training intervention in the context of the ID:EAL Model is advanced as an accelerating force to move the law enforcement officer from a reactionary position, suggested as the Novice Condition, to a position of engagement and agency to leverage intuitive decision-making, suggested as the Ideal Condition.

**Ideal Condition.** In the proposed Ideal Condition, the reactionary response to isolated emerging crises of circumstances through the leveraging of experience (Novice Condition) has been surpassed with the intervention of training on the ID:EAL model to develop the law enforcement officer’s agency to actively engage the situation and to leverage intuitive decision-making. The officer continues to expand the catalog of recognizable cues and patterns from experiential learning through feedback and reflection of intuitive decisions. Figure 7.0, c. Ideal Condition, illustrates the proposed ideal condition in which the officer’s use of intuition is a balance of engagement with the situation, agency in making intuitive decisions, and the use of feedback and reflection as leverage to successfully resolve inchoate, emergent circumstances. (A reconciliation of the theoretical and conceptual frameworks can be found in Table 4.0)

**Recommendation**

Consistent with the purpose of practitioner research, theory-in-use (Argyris & Schön, 1974), adult learning theory (Knowles, 1970) and the theory of reflection-in-action (Schön, 1987), the Intuitive Decision-making: Engagement, Agency, and Leverage Model (ID:EAL) proposes the use of “continuing cycles of investigation designed to reveal effective solutions to issues and problems experienced in specific situations and localized settings...[that] may
increase the effectiveness and efficiency of [one’s] work.” (Stringer, 2014, p. 1). In the present case, it is intended to improve the understanding of decision-making by law enforcement officers in inchoate, emergent situations.

The ID:EAL Model’s recommended application is to inform the development of training in the use of critical reflection to effectively engage and leverage intuitive decision-making by law enforcement experts. While this project does not advance a comprehensive curriculum for such training, a brief training outline introducing the model and reviewing topics discussed (Appendix E) in this paper has been attached. This outline will be the foundation for a training program that I hope to development and share in the future.

**Limitations**

A significant limitation was the small and purposeful sampling of interview participants. Consistent with Creswell’s (2012) definition, purposeful sampling allowed for the selection of participants based on their location and personal experiences that could best help me understand the central phenomenon. However, this limited sample did not allow for implications of inherent bias, or race, gender, and/or other differences to be researched, factored, or considered. This purposeful sample included five law enforcement officers from three different municipal police departments who were identified as primary stakeholders in the stated purpose of this research (Stringer, 2014).

Stringer (2014) cautioned, “professional knowledge can only ever be a partial and incomplete analysis of the situation and needs to complement and be complemented by the knowledge inherent in participant perspectives” (p. 168). This presents two limitations to this research: The first is that I am a practitioner whose experience provides only a partial and incomplete understanding to analyze the decision-making of other law enforcement officers.
Secondly, five law enforcement officers provided invaluable and greatly appreciated insight into this study, but the result of this self-imposed limited sampling is that the results of this project are not generalizable to other populations and situations.

Argyris & Schön (1974) suggested that the theory of reflection-in-action provides a framework to assess the congruence and effectiveness of theory-in-use. As mentioned, this project initially proposed conducting critical incident scenarios involving use-of-force decisions by law enforcement officers to observe their actions. The inability to conduct scenarios did not allow for the assessment of congruency between officer’s espoused theory and theory-in-use.

As a student researcher, I had limited resources, no external funding, and looming completion goals that limited the scope of this project. While these factors will always be considerations, I hope that this project is the foundation of a meaningful inquiry into decision-making by law enforcement officers.

**Future Research**

Kahneman and Tversky (1984) found that the psychophysics of value induce risk aversion in the domain of gains and risk seeking in the domain of losses. Contextual decision problems can be framed in multiple ways and create different decision-maker preferences (Kahneman & Tversky 1984). But, can the question of risk in economics elucidate the question of risk in law enforcement? Kahneman and Tversky stated,

Risky choices, such as whether or not to take an umbrella and whether or not to go to war, are made without advance knowledge of their consequences. Because the consequences of such actions depend on uncertain events such as the weather or the opponent’s resolve, the choice of an act may be construed as the acceptance of a gamble that can yield various outcomes with different probabilities. It is therefore natural that the study of decision
making under risk has focused on choices between simple gambles with monetary outcomes and specified probabilities in the hope that these simple problems will reveal basic attitudes toward risk and value (p. 342).

This area of economics research (i.e. prospect theory) may be of value to explore and evaluate decision-making by police officers. For example, do police encounters that require the use of force follow the psychophysics of value?

- i.e. risk aversion in the domain of gains
- i.e. risk seeking in the domain of losses

If so, what, if any, use of force situations places the officer in the cognitive and psychophysical realm of risk aversion? What, if any, use of force situations places the officer in the cognitive and psychophysical realm of risk seeking? What are the officer’s perceptions of use of force situations that induce risk aversion or risk seeking?

For example, when an officer seizes a person, is the perception a gain? In this situation, the suspect is faced with the loss of freedom but does that necessarily equate to a gain for the officer that induces risk aversion? Does the officer desire to minimize risk while seizing a person who may be more willing to gamble when facing the certain loss of their freedom?

\[
\text{Officer} \rightarrow \text{Seizure of the person} - \text{Gain} - \text{Risk Aversion}
\]

\[
\text{Seizure of Person} \leftarrow \text{Officer} \rightarrow \text{Seizure of the person} - \text{Gain} - \text{Risk Aversion}
\]

\[
\text{Suspect} \rightarrow \text{Freedom} - \text{Loss} - \text{Risk Seeking}
\]

When an officer uses force against a person, does the officer perceive this as risk seeking in their willingness to accept more risk to protect themselves and/or others? Does the officer desire to maximize risk while using force against a person who may be less willing to gamble when facing the potential gain of less force inflicted upon them?
What can we learn about risk seeking and risk aversion that can be leveraged in decision-making and resolution of use-of-force situations?
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Table 1.0 Attributes of stakeholders selected for interview.

<table>
<thead>
<tr>
<th>Stakeholder Attributes</th>
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</thead>
<tbody>
<tr>
<td>Employment</td>
</tr>
<tr>
<td>Currently employed as a law enforcement officer within the State of Illinois</td>
</tr>
<tr>
<td>Simulation Training</td>
</tr>
<tr>
<td>Participated in simulation training (FATS/PRISM) while employed as a law enforcement officer</td>
</tr>
<tr>
<td>Decision-making</td>
</tr>
<tr>
<td>Perform decision-making as a function of their duties as a law enforcement officer</td>
</tr>
<tr>
<td>Use-of-force</td>
</tr>
<tr>
<td>Authorized and empowered with discretion to use force within their duties as a law enforcement officer</td>
</tr>
<tr>
<td>Agency</td>
</tr>
<tr>
<td>Authorized and empowered by their employer to make decisions in their duties as a law enforcement officer</td>
</tr>
</tbody>
</table>
Table 2.0 Themes coded from semi-structured interviews with stakeholders on how they experience decision-making as a law enforcement officer

<table>
<thead>
<tr>
<th>Experience Decision-Making Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Reflection</td>
</tr>
<tr>
<td>Experience</td>
</tr>
<tr>
<td>Identifying Options</td>
</tr>
<tr>
<td>Intuitive Decision-Making</td>
</tr>
<tr>
<td>Model Use</td>
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<tr>
<td>Pattern Recognition</td>
</tr>
<tr>
<td>Training</td>
</tr>
<tr>
<td>Situation</td>
</tr>
<tr>
<td>Temporal Limits</td>
</tr>
</tbody>
</table>
Table 3.0 Major theme and sub-theme grouping of law enforcement officer interviews

<table>
<thead>
<tr>
<th>Experience</th>
<th>Training</th>
<th>Critical Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporal Limits</td>
<td>Identifying Options</td>
<td>Model Use</td>
</tr>
<tr>
<td>Pattern Recognition</td>
<td>Situation</td>
<td>Intuitive Decision-making</td>
</tr>
</tbody>
</table>
### Table 4.0 Reconciliation of Theoretical and Conceptual Frameworks

<table>
<thead>
<tr>
<th>Theoretical Framework</th>
<th>Conceptual Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theory-in-Use: Model II</strong> (Argyris &amp; Schön, 1974)</td>
<td><strong>ID:EAL Model: Novice Condition</strong></td>
</tr>
<tr>
<td>Maximize valid information</td>
<td>Tense, uncertain, and rapidly evolving circumstances</td>
</tr>
<tr>
<td>Maximize informed choice</td>
<td>Training, experience</td>
</tr>
<tr>
<td>Maximize commitment to decisions made</td>
<td>Presence</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Adult Learning Theory</strong> (Knowles, 1970)</th>
<th><strong>ID:EAL Model: Training Intervention</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>His (or her) time perspective changes from one of postpones application of knowledge to immediacy of application, and accordingly his (or her) orientation toward learning shift from one of subject centeredness to one of problem centeredness</td>
<td>Intuitive decision-making</td>
</tr>
<tr>
<td>He (or she) accumulates a growing reservoir of experience that becomes an increasing source for learning</td>
<td>Engagement</td>
</tr>
<tr>
<td>His (or her) self-concept moves from being a directed to a self-directed human being</td>
<td>Agency</td>
</tr>
<tr>
<td>His (or her) readiness to learn becomes oriented increasingly to developmental tasks of his (or her) social roles</td>
<td>Leverage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Reflection-in-Action</strong> (Schön, 1987)</th>
<th><strong>ID:EAL Model: Ideal Condition</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>An alternative to the traditional epistemology of practice...and leads us to recognize the scope of technical expertise is limited by situations of uncertainty, instability, uniqueness, and conflict</td>
<td>Intuitive Decision-making: Engagement, agency, leverage</td>
</tr>
<tr>
<td>Congruence of espoused theory (internal - prior to action) and theory-in-use (observable - action); conflict between the two can be impetus for change</td>
<td>Critical reflection</td>
</tr>
</tbody>
</table>
Figure 1.0 Critical Decision-Making Model

- Collect Information
- Act, review, and re-assess
- Assess situation, threats, and risks.
- Identify options and determine best course of action.
- Consider police powers and agency policy.
- Ethics
  - Values
  - Proportionality
  - Sanctity of Life
Figure 2.0 United Kingdom National Decision Model

Gather Information and Intelligence

Code of Ethics

Take action and review what happened.

Assess threats and risk to develop a working strategy.

Identify options and contingencies.

Consider powers and policy.
Figure 3.0 Conception of Limited Critical Decision-Making Model

1. Review
2. Reassess
3. Act
4. Collect Information
5. Ethics
6. Values
7. Proportionality
8. Sanctity of Life
9. Identify options and determine best course of action.
10. Consider police powers and agency policy.
11. Assess situation, threats, and risks.
Figure 4.0 Conception of CDM as Driver of Experience and Training.
Figure 5.0 Conception of ID:EAL as the sum of Experience, Training, and Critical Reflection

Intuitive Decision-Making = Experience + Training + Critical Reflection
Engagement = Experience + Training
Agency = Experience + Critical Reflection
Leverage = Training + Critical Reflection

Figure 6.0 Venn Diagram – Basis for ID:EAL Model Development
Figure 7.0. ID:EAL Model Conceptual Framework

a. Novice Condition

b. ID:EAL Training Intervention

c. Ideal Condition
Appendix A

Glossary

The below terms are presented for use in the context of this project – please see footnotes for sources:

**agency** - The capacity of a person to act in a given environment.¹

**critical reflection** - Critical reflection is an extension of “critical thinking”. It asks us to think about our practice and ideas and then it challenges us to step-back and examine our thinking by asking probing questions. It asks us to not only delve into the past and look at the present but importantly it asks us to speculate about the future and act.²

**engagement** - The act of engaging or the state of being engaged.³

**ideal** - a person or thing conceived as embodying such a conception or conforming to such a standard, and taken as a model for imitation⁴

**leverage** - Power or ability to act or to influence people, events, decisions, etc.⁵

**novice** - A person who is new to the circumstances, work, etc., in which he or she is placed; beginner.⁶

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³ Retrieved from http://www.dictionary.com/browse/engagement
⁴ Retrieved from http://www.dictionary.com/browse/ideal?s=t
⁵ Retrieved from http://www.dictionary.com/browse/leverage?s=t
Appendix B

Memo

To: Dr. Brian Vivona and Roger Callose
From: Renee Theiss, IRB Chair
CC: Fatmah Tammalihe
Date: February 27, 2017
Re: Intuitive Decision Making

Project Number: #17-01-03

We are pleased to inform you that your proposal has been approved by the GSU Institutional Review Board. You may begin your research. Please be advised that the protocol will expire on February 27, 2018 in connection with the CITI training expiration date of one of the researchers. The study date can be extended up to a year upon verification that CITI training certificates are valid for the full year.

Before the study expiration date, if your research is completed, please inform the IRB in writing of the number of participants involved in your research and the closing date. If you intend to collect data using human subjects after that date, the proposal must be renewed by the IRB. If you make any substantive changes in your research protocols before that date, you must inform the IRB and have the new protocols approved.

Please include the exact title of your project and the assigned IRB number in any correspondence about this project.

If you have any questions, please feel free to contact Renee Theiss at irb@govst.edu.
Appendix C

Governors State University

Informed Consent to Participate in a Research Study

Project Title: Intuitive Decision-Making: Engagement, Agency, and Leverage

Project Director: Dr. Brian Vivona

Student Researcher: Roger Callese

Introduction
You are being asked to participate in a research study to reflect on past decisions you made while attending a firearms training simulator (FATS) program. You were selected as a possible participant because 1) you are employed as a law enforcement officer and 2) during the period of your employment as a law enforcement officer, you have completed a FATS program that utilized simulated police/citizen interactions and post-incident critical reflection of discretionary decision-making actions and/or inactions.

We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study
The purpose of the study is to better understand the use of intuitive decision-making by law enforcement officers in the context of their employment. Ultimately, this research may be published as a journal article, capstone project, presented at conferences, and/or inform the development of decision-making training for law enforcement officers.

Description of Study Procedures
If you agree to be in this study, you will be asked to meet once with the student researcher for approximately 50 minutes at a location of your mutual agreement, to answer five to ten semi-structured questions related to the topic of this study, and consent to the audio recording of your voice during the interview.

Risks/Discomforts of Being in this Study
There are no reasonable foreseeable risks or discomforts from participation in this study. There may be unknown risks.

Benefits of Being in the Study
The potential individual benefit to participation is that you may better understand your decision-making processes from critical reflection on the topic of this study.

Confidentiality
The records of this study will be kept strictly confidential. The audio recording of the interview will be transcribed from the digital recording. Once transcription is completed, the audio recording will be deleted from the digital recording device.
INTUITIVE DECISION-MAKING

Research records will be kept in a locked file, and all electronic information will be coded and secured using a password-protected file. We will not include any information in any product or report of this study that would make it possible to identify you.

Payments
Upon completion of the study procedure, you will receive a gift card to a coffee retailer valued at $10.00. (The student investigator may retain a copy of the retailer receipt for gift card purchases for compliance review by the Governors State University Institutional Review Board.)

Right to Refuse or Withdraw
The decision to participate in this study is entirely up to you. You may refuse to take part in the study at any time without affecting your relationship with the investigators of this study or Governors State University. Your decision will not result in any loss or benefits to which you are otherwise entitled. You have the right not to answer any single question, as well as to withdraw completely from the interview at any point during the process; additionally, you have the right to request that the researcher not use any of your interview material.

Right to Ask Questions and Report Concerns
You have the right to ask questions about this research study and to have those questions answered to your satisfaction. If you have any further questions about the study and/or would like a summary of the results of this study sent to you, feel free to contact me, Roger Callese at or by telephone at .

If you have any other concerns about your rights as a research participant that have not been answered by the investigators, you may contact the Governors State University Institutional Review Board at irb@govst.edu or any individual member of the Board through their identification and contact information listed on the following website: http://www.govst.edu/About/Offices and Departments/Office of Sponsored Programs and Research/Institutional Review Board/

Consent

You will be given a signed and dated copy of this form to keep.

Your signature below indicates that you have decided to volunteer as a research participant for this study, and that you have read and understood the information provided above.

Subject's Printed Name: ____________________________

Subject's Signature: ____________________________ Date: ____________

Your signature below indicates that you agree to have your voice audio recorded during the interview as described in the information provided above.

Subject's Printed Name: ____________________________

Subject's Signature: ____________________________ Date: ____________
Appendix D

IRB APP #17-01-03
General Questions

Researcher: Have you read the informed consent form and agreed to have your voice recorded during this interview?

Researcher: Please keep in mind that the following questions are asked in the context of your employment as a police officer. I have presented you with a copy of the Critical Decision-Making Model for review and reference.

Researcher: Are you presently a police officer?

Researcher: Have you attended FATS or other police simulator training while employed as a police officer?

Researcher: Do you make decisions in your daily duties as a police officer?

Researcher: If you had to rate decision-making, how would you rate the skill of decision-making relative to its importance in your function as a law enforcement officer? So, in other words, how important is decision-making in your job?

Researcher: Have you attended a training course or otherwise received formal training in a decision-making model?

Researcher: Prior to, while at, or following your FATS or other simulator training, training, did you utilize, recall from memory, or otherwise refer to a decision-making model – such as the Critical Decision-Making Model – in making those decisions?

Researcher: What did you learn about decision-making from FATS or other simulator training?

Researcher: While performing duties as a police officer, have you had occasion to make decisions under circumstances that could be described as tense, uncertain, and/or rapidly evolving?

Researcher: While engaged in the resolution of those circumstances, did you utilize, recall from memory, or otherwise refer to a decision-making model – such as the Critical Decision-Making Model?

Researcher: Do you believe that a model, such as the Critical Decision Making Model, could be used in all circumstances faced by police?
Researcher: How would you describe your decision-making process in tense, uncertain, and rapidly evolving circumstances?

Researcher: Do you believe it would be beneficial to receive training designed to enhance an officer's understanding of the decision-making process – specifically those decisions made in tense, uncertain, and rapidly evolving circumstances?

Researcher: Is there any other insight into your decision-making process that you would like to share?

Researcher: Do you have any questions for me?
Appendix E

Introduction to ID:EAL Model Training Outline

I. Introduction

a. Guardian Mindset

   i. “Law enforcement should embrace a guardian mindset to build public trust and legitimacy” (The President’s Task Force, p. 11).

   ii. Ferguson, MO National Guard Response

b. Procedural Justice

   i. Recommendation 1.1 (President’s Task Force)

      1. “for internal and external policies and practices” (p. 11)

      2. the only way to ensure the public confers legitimacy on law enforcement

   ii. Based on four central principles:

      1. Treating people with dignity and respect

      2. Giving individuals “voice” during encounters

      3. Being neutral and transparent in decision making, and


   iii. Concepts apply to internal and external stakeholders (PERF, March 2014)

   iv. Police executives should treat their employees with the same sense of legitimacy and procedural justice that applies to members of the public
c. Organizational Culture
   i. Organizational socialization: process by which newcomers are transformed from outsiders to participating, effective members of the organization (Nelson, Mathis, Daft, Bennett, & Lewis, 2006)
   ii. Field training program
   iii. Authoritarianism

d. Organizational Change
   i. Needs of groups and actors outside of agency (Simon, 1947; Katz & Kahn, 1966)
   ii. Broader societal context (DeLone, 2015)
   iii. Law enforcement leaders often fail to direct appropriate actions in response to the need for change (Fyfe, 1996)

e. Organizational Competence
   i. Peacekeeping model (DeLone, 2015)
   ii. Distinctive competence (Andrews (1971)

f. Organizational Crises
   i. Crises in society and policing lead to change (Greenwood, Suddaby, & Hinnings, 2002; Walker & Katz, 2005)
   ii. "Precipitating jolts" (Greenwood, Suddaby, & Hinnings, 2002, p. 60)
   iii. "Bureaucratically stagnant" (DeLone, 2015, p. 221)
   iv. Professional accountability (Romzek & Drobnick, 1987)
g. Training

i. *Canton v Harris* (1989)

ii. Lack of training or failure to training

iii. Legal standard “deliberate indifference” to constitutional rights of the citizen with whom the police come into contact

II. Use of Force

a. Sanctity of Life (PERF, Guiding Principle 1)

i. Defined: may be defined as human life being of ultimate importance and inviolability

ii. Rendering first aid to those in need (PERF, Guiding Principle 7)

iii. Should be clearly stated as philosophy in policy (President’s Task Force, Pillar 2: Policy and Oversight)

iv. Prohibition on the use of deadly force against individuals who pose only a threat to themselves (PERF, Guiding Principle 9)


i. Departments should hold themselves to higher standard than “objective reasonableness” (PERF, Guiding Principle 2)

ii. PERF Guiding Principle 5

1. Suggested that adoption of the Critical Decision-Making Model (CDM) “is a constructive process that provides a framework for going beyond the minimum legal standard of objective reasonableness” (para. 5)

2. CDM suggested for adoption by departments
INTUITIVE DECISION-MAKING

3. Proportionality
   i. Use of force must meet proportionality (PERF, Guiding Principle 3)
   ii. Assessment with two questions
       1. How would the general public view the action we took?
       2. Would they think it was appropriate to the entire situation and to
          the severity of the threat posed to me or to the public?

4. De-escalation
   i. Departments should adopt the policy statement that “de-escalation is the
      preferred, tactically sound approach in many critical incidents” (PERF,
      Guiding Principle 4)
   ii. Includes the practice of proportionality, using distance and cover, tactical
       repositioning, “slowing down” situations that do not pose an immediate
       threat, calling for supervisory or other resources, etc
   iii. Central tenant of CDM (along with sanctity of life, ethics, and values)

5. Critical Decision-Making Model (CDM) (Figure 1.0)
   i. Provides new way to approach critical incidents (PERF, Guiding Principle
      5)
   ii. Adapted from United Kingdom National Decision Model (Figure 2.0)
   iii. Caveat: In a fast-moving incident, the police service recognizes that it
        may not always be possible to segregate thinking or response according to
        each phase of the model. In such cases, the main priority of decision
        makers is to keep in mind their overarching mission to act with integrity to
        protect and serve the public (UK Decision Model, n.d.)
f. Duty to Intervene
   i. Officers must prevent other officers from using excessive force (PERF, guiding Principle 6)

g. Use of Force Reporting
   i. PERF Guiding Principles 10, 11, and 13
   ii. Documentation should be transparent and available to the public

III. Communicating with the Public
   a. Use of Force Statistics
   b. Building Trust
   c. Community Collaboration
   d. Communicating with the Mentally Ill

IV. Critical Decision-Making Model
   a. Ethics, values, proportionality, and sanctity of life
   b. Not all circumstances are tense, uncertain, and rapidly evolving
   c. Clockwise cycle
   d. Breakdown of five steps
   e. Step 4 and 5 not supported by the literature
      i. Gap in support of further study
   f. The Need for a New Model
      i. Gap in CDM
      ii. Circular argument (Figure 3.0)
      iii. Tense, uncertain, and rapidly evolving circumstances
      iv. Importance of decision making
g. Why Intuitive Decision-Making
   i. Supported by literature
   ii. ID:EAL Model endeavors to:
      1. Identify and promote the importance of intuitive decision-making
      2. Facilitate a supportive working and training environment as an adjunct to leverage intuitive decision-making
      3. Increase officer recognition and mitigation of instinctive and conditional heuristics and biases in decision-making, and
      4. Command agency of intuitive decision-making while leading under tense, uncertain, and rapidly evolving circumstances

h. Why Intuitive Decision-Making by Law Enforcement Officers
   i. Why Tense, Uncertain, and Rapidly Evolving

V. ID:EAL Model (Figure 4.0) Conception
   a. Introduction
      i. DOJ Investigations into Ferguson Police Department, Ferguson, MO
      ii. Dichotomy of decision-making
   b. Intuitive Decision-Making by Law Enforcement in Inchoate, Emergent Circumstances
      i. Intuition Defined: “the situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition” (Simon, 1992, p. 155)
ii. Intuitive Decision-Making

1. Intuitive decision-making: "rapid assessment of the probability of a favourable or unfavourable outcome of a planned behavior in a situation of uncertain outcomes, which is dependent on previous experiences rather than on serial processes of inductive and or deductive reasoning" (Liberman, 2000, p. 461)

iii. Pattern Recognition

1. "intuition depends on the use of experience to recognize key patterns that indicate the dynamics of the situation" (Klein, 1999, p. 31)

2. Recognition-primed decision strategy (Klein, 2013)

iv. Temporal Pattern Completion

1. Tantamount to prediction of later sequence elements (Lieberman, 2000)

2. Designed to lead to intuitions that are accurate (Lieberman, 2000)

v. Systems of Thought

1. System 1
   a. Impulsive
   b. Automatic

2. System 2
   a. Reflective
   b. Deliberative

vi. Unconscious Thought Theory (UTT)
1. “Because its low capacity, conscious thought leads to progressively worse choices with more complex issues. Unconscious thought...the quality of choice does not deteriorate with increased complexity, allowing unconscious thought to lead to better choices than conscious thought under complex circumstances (Dijksterhuis, Bos, Nordgren, & van Baaren, 2006, p. 1006)

vii. Heuristics and Bias

viii. Heuristics

1. Availability Heuristic
2. Representational Heuristics and Anchoring
3. Anchoring and Adjustment Heuristics

VI. Physiology and Intuition

a. Gut Feelings
   i. Autonomic Nervous System (ANS)
   ii. Enteric Nervous System (ENS)

b. Learning
c. Teachability

VII. IDEAL Model

a. There has been considerable multidisciplinary research conducted on intuition and decision-making, but there are few studies which look at its role in the context of law enforcement decision-making and under specific circumstances in which they must often make decisions.
b. This project explored intuitive decision-making in this context and will contribute to the knowledge in the development of a training program for law enforcement decision-makers to better understand: How law enforcement decision-makers perceive and reflect on their experiences employing strategies that

i. identify and promote the importance of intuition in decision-making;

ii. facilitate a supportive working environment as an adjuvant to promote intuitive decision-making;

iii. increase officer recognition and use of instinctive and conditional heuristics and biases in decision-making; and

iv. utilize the power of intuitive decision-making in decision-making under emergent conditions?

c. The literature supported the underlying premise that intuitive decision-making can be learned and that it can be developed through training.

d. Law enforcement decision-makers are constantly challenged to interpret situations and make decisions under inchoate circumstances often without the benefit of consideration or comparison.

e. Kahneman (2011) related that we have an inherent need to “see the world as more tidy, simple, predictable, and coherent than it really is. The illusion that one has understood the past feeds the further illusion that one can predict and control the future” (p. 204).

f. Law enforcement decision-makers make these decisions through the same psychological processes and biological limitations with which most of us share.
g. We all share the physiological blind spots in our vision that our brains creatively, and seamlessly, fill in to make sense of our surroundings - yet ignores what is truly in the physical world and limits our complete appreciation of how we see the world.

h. In addition to these shared traits and processes, law enforcement decision-makers must often contend with unique challenges in observing, defining, and responding to a rapidly evolving reality. They must actively mitigate and suppress the instinctive responses (fight, flight or freeze) when subjected to stress, anger, and fear.

i. "Police agencies, like all government organizations and private entities, are not immune to the necessity of effective decision-making" (Swanson, Territo, & Taylor, 2004, p. 653).

j. While it has been argued that "empirical research on the police use of deadly force has been rather limited" (McElvain & Kposowa, 2008, p. 506), there is no shortage of studies examining the result of police decisions made under inchoate and emergent situations, specifically in regard to deadly force policies and the use of deadly force (Aamodt, 2004; Alpert & Dunham, 1999; Boutwell, 1982; Chapman, 1982; Fyfe, 1982a, 1982b; Garner & Maxwell, 1999; Geller, 1982; Geller & Karales, 1981, 1982; Greenfield, Langan, & Smith, 1999; Holmes, 2000; Henriquez, 1999; Langan, & Smith, 1999; McElvain & Kposowa, 2004; Langan, Greenfield, Smith, Durose, & Levin, 2001; Lindgren, 1981; Paoline & Terrill, 2007; Reiss, 1980; Scrivner, 1994; Sherman, 1982; Smith, 2003; Son, Davis, & Rome, 1998; Weitzer, 1999) but there is a gap in the research and a paucity of
understanding of the decision-making process of individual law enforcement officers facing these circumstances.

VIII. Theoretical Framework

a. This model has been informed by three theories:
   i. reflection-in-action (Argyris & Schön, 1974),
   ii. theory-in-use, and
   iii. adult learning theory as advanced by Knowles (1970).

b. Reflection-in-action
   i. Schön (1987) idea of reflective practice, offers “an alternative to the traditional epistemology of practice… and leads us to recognize the scope of technical expertise is limited by situations of uncertainty, instability, uniqueness, and conflict” (p. 345).
   ii. Argyris and Schön (1974) defined a practice as “a sequence of actions undertaken by a person to serve others, who are considered clients” (p. 6).

c. Theory-in-Use
   i. Defined: “a program for action designed to keep the values of certain variables constant within acceptable ranges” (Argyris & Schön, 1974, p. 22).
   ii. Argyris and Schön used the data from case studies to advance two models of theory-in-use in 1974: model I theory-in-use (pp. 63-84) and model II theory-in-use (pp. 85-95).
iii. The first model, model I theory-in-use, was developed from case studies’ data and found that practitioners used four variables in an effort to satisfice.

1. define goals and try to achieve them;
2. maximize winning and minimize losing;
3. minimize generating or expressing negative feelings; and

iv. Model I identified four action strategies used by these practitioners:

1. design and manage environment unilaterally;
2. own and control task;
3. unilaterally protect self;
4. unilaterally protect others (pp. 68-71).

v. Each action strategy, intended to keep the corresponding governing variable within acceptable range, resulted in “consequences for the behavioral world” that were interpreted as defensive and limited the freedom of choice (p. 72).

vi. These findings affect learning behavior by encouraging “single-loop rather than double-loop learning” (p. 79).

vii. The authors summarized the findings of the model I theory-in-use by stating: Model I leads to a kind of hybrid world – a pre-civilized, competitive, hostile, defensive, win/lose world onto which the supposedly civilizing safety valves of repression, containment, and deviousness have
been grafted. Such a behavioral world maintains its tenuous equilibrium through Machiavellian safety valves (p. 81).

viii. The second model, model II theory-in-use, was also formulated from case studies’ data and proposed to be “free of the dysfunctionalities of model I (Argyris & Schön, 1974, p. 85).

ix. Model II contained only three variables that the authors described as “highly valued by people in all segments and levels of our society” (p. 85). Those variables were:

1. maximize valid information;
2. maximize free and informed choice; and
3. maximize internal commitment to decisions made (pp. 88-89).

x. Model II identified three action strategies used by these practitioners:

1. make designing and managing environment bilateral task;
2. make protection of self and other a joint operation; and
3. speak in directly observable categories (pp. 89-90).

xi. The authors found that model II consequences for the behavioral world would support group norms that would be less defensive and encourage double-loop learning.

xii. They concluded that: others will tend to see them as minimally defensive and open to learning, as facilitators, collaborators, and people who hold their theories-in-use firmly (because they are internally committed to them) but are equally committed to having them confronted and tested (p. 91).
IX. Application of the Theoretical & Conceptual Framework of this Project

a. "the primary purpose of action research is to provide the means for people to engage in systematic inquiry and investigation to design an appropriate way of accomplishing a desired goal and to evaluate its effectiveness" (Stringer, 2014, p.6), adult learning theory, specifically andragogy, was utilized to conceptualize the link between the assessment of the officers present state and the desired goal of improving the understanding of decision-making in inchoate, emergent situations.

b. Andragogy answers the "so what" by bridging the understanding gained from inquiry and assessment, based on the theory or reflection-in-action, with the desire to improve decision-making through the design of a training intervention, based on andragogy.

c. Reflection-in-action and the present project. In the context of the officer’s descriptions of how they make decisions in inchoate, and emergent circumstances, the theory of reflection-in-action provides the framework to assess:

i. the congruence (internal consistency or internal inconsistency) between espoused theory and theory-in-use;

ii. the effectiveness of the theory-in-use; and


iv. Argyris and Schön (1974, p. 23) defined congruence as "one’s espoused theory matches his theory-in-use" (p. 23) – internal consistency.
v. In the framework of this study, congruence means that an officer’s espoused theory (internal - prior to action) matches his or her theory-in-use (observable - action) and conflict between the two can be an impetus for change.

vi. The authors cautioned that congruence itself is not a virtue and that: an espoused theory that is congruent with an otherwise inadequate theory-in-use is less valuable than an adequate theory that is incongruent with the inadequate theory-in-use, because then the incongruence can be discovered and provide a stimulus for change.

vii. The effectiveness of one’s theory-in-use depends on the following: the governing variables held within the theory; the appropriateness of the strategies advanced by the theory; and the accuracy and adequacy of the assumptions of the theory (p. 24).

viii. Lastly, testability is determined if “one can specify the situation, the desired result, and the action through which the result is to be achieved” (p. 25).

X. Adult Learning Theory


b. These assumptions are that, as a person matures:

i. his [or her] self-concept moves from being a directed to a self-directed human being,
ii. he [or she] accumulates a growing reservoir of experience that becomes an increasing source for learning,

iii. his [or her] readiness to learn becomes oriented increasingly to developmental tasks of his [or her] social roles, and

iv. his [or her] time perspective changes from one of postpones application of knowledge to immediacy of application, and accordingly his [or her] orientation toward learning shift from one of subject centeredness to one of problem centeredness” (p. 39).

c. Andragogy defined: “the art and science of helping adults learn, in contrast to pedagogy which is the art and science of teaching children” (Knowles, 1980, p. 43).

d. The andragogical approach has been adopted in a number of disciplines, including criminal justice (Birzer, 2004).

e. Birzer (2003) argued that the andragogical approach allows for learner-centered instruction designed to improve the competencies and traits necessary for criminal justice professionals.

f. It also promotes the use of relevant learning experiences and encourages officers to utilize their experience in problem solving (Birzer, 2003).

g. Chan (2010) concluded that adult learners “need to be involved actively in the learning process to construct their own knowledge, to make sense of the learning, and to apply what is learned” (p. 33).

XI. Conceptual Framework
a. Robson (2002, as cited in Green, 2014) suggested "new researchers find it useful to develop a conceptual model – the diagrammatic form of a conceptual framework – and refine it as data collection and analysis take place" (p. 36).

b. The conceptual framework has been described as a map for study that gives rationale for the development of research questions (Fulton & Krainovich-Miller, 2010).

c. While generating theory has been suggested as the purpose of most qualitative research (Parahoo, 2006), the role of a conceptual framework is to make the research findings more meaningful (Polit & Beck, 2004).

d. Green (2014) suggested "linking the findings into a coherent structure can make them more accessible and so more useful to others" (p. 36).

e. Where a framework is based in concepts, the framework should be called a conceptual framework (Fain, 2004).

f. The conceptual framework advanced here conveys my view of the gap identified between the Critical Decision-Making Model and the research on how decisions are made under uncertain and inchoate circumstances.

g. The purpose of this framework is conceptualize how a training intervention in decision making may provide a foundational understanding in support of the Critical Decision-Making Model advanced by PERF.

h. I have designed the ID:EAL model (Figure 4.0), based on my assumptions and preconceptions (Fain, 2004), to conceptualize how I envision the interrelation of theory-in-action and andragogy applied to address the needs of practitioners.
whose goal is to improve understanding of decision-making by law enforcement officers under inchoate, emergency situations.

XII. ID:EAL Model

a. Consistent with the purpose of action research, the theory of reflection-in-action, and adult learning theory, the ID:EAL model (Figure 4.0) proposes the use of "continuing cycles of investigation designed to reveal effective solutions to issues and problems experienced in specific situations and localized settings...[that] may increase the effectiveness and efficiency of [one's] work." (p. 1)

b. In the present case, it is intended to improve the understanding of decision-making by law enforcement officers in inchoate, emergent situations.

c. The ID:EAL model's potential application is suggested here as an accelerating force in providing law enforcement leaders with an improved understanding of how they perceive, reflect, and learn from experiences employing intuitive decision-making.

d. Additionally, this model endeavors to advocate the use of intuitive decision-making in successfully resolving inchoate, emergent situations through the officer's agency to engage and leverage intuitive decision-making.

e. The proposed model is advanced here to further conceptualize the use of reflection-in-action and andragogy as one possible catalyst to improved decision-making by officers in inchoate, emergent situations.

f. The conceptual model assumes that the apprentice condition is less than ideal and a move to the ID:EAL condition is desirable.
g. Apprentice condition: Under tense, uncertain, and rapidly evolving circumstances, the law enforcement officer draws upon past experience to resolve present circumstances. Over time, and with the accumulation of experience through officer presence in these circumstances, the officer will develop an ability to work through the problems encountered. It should be expected that this experience on which the officer draws will likely include having been present for resolution attempts that would fall along various points of a continuum from satisfactory to unsatisfactory, and may include the observation of behaviors and actions that proved to worsen the situation. The model conceptualized in this project asserts that the present condition finds the law enforcement officer in the reactionary position of being present in inchoate, emergent circumstances in which the officer draws upon past experience to find a resolution.

h. Figure 4.0, a. Present Condition, illustrates the concept of the leveraging of experience (Force) by the officer to respond to circumstances that are tense, uncertain, and rapidly evolving (Load). The present condition requires the accumulation of an unquantifiable amount of experience to successfully influence the outcome of these circumstances. Restated, the law enforcement officer arrives on scene and is subjected to the tense, uncertain, and rapidly evolving circumstances that the officer relies on past experience to resolve. The officer views these circumstances as isolated emerging crises that require individualized attention and resolution as each reaches the officer's awareness. The officer in the present condition views the dilemma as circumstances, rather than a situation
that possesses cues and patterns to its solution and does not command agency to engage and leverage intuitive decision-making.

i. ID:EAL Training Intervention. A training intervention that, if appropriate to the situation, may be used to improve officer decision-making through a "reflective practicum" as described by Schón (1987). This reflective practicum is intended to improve the students reflection-in-action and leverages feedback through "reciprocal reflection-in-action" (p. xii) between the instructor and student. The ID:EAL model is intended to provide law enforcement officers with improved understanding of how they perceive, reflect, and learn from experiences employing intuitive decision-making, and endeavors to advance the use of intuitive decision-making to successfully resolve inchoate, emergent situations through the officer's agency to engage and leverage intuitive decision-making. Training intervention in the context of the ID:EAL model is advanced as an accelerating force to move the law enforcement officer from a reactionary position, suggested above as the present condition, to a position of engagement and agency to leverage intuitive decision-making.

j. Figure 4.0, b. ID:EAL Training Intervention, illustrates the concept of the law enforcement officer as possessing the agency to engage the situation and recognize cues and patterns to leverage intuitive decision-making. As the officer progresses in the trust and use of these skills, the officer shifts the balance from reactionary presence to active agency through engagement in the situation and leveraging of intuitive decision-making. Restated, the law enforcement officer arrives on scene and takes affirmative actions based upon the cues and patterns
provided by the totality of the situation. The officer intuitively knows the situational appropriate (not right or wrong) decisions to make and the actions to be taken that will lead to the resolution of the situation. This training provides the officer with the awareness and recognition of how decisions are actually made under inchoate, emergent circumstances – i.e. without comparison of feasible options – and how to leverage this understanding through feedback and reflection.

k. ID:EAL Understanding. In the proposed desired condition, the reactionary response to isolated emerging crises of circumstances through the leveraging of experience (present condition) has been surpassed with the intervention of training on the ID:EAL model to develop the law enforcement officer’s agency to actively engage the situation and to leverage intuitive decision-making. The officer continues to expand the catalog of recognizable cues and patterns from experiential learning through feedback and reflection of intuitive decisions.

l. Figure 4.0, c. ID:EAL Understanding, illustrates the proposed desired condition in which the officer’s use of intuition is a balance of engagement with the situation, agency making intuitive decisions, and the use of feedback and reflection as leverage to successfully resolve inchoate, emergent circumstances.

XIII. Conclusion

a. A number of studies on police shooting policies have led researchers to conclude that it is in the best interest of police administrators to move toward more conservative use of force policies (Boutwell, 1982; Chapman, 1982; Fyfe, 1982a, 1982b; Geller, 1982; Geller & Karales, 1981, 1982; Lingren, 1981; Reiss, 1980; Sherman, 1982) and the Police Executive Research forum “has called for greater
restraint from officers and slower, better decision-making" (Apuzzo, 2015, August 1).

b. The chief of police is “ultimately responsible for the discipline and control of all subordinate personnel” (More, Wegener, & Miller, 2003, p. 365) but they are often unaware of best practices or what their officers are actually being taught; specifically, in the context of use of force training (Apuzzo, 2015, August 1).

c. The research on police use of force “tends to focus on four general areas: the frequency of occurrence, race, policies, and police education” (McElvain & Kposowa, 2008, p. 506) and not on the critical element of the officer’s decision-making process.

PLEASE SEE REFERENCES ABOVE - NOT DUPLICATED IN THIS APPENDIX