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I, Gabrielle T. Isaza, hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Criminal Justice.

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Examining the Impact of De-escalation Training on Police Officer Attitudes: A Pilot Evaluation

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Examining the Impact of De-escalation Training on Police Officer Attitudes: A Pilot Evaluation

A Dissertation Submitted to the Graduate School of the University of Cincinnati

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ABSTRACT

De-escalation training has been widely promoted as a best practice to reduce harms during police-citizen encounters, particularly as it relates to police use of force. Despite this wide promotion, very little is known about the training's effectiveness. This dissertation explores the impacts of a well-known de-escalation training, *Integrating Communications, Assessment, and Tactics (ICAT)*, on a sample of police officers in Southwest Ohio. Specifically, this dissertation examines changes in officer attitudes and perceptions as well as self-reported use of the training using T-Test comparisons, ordinary least square regressions, descriptive statistics, and an examination of focus group discussions. Pilot survey instruments were developed and tested for use in future de-escalation training evaluations. This study found significant changes in officer attitudes related to the use of force, understanding of persons in crisis, and officer confidence in handling critical incidents in the hypothesized directions. However, minor levels of training decay were detected, indicating the importance of continual reinforcement of the training curriculum. Additionally, counter-intuitive findings related to one component of the training were found. Nonetheless, these empirical results demonstrated that ICAT training influenced officers in a way that made them more amenable to the principles and practices of de-escalation. This study adds to the very limited evidence base on de-escalation training effects for police. These findings are critical because the effective use of de-escalation techniques to diffuse conflicts can save lives and reduce the injuries of both citizens and police officers.

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CHAPTER 1: INTRODUCTION

> "There is no other job like a police officer's, that requires someone to deliberately go out and actively search for dangerous situations where their life or someone else's life may be threatened."
>
> -Artwohl and Christensen (1997, p. 36)

1. Background

The authority to use force during the line of duty is a defining aspect of police work, yet it is also one of its most controversial aspects. High profile police-involved deaths of citizens, predominantly Black citizens, has brought greater attention to the chasms between law enforcement and the communities they serve. Incidents including the deaths of Michael Brown (Ferguson, Missouri, 2014), Tamir Rice (Cleveland, Ohio, 2014) Eric Garner (New York, New York, 2014), Walter Scott (North Charleston, South Carolina, 2015), and Samuel DuBose (Cincinnati, Ohio, 2015) among others have led to accusations of police excessive use of force, racism, and overall unfair treatment of citizens by law enforcement. While these accusations are not entirely new (e.g., consider the riots during the 1990s related to the death of Rodney King in Los Angeles), they have come to the recent forefront of discussions on critical issues in policing. In addition to the concerns about unfair treatment of minority citizens, police are also routinely criticized regarding the appropriate treatment of and force used against individuals with mental health or intellectual disabilities (Engel, 2015). Criticisms toward the use of force, warranted or unwarranted, create enormous challenges to the legitimacy of police (Engel and Smith, 2009).

Facing scrutiny from communities, particularly communities of color, police agencies are searching for policies, training, equipment, and techniques that can make police-citizen encounters safer, more equitable, and more effective for all parties involved. The *Final Report of*

the President's Task Force on 21st Century Policing (2015) recommended the use of de-escalation training as a mechanism for improvement. Furthering this sentiment, Walker (2018) describes the "New Conversion" in policing, whereby a "rough consensus" has been reached by law enforcement to enhance accountability in police reform, including a consensus towards promoting de-escalation. Proponents of de-escalation argue that this technique will reduce the rate at which police use force by providing officers with better skills to resolve conflict without the use of force, particularly during highly confrontational situations (Olivia, Morgan, & Compton, 2010). Indeed, de-escalation is not a new concept and has been embedded in police curriculum in a myriad of ways. For instance, Flosi (2016) noted that for several years, most officers have received some form of de-escalation training, including methods to improve communication skills, using space and slowing encounters down when appropriate, as well as Crisis Intervention Team (CIT) training.

Notably, there are some substantial barriers to implementing de-escalation training. First and foremost is variation in state-mandated training, which provides agencies discretion in whether or not to implement de-escalation training. For example, 34 of 50 US states do not require de-escalation training for all officers (Gilbert, 2017). While many mid-size and large police departments may elect to train officers in de-escalation, this training is unlikely to be adopted by many small agencies unless mandated by the state, because many small agencies do not have a public safety budget large enough to train officers in non-mandated training. Roughly half (48%) of all US law enforcement agencies employ 10 or fewer officers (Hyland and Davis, 2019). Therefore, it is unlikely that most agencies in the US will soon implement de-escalation training. Relatedly, cost is a general barrier—this form of training may require up to several days, and that cost becomes rather significant when considering an entire agency. The financial

cost for implementing de-escalation training is an important consideration for police executives balancing limited resources, especially given its lack of scientific evidence. This consideration is even more salient for small police agencies. And, even when implemented, there is wide variation in the types of de-escalation training offered to police (Todak and White, 2019). This is important because variation in training makes the generalization of evaluations difficult.

Finally, a substantial barrier to implementing de-escalation is the criticism it has received in the field of law enforcement. Some perceive that de-escalation poses serious risks to officer safety, given that many tactics in de-escalation are counter-intuitive to more traditional police tactics and even to the culture of policing (Blake, 2017; Jackman, 2016; Williams, 2015). Rooted within policing is the heavily emphasized concept that, above all else, it is most important that an officer goes home safely (Stoughton, 2014). Many traditionally taught tactics center around this concept. For example, the"21-foot-rule", a wide-spread policing tactic taught in many training academies, emphasized that officers should use force if any knife-wielding citizen entered into this prescribed zone of safety (Fyfe, 2000). While this tactic has met significant criticism, it is still used today as a justification for the use of force when an officer feels their safety is threatened (PERF, 2015).

Critics stress that de-escalation requires officers to focus too much on "slowing down" and considering all of their options, which may cause some officers to hesitate and make themselves more susceptible to injury from the citizen they are encountering. Take, for instance, the following police-citizen encounter in Lincoln, Nebraska in 2018. Officers attempted to de-escalate a situation where a suicidal man was armed with a knife. The citizen was able to stab one of the officers with a knife, and a second officer shot the citizen but also inadvertently shot his fellow officer (Keene, 2018). Law enforcement officers often see footage of other officers

being injured or even killed after a moment of inattention or hesitation (Stoughton, 2014). Furthermore, some argue that these skills can only work if a citizen they have encountered is willing to de-escalate (Jackman, 2016). Collective state mandates, training costs (without evidence as to its effectiveness), and concerns regarding officer safety, provide significant barriers before de-escalation training will be fully embraced and embedded within policing.

2. Research Problem

Training is a primary mechanism for reform in law enforcement and as such presents a crucial area for evidence and understanding. However, police training is rarely subject to scientific evaluation. While many training programs rely on an existing conceptual and theoretical basis, very few have an empirical basis. The lack of scientific evidence supporting police training has been pointed out in scholarly research for decades (see Buchanan & Perry, 1985; National Research Council, 2004; Winebrenner, 1976), yet little progress has been made (Skogan, Van Craen, Hennessy, 2015). De-escalation training for law enforcement is no exception.

A recently released systematic review identified 64 de-escalation training evaluations across a multi-disciplinary scan of the literature—however, none were identified in the field of law enforcement (Engel, McManus, & Herold, 2020a). The available literature from other disciplines demonstrated generally favorable evidence for the effectiveness of de-escalation training, conversely, the scientific rigor of these studies was not especially strong. There does appear to be promising anecdotal evidence for the effectiveness of de-escalation training in policing, but there is no systematic, empirical evidence available. In the absence of evidence regarding the effectiveness of de-escalation, there is growing concern regarding the possibility of increasing the risk of officer and citizen injuries with these types of training (Jackman, 2016). As

noted previously, it is possible that training on the use of force can make things worse compared to no training at all (Fyfe, 2000). This is a critical concern during police-citizen encounters, which can quickly escalate into life and death situations. However, if de-escalation training can be implemented effectively, there is a substantial possibility to reduce the likelihood of injury for both citizens and officers. Therefore, it is critical to better understand the impact of de-escalation training using a law enforcement sample.

Indeed, the Police Executive Research Forum (PERF) recognized this potential to increase safety during citizen and police encounters. They released the *Guiding Principles on Use of Force* in early 2016, which contained 30 principles to enhance police use of force, along with several strategies designed to enhance the policing profession. These recommendations included de-escalation techniques and crisis intervention teams, as well as the overarching ideal on the sanctity of *all* human life (PERF, 2016a). This report called for the discontinuation of several traditional policing tactics, such as use-of-force continuums, the "21-foot rule", and the traditional police emphasis on resolving incidents quickly. Interestingly, this report was met with strong criticism from within the law enforcement field, which has traditionally expressed the sanctity of officer life above all else. These concerns led to the International Association of Chiefs of Police and the Fraternal Order of Police Union signing a denunciation of PERF'S *Guiding Principles* (Jackman, 2016; Williams, 2015). Ultimately, PERF released a new training to assist agencies with carrying out the principles contained in their G*uiding Principles* report. This training was the *Integrating Communications, Assessment, and, Tactics* (ICAT) training program (PERF, 2016b), and is the subject of this research study.

Specifically, this dissertation seeks to answer questions regarding the utility and effectiveness of PERF's new use-of-force training. The ICAT training program focuses on the

use of de-escalation tactics, communication, and thinking skills designed to avoid injuries to both officers and citizens (PERF, 2016b). This training is specifically designed for first-line patrol officers responding to particular critical situations, primarily those in which a person is behaving erratically or within a limited capacity, and is either unarmed or armed with any weapon lesser than a firearm. It was pilot tested with six agencies in late 2016, and has now been implemented in several police agencies across the United States (Lovicott, 2018; PERF 2016b; Skoufalos, 2017). The training is designed to provide officers with a wider array of options to slow down situations to avoid the need for use of force. Not only does it introduce new tactical and communication approaches, but ICAT also relies on the Critical Decision-Making Model designed to provide context to officer decision-making. Though ICAT teaches skills for critical incidents, the skills are also meant to be used broadly during every day, ordinary encounters with citizens (PERF, 2016b).

This dissertation studies the impact of ICAT training with the University of Cincinnati Police Division (UCPD). The UCPD was required to implement new training and policies as part of their three-year voluntary Monitorship, the result of a controversial officer-involved shooting in July of 2015. As part of this reform process, the UCPD was required to update its use-of-force policies, procedures, and training, which ultimately lead to UCPD's adoption of de-escalation training and tactics in 2018 (Isaza, Engel, & Corsaro, 2020). Specifically, the UCPD chose to adopt and implement ICAT training.

Although the ICAT training model was introduced in 2016, it has yet to be scientifically evaluated. To that end, this research is the first to scientifically evaluate the ICAT model by using a pilot study conducted at the University of Cincinnati Police Division (UCPD), located in Cincinnati, Ohio. This dissertation is part of a larger research project conducted at the University

of Cincinnati to better understand the influence of de-escalation training on police. Survey instruments were developed for this project based on the best available literature and administered to a law enforcement sample. This research relies on the use of a repeated measures research design, where three waves of survey data are used to assess changes in officer attitudes, perceptions, and confidence in a sample of police officers. Collected data includes pre-training, post-training, and four-month follow-up training surveys for an entire agency (62 sworn officers; includes all officers except for the Chief of Police) between May 2018 and February 2019. Factor analysis is used to better understand the underlying attitude, perception, and confidence constructs that are impacted by de-escalation training. Statistical comparisons are used to assess meaningful changes across the waves of data in matched officer responses and to better understand the relationship amongst the variables under analysis. Additionally, officer self-reported use of ICAT skills (via UCPD contact cards) during citizen encounters are analyzed, providing additional measures around ICAT skill use. Finally, focus groups with UCPD officers were conducted to provide additional context around the quantitative findings for this research.

Overall this study describes in great detail the impacts of the ICAT training program on attitudes, perceptions, and confidence of officers in a mid-size law enforcement agency. Given that this is the first study of its kind, it has important implications for future use of force and de-escalation training. An additional, important contribution of this research is the development and pilot testing of data collection instruments for evaluating de-escalation training. The results of this study will be used to refine the instruments for future use. In summary, this research contributes significantly to the general knowledge base regarding police training and effectiveness.

3. Dissertation Overview

As noted above, this study is one of the first to empirically evaluate the impact of de-escalation training on surveyed officer attitudes, perceptions, and confidence. Each of these areas is important to examine because they tap into different aspects of officer cognition. Attitudes consider the favorability towards an attitude object, while perceptions consider the individual's interpretation of information (Berger & Mitchell, 1989). In turn, confidence refers to a person's belief in their ability to perform tasks related to a particular circumstance (Bandura, 1977).

Specifically, this study evaluates the impact of ICAT training on officer attitudes, perceptions, and confidence, through a pilot evaluation conducted within a mid-size police department. Following this introductory chapter, this dissertation provides an extensive review of the literature upon which this research is based. Chapter 2 begins with an introduction of the issues related to use of force in policing and reviews the movement towards de-escalation training, followed by a thorough review of the topics of police use of force, de-escalation, and police use-of-force training. Chapter 3 provides an overview of the psychological frameworks that describe the relationship between attitudes and corresponding behavior. Due to the nature of this research (surveys of officer attitudes, perceptions, and confidence), it is important to consider what, if any, effect a change of behavior would correspond to a change in overt behaviors by officers. Chapter 3 also reviews three well-known decision-making models and discusses some of the major impairments to decision-making during police work.

Chapter 4 details the core methodology of this research study, including the research questions, study sample, instruments, data, and analytic strategies. Chapter 5 contains survey-related findings of the research, including a description of the sample and baseline attitudinal measures, officer reactions to the ICAT training, including their reactions to the CDM, and the

immediate and longer-term training impacts on officer attitudes related to use of force, citizen interactions, and persons in crisis. Chapter 6 examines officers' self-reported confidence handling critical incidents, officers self-reported use of ICAT skills in the field, and focus group findings. Finally, Chapter 7 provides the following, (1) a summary of the research findings, (2) a discussion of their implications and recommendations for agencies adopting ICAT training, (3) a description of the research limitations, and (4) recommendations for future research.

The research project described in this dissertation has the potential to greatly contribute to the very limited understanding surrounding the impacts of de-escalation training for police. This is a worthwhile endeavor because de-escalation training has been widely promoted, but there is little evidence as to its effects on the policing profession (Engel et al., 2020a). There is an unequivocal need for this research—if de-escalation training can be effective in increasing officers' abilities to diffuse conflict, injury and violence can be prevented during police-citizen encounters. Police training which reduces injury and violence will save lives. Providing knowledge on effective de-escalation training would be a critical enhancement to the current challenges to legitimacy faced by police.

CHAPTER 2: POLICE USE OF FORCE AND DE-ESCALATION

1. Introduction

Encounters between police and citizens have long been a topic of national debate. Issues related to fair treatment for racial minorities, excessive police use of force, and police handling of populations with mental health and/or intellectual disabilities often permeate these discussions. Within the past few years, controversial police-involved citizen fatalities, often involving un-armed and/or minority citizens, have reinvigorated discussions about police use of force and potential mitigating strategies. Several scholars have identified this emerging crisis, with Walker (2018) dubbing it a "National Police Crisis", which has led to a "new conversation" about policing (also see Engel et al., 2020a; Sherman, 2018; Walker, 2018; Zimring, 2017).

On the other side of the spectrum is a renewed focus on officer safety, with increased awareness due to recent ambush-style attacks (Craven, 2017). Despite overall reductions in the officer line-of-duty assaults, injuries, and deaths over the last twenty years, the number of officers injured or killed through ambush-style attacks has increased in the last ten years, reaching its peak in 2016 (FBI, 2019). Relatedly, the subject of "suicide by cop" attacks has re-emerged, causing real concern for police executives across the nation. Researchers estimate that between 10 to 29 percent of officer-involved shootings involve 'suicide by cop' intentions (Patton & Fremouw, 2016). PERF recently released training protocol to address this form of police-aimed violence, and it was a topic of considerable influence at the 2019 annual meeting of the International Association of Chiefs of Police (Jackman, 2019; PERF, 2019).

Despite ongoing discussions at the national level, police executives must still immediately provide their officers with the best tools and training possible so their officers are

situated to make difficult decisions during police-citizen encounters. Force cannot be eliminated, but it can be "optimized" (Fridell & Pate, 1997). To achieve this goal, Fridell (2010) argues that agencies must adopt sound policies to which officers are held accountable, while providing officers with the appropriate training to ensure officers have the knowledge and skills to make decisions in accordance with the agency's mission, vision, and values.

Overall, the mission in policing today is to make encounters safer for both citizens and police officers. De-escalation is one form of training that is recommended for this purpose (IACP, 2017; PERF, 2016a; President's Task Force, 2015). While understanding how de-escalation training works is important, agencies will also need to consider how best to create policies and create accountability for the use of de-escalation. Training without the appropriate corresponding policies and accountability structures will not result in the reform needed to make changes at the street-level. This involves creating evidence-based methods to measure de-escalation use and understand what (if anything) inhibits officers from using these skills effectively.

The remainder of this chapter is divided into three sections. First, the literature regarding police use of force is reviewed, including defining the use of force and exploring the correlates associated with its use. Thereafter, a discussion of de-escalation, its origins, and the need for an evidence-based definition is presented. The chapter concludes with a discussion of the empirical evidence base for police training, including training programs for procedural justice, crisis intervention teams, and de-escalation.

2. Police Use of Force

As part of an officer's daily duties, he or she is likely to interact with citizens for a variety of reasons. Unsurprisingly, a small portion of these encounters will result in the officers' use of force. Indeed, one of the distinguishing characteristics of the police is their state- or federally-mandated authority to use force against citizens to enforce the law (Bittner, 1970). This defining role impacts every aspect of police work but has recently become a growing concern, particularly when considering officer-involved shootings and the "National Police Crisis" of late (Walker, 2018).

Estimates on the prevalence of police use of force vary widely, depending on the data and how force is operationalized (Garner et al., 2002; Hickman, Piquero, & Garner, 2008). Estimates indicate the overall prevalence of use of force during all citizen interactions is fairly low—between one and five percent of all police-citizen encounters result in the use of force (Davis, Whyde & Langton, 2018; Friedrich, 1980; Garner, Hickman, Malega & Maxwell, 2018). For instance, a recent Bureau of Justice Statistics report states that 2% of all individuals who have come into contact with the police experience force or threats of force (Davis et al., 2018). In contrast, others estimate force can be more frequent, particularly when considering arrest incidents. Hickman and colleagues (2008) estimate that force occurs in 20 percent of all arrests. Other studies have estimated the rate of non-lethal force to be as high as 30% when considering arrest situations (Leinfelt, 2005). It is important to consider that estimates on the use of force will vary significantly according to the type of encounter. Despite varying estimates, there is substantial evidence to support that when force is employed, the severity is low (Torres, 2018). Indeed, the most common form of police use of force is weaponless physical force (i.e., pushing or striking, typically to bring a citizen to the ground). Research has found that physical force

alone is typically sufficiently "effective" in that this type of force brings the encounter to an end, without having to resort to higher levels of force (Stronshine and Brandl, 2019). While this type of force is effective, it is also associated with a higher likelihood of both officer and civilian injury (Hine, Porter, Westera, & Alpert, 2018). Therefore, officers will have to consider their willingness to risk injury when using these forms of force compared to their other options.

However, these are all general estimates because knowledge collected at the national level is not available (Nix et al., 2017). Rather, the best available national datasets for police use of force have been developed by *The Washington Post* and *The Guardian* (Engel et al., 2020a). Both newspapers have made this data publicly available, allowing researchers the opportunity to analyze police-involved uses of force (and civilian deaths) more systematically. It is difficult to compare rates of force across racial and ethnic groups to the overall population estimates because these comparisons do not account for the factors that most strongly predict police use of force.

Considering when officers can and cannot legally use force, two Supreme Court cases govern the standards for justified officer use of force in the US: *Tennessee v. Garner* (1985) and *Graham v. Connor* (1989). The decision made in *Tennessee v. Garner* (1985) held that officers may not use deadly force on a fleeing citizen—rather, an officer may only use deadly force when the officer has reason to believe that the citizen poses a significant threat of physical injury to the officer or others. Due to this holding, many agencies have policies that rely on "defense of life" as a rationale for using deadly force (Olson, 1998). The decision upheld in *Graham v. Connor* (1989) provides the standard for "objective reasonableness" for claims of excessive force under the Fourth Amendment. The court must consider the totality of the circumstances, such as the severity of the crime in question, whether the citizen was resisting arrest, and the safety threat posed by the citizen. Both of these cases dictate the situations where officer use of force is

lawfully justified, but critics argue alternatives may still be used to resolve these situations with less-lethal options (Abanou, 2018; Kaste, 2019).

For instance, PERF has argued that police executives should hold their agency to a higher standard than what is lawfully justified according to *Graham v. Conner*. Specifically, they contend that agencies should adopt policies which make it clear that de-escalation is the preferred approach during most critical incidents, and that they should discontinue the use of certain outdated tactics to handle difficult situations, even if they are legally allowed (PERF, 2016a). However, the *National Consensus Policy on Use of Force* did not indicate that agencies were required to go beyond these lawful standards (IACP, 2017). There is still some debate as to the use-of-force standards policing professionals should strive towards.

In summation, decades of research have been dedicated to better understanding police use of force. This section of the literature review will discuss (1) definitions for force and (2) the known correlates of use of force. The known correlates of force are broken down into 4 distinct levels of predictors: (1) individual, (2) situational, (3) organizational, and (4) ecological.

a) Defining Use of Force

As described by well-known police scholar Egon Bittner (1970), the defining aspect of modern police is their authority to use force to compel citizens to obey the law. This defining quality has launched decades of inquiry into what exactly is police use of force, how prevalent is its use, and what are its predicting factors. Use of force can be defined and operationalized in a myriad of ways, and there is no standard methodology for measuring force (Adams, 2010).

Most often, use of force is defined as "acts that threaten or inflict physical harm on suspects" (Garner, Schade, Hepburn, & Buchanan, 1995). This comprehensive definition has

been widely accepted in the scholarly literature (Klahm & Tillyer, 2010). In contrast, the International Association of Chiefs of Police (IACP) developed a working definition for use of force that better reflects the realities of street-level law enforcement, defining force as "the amount of force required by police to compel compliance by an unwilling subject" (Henriquez, 1999, p. 1). This can range from verbal commands to the use of weapons to compel compliance. Other research studies do not necessarily define force, rather they operationalize it into measurable behaviors, such as those recorded by police agency use of force reports. Some studies operationalize handcuffing as a form of force (Terrill & Mastrofski, 2002; Todak & James, 2018), some include verbal threats (Crawford & Burns, 1998; Paoline & Terrill, 2004; Smith, 1986), yet others operationalize it as the physical force from an officer (Lundstrom & Mullan, 1987). It is vital that when comparing findings across research studies, one must be cognizant of how different measurements and methods can influence these differences.

b) Correlates of Force

A frequently applied perspective to understanding police behavior is that police-citizen encounters are dynamic, and can evolve based on who the citizen is, and what the citizen does (Alpert, Dunham, Stroshine, Bennett & MacDonald, 2004; Binder & Scharf, 1980; Worden, 1995). Because these situations are dynamic, it is reasonable to hypothesize that several multi-level factors can influence officer behavior, including the use of force. Decades of research by policing scholars have sought to provide a better understanding of when and how police use force. Over this long duration of inquiry, a substantial amount of research has accumulated, attempting to predict the circumstances under which force occurs.

The methodology used to understand predictors of police use of force has become more advanced over time. Early research focused on bivariate relationships between predicting

variables (e.g. citizens' actions) and the use of force (as a dichotomous variable—yes or no). As more variables became significant predictors, scholars used multivariate analyses to account for the different contributions of each predictor. More recently, statistical comparisons became more advanced, and scholars moved towards the use of hierarchical linear models to account for the varying levels of predictor variables (e.g., individual-level and neighborhood-level within the same model). Additionally, scholars spent more time understanding levels of severity of force as opposed to simply whether or not force was used. How force and predictor variables are measured are critical to understanding how and when police use force.

Another important consideration for placing police use of force into context is the use of benchmarking. Benchmarking is the practice of creating a comparison for what should be "expected", typically according to measures of racial and ethnic compositions. However, benchmarks created by available data (typically Census data) are often inappropriate and misinterpreted (Engel, Calnon, & Bernard, 2002; Engel & Calnon, 2004). This is because benchmarks cannot adequately measure all of the risk factors for those who are at risk of being the subject of force used by police to create an appropriate comparison of individuals who are similarly situated. Overall, more research is needed to better use benchmarks to understand race-based or other differences in police use of force.

The correlates, or predictors, of use of force are generally categorized into four groups: individual (characteristics of the citizen and the officer), situational (characteristics of the incident), organizational (characteristics of an officers' agency), and ecological (characteristics of the environment) (Riksheim & Chermak, 1993; Sherman, 1980). These four categories of predictor characteristics are described in greater detail below.

1. Individual

There are characteristics of both the citizens and officers involved in an encounter that influence the likelihood that force is used. Most reviews show inconsistent findings across studies. Overall, the influence of citizen characteristics tends to be mixed and the influence of officer characteristics tends to be weak or non-significant predictors of use of force. However, there is a handful that appears to be consistent predictors. For instance, one of the most well-established individual-level predictors is that if the citizen is male, an officer is more likely to use force (compared to female citizens) and more likely to use more severe forms of force (Garner et al., 2002; Gau et al., 2009; Kaminski et al., 2004; Terrill & Mastrofski, 2002). Although there are also studies finding mixed results (Crawford & Burns, 1998; Terrill, 2005) or no relationship at all (Engel et al., 2000; Lawton, 2000), the majority of studies find a positive relationship between these two variables. Younger citizens are also more likely to be recipients of force, although this relationship is weaker than the citizen-gender-use-of-force relationship (Crawford & Burns, 1998; Hickman et al., 2008; Terrill & Mastrofski, 2002). These findings are aligned with the well-documented fact that young citizens and male citizens make up a larger proportion of police contacts, compared to those that are older or female (Davis, Whyde, & Langton, 2018).

A third citizen characteristic that is a fairly consistent predictor is the citizens' demeanor on officers' use of force. At least 50 studies have examined the impact of citizens' demeanor in police decision-making (Engel et al., 2012). Most of these studies find that more disrespectful citizens are more likely to experience force, and more likely to experience more severe forms of force (Engel et al., 2000; James et al., 2017; Sun & Payne, 2004). Indeed, Engel and colleagues (2012) reviewed this topic in-depth, determining that there was some variation in the impact of

citizen demeanor as it relates to use of force. Despite this variation, it appears that a larger number of studies point to a positive and significant relationship between a disrespectful demeanor and use of force (Crawford & Burns, 1998; Engel et al., 2000; Garner, Maxwell, & Heraux, 2002; James et al., 2017; Sun & Payne, 2004), but a small number still find no relationship (Paoline & Terrill, 2004, 2007; Terrill & Mastrofski, 2002). It is also possible that citizen demeanor effects are only significant for some types of force, but not for others (Klahm & Tillyer, 2010). Explaining why citizen demeanor may impact use of force, Nix and colleagues (2017) reason that officers may perceive disrespectful citizens to be greater threats to safety. Notably, citizen demeanor is difficult to capture accurately—this characteristic is dynamic and can change through the course of an encounter between an officer and citizen, particularly as an officers' demeanor or behavior changes (Dunham & Alpert, 2009; Reisig et al., 2004). Therefore it is difficult to determine whether effects, or lack of effects, from citizen demeanor are a result of measurement error.

In contrast to the citizen characteristics described so far, the impact of other citizen characteristics is more inconsistent. Notably, studies often examine the impact of citizen race, a particularly salient issue when considering the history of police and racial minorities in the United States. Research has continually demonstrated that minorities are stopped and interact with the police at a higher rate than their White counterparts. While this evidence is mixed, several studies have determined that citizen race is unrelated to whether or not an officer used force during an encounter (Brandl & Stroshine, 2017; Engel et al., 2000; Jennings et al., 2019; Lawton, 2007; McCluskey et al., 2005; McCluskey & Terrill, 2005; Morabito & Doerner, 1997; Phillips & Smith, 2000; Sun & Payne, 2004). Terrill (2005) studied behavioral sequences between citizens and officers and found that the citizen race did not impact whether officers

skipped steps in the continuum or influenced the severity of force used during an encounter. Examining officer-involved shootings specifically, the form of force which has sparked the greatest amount of public controversy, Jennings and colleagues (2019) found that citizen race was unrelated to predicting whether an officer-involved shooting resulted in death rather than citizen injury. Other research has found mixed results—for example, Gau and colleagues (2009) found a statistically significant increase in use of force on Hispanic citizens compared to White citizens, but no statistical difference for Black citizens. Lawton (2007) proposed that racial differences are more likely to occur with lower levels of force, due to the officers' higher level of discretion at this point. However, other research contradicts this suggestion, finding racial disparities in force at higher ends of the force spectrum, such as drawing a firearm (Kramer & Remster, 2018; Fridell & Lim, 2016). Oftentimes, when a positive relationship is found between minority citizens and use of force, the size of these effects is often small, particularly when compared to the impact of other predictor variables like citizen resistance (Bolger, 2015; Kramer & Remster, 2018). Overall, considering a variety of study designs that consider different types of force, there does not appear to be a consistent relationship between citizen race and use of force.

Citizen impairment, through the use of drugs or alcohol, appears to have a generally inconsistent relationship with officer use of force. Some studies find that drug or alcohol use is positively correlated with police use of force during an encounter (Engel et al., 2000; Kaminski et al., 2004; Lawton, 2007), while others found no significant relationship (Rossler & Terrill, 2017; Stroshine & Brandl, 2019) or mixed findings depending on the type of force (Crawford & Burns, 1998).

Important to the consideration of handling persons going through crisis, as is a goal of the ICAT training program, is the influence of citizen behavioral and mental health issues on use of

force. Studies have demonstrated that there is a positive and significant statistical relationship between citizen mental illness and officer use of force (Brandl & Stroshine, 2017; Lawton, 2007; Rossler & Terrill, 2017). But, others find a negative relationship (Gill, Jensen, & Cave, 2018) or no statistically significant relationship at all (Terrill & Mastrofski, 2002). Other researchers have noted that once stronger predictors are included in use of force models, such as resistance and possession of a weapon, citizens with a mental illness no longer had an increased likelihood of experiencing force (Johnson, 2011). However, Morabito and Socia (2015) found that use-of-force encounters with citizens with mental illness were also significantly more likely to involve citizen resistance (74 percent) compared to citizens who were not mentally ill (47 percent). Furthermore, Morabito and colleagues (2017) suggest that a combination of citizen mental illness and substance abuse may be a stronger predictor for experience force than considering each of these alone, making this a more salient issue for understanding citizen influences on use of force. It appears that mental illness or substance abuse alone is not enough to influence the likelihood or severity of use of force, but a better understanding is still needed.

Most individual-level officer characteristics are rather weak predictors of officer use of force. Similar to the amount of inquiry into the study of citizen characteristics, a large body of research has considered the influence of officer traits. In general, officer race and gender do not have a consistent relationship with predicting use of force during an encounter (see Bolger, 2015 for review). There is modest support to the influence of officer education on use of force, with studies finding that higher levels of education are associated with a lower likelihood of using force (Paoline & Terrill, 2007). This is an important association to better understand, given that the *Final Report of the President's Task Force on 21st Century Policing* (2015) proposes to enhance the field of policing by increasing officer education, supposing that this will provide

officers with better decision-making skills and ultimately make them better officers (also see, Worden, 1990). In a similar vein, officers with more experience are typically less likely to use force compared to officers with less experience (Kop & Euwema, 2001; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002) though several studies have also found no relationship (Lawton, 2007; McCluskey et al., 2005; Sun and Payne, 2004; Terrill et al., 2008). Other studies have found a mixed influence of officer experience on different types of force, indicating that this relationship is still unclear and may be dependent on how studies and measures are carried out (Klahm & Tillyer, 2010).

2. Situational

The immediate situation in which officers and citizens interact provides several characteristics that may predict the use of, as well as the severity of, force by police. This includes both the legal (i.e., citizen resisting, presence of a weapon, etc.) and extra-legal (i.e., citizen race, demeanor, etc.) factors related to the encounter. This body of research is based on a variety of research designs and measures force in different ways. While studies vary in some aspects, they come to a similar conclusion: the single strongest predictor of the use of force is civilians' resistance during an encounter with police (i.e., Fridell & Lim, 2016; Gau, Mosher, & Pratt, 2010; Lawton, 2007; Stroshine & Brandl, 2019; Terrill & Mastrofski, 2002). Indeed, Terrill and Mastrofksi (2002) were amongst some of the first to conclude an officer's decision to use force was largely dependent on the situational characteristics of the encounter: if a citizen resisted or presented threats to safety. This has been found in other studies which use citizen resistance as an explanatory variable, and will even reduce the significance of other explanatory variables, such as citizen race, once it is considered in a model (Garner et al., 2002). More recently, Rossler and Terrill (2017) determined that citizens who were physically aggressive and

resistant were significantly more likely to experience more severe levels of force compared to citizens who were non-resistant. Stroshine and Brandl (2019) found that most force situations involve low levels of citizen resistance, which are typically met with low levels of force (i.e., use of physical force only, such as pushing, hitting). As citizens use more resistance, officers similarly increase their severity of force, such as the use of chemical spray or TASERs (Brandl & Stroshine, 2017).

Other situational predictors of officers' use of force include the presence of a weapon, incidents which involve arrest and/or pursuit of a citizen, and evidence of criminal behavior (especially violent crime). The presence of any of these three variables significantly increases the likelihood that an officer used force in that situation (Bolger, 2015; Garner et al., 2002). While few encounters typically involve an armed citizen (approximately 10 percent), Stroshine and Brandl (2019) found that when officers encounter armed citizens physical force alone is less effective when used by police. Rather, when citizens are armed with a weapon, officers are more likely to use greater levels of force to effectively take control of a situation (Brandl & Stroshine, 2017; Crawford & Burns, 1998). When citizens attempt to flee, and officers are subsequently forced to pursue on foot, officers are twice as likely to use physical force alone compared to force used on citizens who do not flee (Stroshine & Brandl, 2019). Finally, research has also demonstrated that when a citizen was involved in a violent crime, the odds of an officer using force is 2.4 times as high and the odds of an officer drawing a firearm is nearly 5 times as high (Kramer & Remster, 2018).

Some situational characteristics have a mixed influence on officer use and severity of force. For example, in a review of studies related to the presence of bystanders, one study found a positive relationship, three studies found mixed findings and eight studies found no significant

relationship at all (Klahm & Tillyer, 2010). This is also confounded when considering the type of force used. Crawford and Burns (1998) found that the presence of bystanders was positively associated with officers' use of physical restraints but unrelated to officers' use of chemical (OC) spray and other weapons. In contrast, Engel and colleagues (2000) found that police were more likely to use force when the number of bystanders increased.

The situational characteristic of the number of officers present has also found mixed results. Some studies find a positive relationship (Garner et al., 2002; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002), some find a negative relationship (Lawton, 2007) and some find no relationship at all (Engel et al., 2000; McCluskey, et al., 2005). Proactive contact is another common predictor variable to use of force—this considers if the officer initiated the contact with the citizen. Several research studies conducted during the 2000s identified a positive and significant relationship between proactive contact and use of force by an officer (McCluskey & Terrill, 2005; McCluskey et al., 2005; Paoline & Terrill, 2007; Terrill & Mastrofski, 2002). However, other studies reported an inconsistent relationship (Garner et al., 2002) between proactive contact and use of force, finding that it only mattered when the citizen was resistant compared to when the citizen was compliant. Later research concluded that there appears to be no statistically significant relationship between proactive citizen contact and use of force (Engel et al., 2000; Terrill et al., 2008).

3. Organizational

While factors at the individual- and situational-level are the first logical step to understanding use of force, organizational-level variables are also important. However, only a handful of studies have undertaken this endeavor (Nowaki, 2015). Given that agencies dictate how and when force can be used by officers through policy and training, it is logical that the

characteristics of a police agency would influence the likelihood of force. A few studies suggest that agencies with more restrictive use of force policies are correlated with lower levels of force (Nowaki, 2015; Tennenbaum, 1994; Terrill & Paoline, 2017; Uelman, 1973). White (2001) explored the impact of administrative policy in-depth with the Philadelphia Police Department, concluding that while a policy can help to control officer discretion in using deadly force, personal philosophies and policies of the chief can sometimes outweigh these impacts.

Limited research also suggests that agencies with a larger number of sworn officers are more likely to have greater uses of force (Nowacki, 2015; Willits & Nowacki, 2014). For instance, Nowaki (2015) found that larger departments are associated with more lethal force used by police. First-line supervisors may also have a nominal impact of officer use of force. The few studies that have considered first-line supervisors suggest that they can influence how officers perceive agency use of force policies (in terms of fairness) and the likelihood of using less-lethal force (Ingram, Weidner, Paoline, & Terrill, 2014; Lim & Lee, 2015; Van Craen & Skogan, 2017). Surprisingly, the amount of training at the police academy was not associated with officers' likelihood of force (Lee, Jang, Yum, Lim, & Tushaus, 2010). In sum, with a very limited amount of research on organizational influences, it is unclear what type of impact these factors have on the overall use of force by officers.

4. Ecological

The environment in which police-citizen interactions take place can influence the likelihood that force is used by police. Smith (1986) evaluated the impact of several neighborhood-level characteristics on police behavior, concluding that there is an interaction between police use of force and neighborhood context, indicating that both the individual and the neighborhood can influence the likelihood an officer uses force. Early research found that force

was more prevalent in primarily black or mixed-race neighborhoods, regardless of the specific race of the citizen (Smith, 1986). However, more recent research using more sophisticated models found that as racial and ethnic heterogeneity increased the frequency of use of force decreases, but the severity of force increases (Lautenschlager & Omori, 2019). Neighborhood crime levels are typically positively associated with higher rates of police use of force (Fyfe, 1980; Fridell & Lim, 2016; Lee et al., 2014; Terrill & Reisig, 2003). However, the neighborhood crime rate is also highly correlated with other community factors such as socioeconomic status, poverty, and unemployment. Other studies find very weak or non-significant predictors at the community-level for use of force, and some researchers suggest this inconsistency may be due to how characteristics are measured (Lee et al., 2014; Shjarback, 2018). Taken together, community characteristics are often weak or non-significant predictors of force after controlling for other variables.

In conclusion, there are several correlates of use of force at the individual, situational, organizational, and ecological levels. While research points to the significant strength of citizen resistance as a predictor variable, other correlations are not as straightforward. Inconsistencies may be explained in part by differences in operationalization and other methodological concerns about reported effects. Despite variation across findings, a meta-analysis of these different levels of correlates of force finds the strongest predictors for whether or not force is used during an encounter are situational factors and certain individual-level characteristics of the citizen involved; characteristics of the officer appear to have little effect (Bolger, 2015). Bolger (2015) still noted that all findings should be taken with caution, due to methodological limitations. It is always important for the consumer to remember that variations in research findings may be a

reflection of true differences across jurisdictions or a result of different methodological designs used to study the same concept (Fridell, 2017).

3. De-escalation Research

Several high-profile police use of force incidents against unarmed citizens have culminated in significant scrutiny surrounding police use of force. This scrutiny has led to national conversations on how and when police should use force, including the creation of a 2015 national task force to provide updates on how best to enhance the field of policing. The *President's Task Force on 21st Century Policing* was convened by assembling expert panels across the United States. They released a report in 2015 to promote best practices that simultaneously reduce crime while increasing public trust. One such recommendation was police adoption of de-escalation. A year later, a review of the empirical evidence behind many of the recommendations included in the task force report was conducted by Lum and colleagues (2016), finding that many of the best practices identified are not based on a strong body of science. Related to de-escalation specifically, the review found that most of the literature on de-escalation pertains to the specific use of these tactics on persons with mental illnesses or in crises, but there is no knowledge about how de-escalation can be used more generally by police in conventional situations (Lum et al., 2016; Olivia, Morgan, & Compton, 2010).

In line with the President's Task Force, the *National Consensus Policy on Use of Force* recommends that officers use de-escalation techniques whenever they have the opportunity, before resorting to force (International Association of Chiefs of Police, 2017). Several police agencies have moved towards the adoption of de-escalation principles to reduce the rates and severity with which police use force during citizen encounters. Indeed, CBS News recently surveyed 155 police departments by contacting the police department within the three largest

cities in each of the 50 states. They achieved a 70% response rate and found that all responding agencies indicated they offered some form of de-escalation training to at least some officers (CBS News, 2019). An officer's ability to de-escalate and diffuse conflict may be a vital method for increasing both officer and civilian safety. Given that a substantial percentage of fatal encounters with the police involve individuals who do not possess a firearm (44% of encounters), scholars argue changes to police use of force could reduce these "avoidable" fatal police shootings substantially (Sherman, 2018; Zimring, 2017).

Research from other fields suggests that practitioners who often deal with citizen conflict while performing their job many naturally adopt strategies that reduce citizen conflict, such as violence de-escalation (Janssen & Van de Vliert, 1996). Nurses have been found to naturally adapt these skills as they accumulate experience (Paterson, Leadbetter, & McComish, 1997). Also, some practitioners are specifically taught to verbally engage with disruptive patients to be collaborative and de-escalate the situation (Richmond et al., 2012). It stands to reason that a combination of training and experience leads to greater use of these skills.

While de-escalation training has received a lot of attention, it remains largely unstudied. A recent systematic review considered what is known about de-escalation training across scholarly disciplines. Engel and colleagues (2020a) identified 64 studies between 1976 and 2016 that included de-escalation training as the primary focus of the evaluated training. They found that majority were in the field of Nursing and Psychiatry, with zero included in the field of criminal justice or criminology. Engel and colleagues coded these studies according to their favorability of conclusions across a series of outcomes, including knowledge, attitudes, perceptions of safety and behavioral outcomes, among others. They concluded that while most studies reported generally favorable outcomes, these studies were plagued with weak research

designs, and few studies looking at behavioral outcomes (48% of studies compared 73% of studies that examined self-reported outcomes). Overall, de-escalation training was identified as a "promising practice" but the authors cautioned additional research was needed, particularly in the field of policing (Engel et al., 2020a). While lacking a sufficient knowledge base in policing, agencies are continuing to implement de-escalation policies and training in accordance with the recommendations set forth by PERF, the *National Consensus Policy on Use of Force,* and the *President's Task Force on 21st Century Policing.*

a) Defining De-escalation

De-escalation principles and techniques have been held up as the new standard for policing but de-escalation lacks an evidence-based definition (Engel et al., 2020a; Todak & James, 2018). However other fields such as nursing and psychiatry have studied de-escalation, where definitions have been developed. Generally speaking, de-escalation in these fields refers to a process that is used to prevent, reduce, or manage aggressive behavior (both verbal and physical) during an interaction between two or more individuals (Engel et al., 2020a). But given the uniqueness of police-citizen encounters, including police authority to use lethal force, the policing field must be able to clearly articulate what it is to "de-escalate."

De-escalation has been promoted by the *President's Task Force on 21st Century Policing* (2015), which specifically recommended that police agencies integrate the principles of de-escalation but did not offer a definition for what it means to de-escalate. A year later, the Police Executive Research Forum (PERF) released the *Guiding Principles on Use of Force* (2016a), which highlights 30 principles to guide police use of force, *particularly in situations where suspects are not armed with firearms*. PERF contends that de-escalation and the sanctity of

human life are at the core of these 30 principles. While PERF (2016a) provided more details on why de-escalation is important and related principles, this report did not define de-escalation.

Shortly after the release of the 2016 PERF report, the International Association of Chiefs of Police convened 11 leading police organizations to reflect the diversity of thoughts in the law enforcement field to form an accord regarding use of force. They released the *National Consensus Policy and Discussion Paper on Use of Force* in October 2017. Within this document, they provided a specific definition for de-escalation:

> "Taking action or communicating verbally or non-verbally during a potential force encounter in an attempt to stabilize the situation and reduce the immediacy of the threat so that more time, options, and resources can be called upon to resolve the situation without the use of force or with a reduction in the force necessary. De-escalation may include the use of such techniques as command presence, advisements, warnings, verbal persuasion, and tactical repositioning (p. 2)"

This is one of the few developed definitions for de-escalation for police, as researchers note that a thorough and evidence-based definition for police is necessary but lacking (Engel, et al., forthcoming; Todak & James, 2018).

However, very recently researchers have undertaken this endeavor. Todak and White (2019) defined de-escalation as, "bringing a situation or citizen in crisis back to a calm state, using the least amount of force possible." They developed this definition through the use of focus groups and interviews with police officers. This work was informed, in part, by Todak's earlier work which found that de-escalation has a two-fold purpose: to prevent conflict as well as to stop ongoing conflict (Todak, 2017). Furthermore, based on these interviews, Todak and White (2019) offer five tactics that appear to be effective at de-escalating: showing humanity, listening, empowering, being honest, and making compromises. In addition, traits of officers that make

them better de-escalators were identified to include: being empathetic, having communication skills, and the ability to stay calm during a crisis (Todak and White, 2019).

While not clearly defining the term "de-escalation", White and colleagues (2019) offered three principles as the basis for this term. The first is that de-escalation is centered on the sanctity of all human life. This proposition is also upheld by the PERF's *Guiding Principles on Use of Force* (2016a) document, which also recognizes that the sanctity of human life should be at the forefront of use of force policies. The second principle defines de-escalation as recognizing the enormous amount of discretion wielded by police officers. This discretion is important because officers will draw upon previous training and experiences to try to resolve situations peacefully. The third principle is that police-citizen encounters have multiple phases where officers can make decisions and respond to the decisions of the citizen, thereby providing different phases at which officers can make decisions to either escalate or de-escalate an encounter. Many scholars recognize the transactional nature of police-citizen encounters (Bayley, 1986; Binder & Scharf, 1980; Terrill, 2005). While White and colleagues (2019) note there are some situations in which use of force will have to be employed, overall they contend that de-escalation can still be the strategy officers default to to handle all encounters.

Todak (2017) used focus groups and interviews with police officers to identify eight tactics that define de-escalation. (1) *Respect*, whereby an officer communicates with citizens in a respectful tone. (2) *Calm,* in which officers make an effort to stay calm and maintain control of their emotions. (3) *Honesty*, whereby officers are forthright with citizens about the law and the officers' authority to aid in mutual understanding. (4) *Shoes,* which describes how officers try to place themselves in the "shoes" of the citizen and enhance empathy. (5) *Compromise,* where an officer, when feasible, tries to reduce the charges for a citizen to gain compliance. (6) *Listen,*

where an officer allows a citizen to explain their side of the story. (7) *Human,* where an officer humanizes the interaction, treating the citizen as his or her equal as opposed to touting officer power and authority. And finally, (8) *Empower*, where officers directly engage with citizens in the decision-making process, encouraging them to make better decisions. All eight of these were identified as specific tactics used by officers to diffuse situations and help citizens remain calm (Todak, 2017).

In conclusion, an evidence-based definition for de-escalation is still lacking in the field of criminal justice, but work is beginning to emerge to better unpack this concept. An important aspect is that de-escalation is inherently based on the *prevention* of violence and can be used in all forms for police encounters. Not only can it be used to reduce the use of force during police-citizen encounters, but the tactics also have the potential to improve the legitimacy of the police (Todak & White, 2019).

4. Police Use of Force Trainings

The lack of short-term and long-term knowledge regarding police training is well documented in criminal justice literature (Engel, McManus, & Herold, forthcoming; Nagin and Telep, 2017; Lee, Yang, Yun, et al., 2010; National Research Council, 2004; Skogan, Van Craen & Hennessy, 2015). Several training programs have been touted as necessary for changing the field of policing, including recent calls for training in implicit bias, de-escalation, procedural justice, and crisis-intervention teams. Yet, very few of these have a solid scientific base to support such calls (Engel et al., 2020b; Lum, et al., 2016). Indeed, the *President's Task Force on 21st Century Policing* (2015) called for a variety of necessary training for police departments, including de-escalation specifically. It is evident that research in this area is needed, and this review will cover what is known about various training programs that are expected to influence

police use of force, including training programs for procedural justice, crisis intervention teams (CIT), and de-escalation.

a) Procedural Justice Training

Tom Tyler theorized that citizens' perceptions of being treated fairly are foundational to their perceptions of the legitimacy of the criminal justice system (including police), thereby influencing whether they comply with the law (Tyler, 1998, 1990, 2003). Termed *procedural justice,* this theory has informed a large body of research that finds that citizen perceptions of fair treatment are highly correlated with citizen perceptions of the institutions' fairness, which is empirically correlated with legal compliance (Nagin and Telep, 2017). For example, a randomized study found that citizen perceptions of police are enhanced when officers conduct traffic stops using a script based around the elements of procedural justice (Mazerolle, Bennett, Antrobus, and Eggins, 2012).

In line with this body of research, the *President's Task Force on 21st Century Policing* (2015) has endorsed procedural justice as a method for improving police-community relations. Todak and White (2019) suggest that procedural justice and de-escalation have considerable similarities in their core elements and goals. Both frameworks center on how the police treat citizens during an encounter and teach officers to consider how citizen perceptions and reactions will influence the outcome of the encounter. Research suggests that citizens care more about how the officer communicates, above that actual outcome of the encounter (Sunshine & Tyler, 2003; Tyler, 1990, 2004)

It appears that the largest number of police training programs evaluated for a singular topic is related to procedural justice. In a recent review of the literature, Nagin and Telep (2017) identified six quasi-experimental and experimental studies on the effectiveness of procedural

justice training for police. Four of the six studies considered the impacts of the training on officer attitudes and perceptions, with inconsistent findings (Robertson et al., 2014; Rosenbaum & Lawrence, 2013; Schaefer & Hughes, 2016; Skogan et al., 2015). For instance, Skogan and colleagues (2015) tested a sample of nearly 3,000 officers, finding officers in the post-training group had significantly higher scores on a series of items related to procedural justice, and further they found that these effects were sustained over time. In contrast, Rosenbaum and Lawrence (2013) found no effect of the training in pre- and post-survey comparisons on officers' respect to citizens or the importance of quality of treatment during traffic stops after officers were randomized to either receive or not receive the training. Others have found mixed impacts from procedural justice training on corresponding officer attitudes (Robertson et al., 2014).

Only two studies thus far have considered the impacts of procedural justice training on officer behavior. While both studies used a randomized design, the study conducted in the United Kingdom suffered from a small sample size, making it difficult to draw out significant findings and further, the researchers found mixed impacts on victim perceptions; suspect perceptions were not tested (Wheller et al. 2013). A second study conducted by Owens and colleagues (2016) within the Seattle Police Department found that officers who participated in the training were less likely to resolve incidents with arrest (a finding sustained over time), and over time were 50 percent less likely to be involved in a use of force incident. Importantly, officers who were trained were just as likely to initiate contacts with citizens as their non-trained peers.

Nagin and Telep (2017) conclude that the knowledge regarding procedural justice is still limited, and findings are inconsistent. Like other scholars (Engel at al., 2019b), they encourage the use of systematic social observation to evaluate training and officer behavior in the field.

b) Crisis Intervention Teams (CIT)

Persons with mental illnesses are a sub-population handled frequently by the police, and the public has called for improved responses related to this population specifically. One answer to improving the handling of persons with mental illness or developmental disabilities has been training related to the creation of crisis intervention teams (CIT). While CIT can vary across jurisdictions, it is typically a collaborative partnership between law enforcement and mental health experts, working to divert individuals away from arrest and into treatment (International Association of Chiefs of Police, 2016). Specialized training for police in CIT typically relies on teaching officers to recognize the signs of mental illness, and provide them with communication (both verbal and nonverbal) skills to handle a person going through a crisis. By integrating these tactics, police can use alternatives to force and de-escalate situations without resorting to violence (Abbott, 2011). CIT training usually occurs through a 40-hour process and includes some elements of de-escalation training. But, in contrast with the de-escalation training programs described next, CIT focuses exclusively on persons with mental illness and is not intended to be used to handle routine police encounters.

Evaluations of CIT training on officers' attitudes, using self-report surveys, generally find increases in officers' knowledge (Ellis, 2014; Hanafi, Bahora, Demir, & Compton, 2008), empathy for those in crisis (Bahora, Hanafi, Chien, & Compton 2008; Compton, Esterberg, McGeee, Kotwicki, & Olivia, 2006; Compton, Bahora, Watson, & Olivia, 2008; Demir, Broussard, Goulding, & Compton, 2009) and accuracy in identifying and responding to persons with mental illness (Canada, Angell, & Watson, 2012; Teller, Munetz, Gil, & Ritter, 2006; Wells & Shafer, 2006). Evaluations of CIT have evidenced effectiveness in reducing the severity of violence between officers and citizens (Teller et al., 2006; Compton, Broussard, Munetz &

Olivia, 2011). However, another review found CIT training was not predictive of officer level of force (Compton et al., 2014).

c) De-escalation Training

As previously described, scholars are very interested in understanding the impacts of de-escalation training. Engel and colleagues (forthcoming) identified 64 studies between 1976 and 2016 that included de-escalation training as the primary focus of the evaluated training, finding that none were conducted in the field of law enforcement or criminal justice. Rather, the majority of studies were contained in Nursing and Psychiatry. Engel and colleagues concluded that while most studies reported generally favorable outcomes, these studies were plagued with weak research designs. Overall, de-escalation training was identified as a "promising practice" but the authors cautioned additional research was needed, particularly in the field of policing (Engel et al., 2020a).

De-escalation training for police often emphasize communication, thinking, and tactical skills (e.g., distance and cover; using less-lethal technology) that slow down police-citizen encounters to maintain officer and citizen safety. There are dozens of different use of force training programs that are specifically aimed at de-escalating and minimizing the potential for police use of force. While most training remains unstudied, a handful of studies of police de-escalation have recently been published. Although the following studies do not necessarily test de-escalation directly, they were conducted to provide a better understanding of what it means to de-escalate and provide descriptions of correlated factors.

Todak and James (2018) used a systematic social observation study to study the use of de-escalation across 131 observations (during 35 police ride-alongs) to examine how frequently officers use the eight de-escalation tactics identified by Todak (2017) and whether their use is

associated with a positive encounter outcome (defined as whether or not a citizen was calm at the end of an encounter). Overall, Todak and James (2018) found officers regularly used de-escalation tactics, with *adopting a respectful tone* being most prevalent. Other tactics such as *honesty* and *humanizing* were frequently employed by officers. However, they also found that officers vary their use of de-escalation based on the encounter, and use different tactics with different types of citizens. Importantly, the sample used by Todak and James (2018) did not receive specific de-escalation training—leaving the officers with wide discretion in when and how to use de-escalation. They concluded de-escalation was a skill that "officers hone over their careers" (p. 532), as variables related to experience were strongly correlated with the use of these skills. Through the use of logistic regression models, they found several de-escalation tactics were associated with an increased likelihood a citizen was "calm" at the end of an encounter. Though Todak and James (2018) were able to better understand citizen and officer correlates of the use of de-escalation, they were unable to determine whether these skills prevented or reduced use of force for police because no observation escalated to a use of force (beyond placing handcuffs on a citizen).

While the previous research conducted by Todak and colleagues has explored de-escalation, the research did not focus on a particular form of training. To better inform this area, the following sub-sections describe specific forms of de-escalation training, some of which have been evaluated or are currently being evaluated. Specifically, *Integrating Communications, Assessment, and Tactics* (ICAT) training, *Verbal Judo*, and two other de-escalation training programs are discussed below.

1. *Verbal Judo*

The Verbal Judo training program is a de-escalation training aimed at enhancing officer communication skills for a wide range of police responses. Developed in the 1980s, Verbal Judo focuses on providing officers with techniques to achieve 'voluntary compliance' through 'the gentle art of persuasion' (Thompson, 1983). This training teaches skills professionalism, communication, and how to recognize and handle situations 'when words fail." The principles of Verbal Judo training is said to align with the tenants of procedural justice and is viewed favorably by citizens (Lum et al., 2016)

This training was recently subject to empirical evaluation, through the use of coded video-based training scenarios. Using a sample from Halifax, Canada, Giacomantonio and colleagues (2019) evaluated the training with a sample of trained and non-trained officers. The evaluators identified 11 specific de-escalation behaviors that should be elevated by the training and four behaviors that are discouraged by the training. In line with the hypothesized changes, the findings indicated that several of the de-escalation behaviors were significantly more likely to occur immediately post-training than compared to pre-training, and none of the discouraged behaviors were evident (Giacomantonio, Goodwin, & Carmichael, 2019). Interestingly, the researchers also found that officer pairs with more collective experience were less likely to adopt the intended de-escalation behaviors. They suggest that officers with more experience may be less amenable to this training compared to their more junior peer officers.

2. *Other De-escalation Training Programs*

Two other de-escalation training programs are currently under evaluation: *T-3* and *SPI*. The T-3 (Tact, Tactics, and Trust) de-escalation training program is currently under evaluation at two police departments. Preliminary findings from a two-site evaluation suggest that T-3 trained

officers perceive procedural justice tactics as more important and physical control tactics as less important when compared to their non-trained peer officers (Wolfe et al., 2018 as cited in White, Mora, &, Orosco, 2019). The SPI (Strategies for Policing Innovation) research is ongoing at the Tempe Police Department and involves the design, delivery, and evaluation of a de-escalation training program. Once the training curriculum is complete, half of the agency will be trained via a randomized control trial, and outcomes related to use of force, complaints, citizen and officer perceptions will be assessed (White, Mora, & Orosco, 2019).

3. ICAT

The de-escalation training under evaluation in this study is the ICAT training program. Released in 2016, *ICAT* (Integrating Communications, Assessment, and Tactics) is a de-escalation training program developed by the Police Executive Research Forum (PERF, 2016b). Designed to enhance both officer safety and the safety of the individuals they encounter, this training relies on tactics and skills to de-escalate potentially volatile officer-citizen interactions. Specifically, this training is designed for patrol officers responding to circumstances where a person is behaving erratically and is either unarmed or armed with anything less than a firearm (PERF, 2016b). It is these types of encounters, PERF contends, that has received the most criticism on police training and use of force. By training officers in a wider array of options to handle and "slow down" these situations, officers may have better alternatives to the use of deadly force and potentially avoid the use of force altogether. Though ICAT training is the focus of this current study, it is also under simultaneous evaluation with the Louisville Metro Police Department, and results will be finalized in 2020 (Engel, Corsaro, Isaza, and McManus, 2019).

The ICAT curriculum is an integration of crisis recognition and intervention, communication skills, and operational tactics. Though Crisis Intervention Team (CIT) training

has become a model in dealing with persons in crisis, PERF contends that CIT is largely focused on communications and when situations are evolving, officers may forget or downplay their CIT training and instead resort to defensive tactics such as the use of force. Specifically, ICAT is designed to help officers handling *persons in crisis*, which refers to an individual that may be behaving erratically due to things such as mental disorders, substance abuse, situational stress, and/or intellectual/developmental disabilities. An important component of the ICAT curriculum is providing officers with the skills to recognize these types of individuals and approach them safely and effectively.

An integral component of the ICAT training program is the use of the Critical Decision-Making Model (CDM). Developed in the United Kingdom and historically used by SWAT teams in the United States, the CDM focuses on a different style of thinking than the traditionally taught use of force continuum. The CDM (as described in Chapter 3 of this dissertation) is based on a circular thought process as opposed to the traditional linear process and is designed to help officers develop and think through their options in a situation. This five-step critical thinking process is centered on an agency's core values, ethics, and sanctity of human life. Every action that an officer takes should reflect consideration of these central themes and should not go against those ideals. While the CDM is particularly useful in critical situations, its application is meant to be much broader and can be used in everyday situations as well.

Another important part of the ICAT training is that it relies heavily on the use of case study video recordings and scenario-based training exercises. These forms of training help reinforce the concepts taught by ICAT, as opposed to instructors simply teaching the tenants of ICAT with no practice under simulated stressful situations. Through this reinforcement, officers can build their skills and confidence. This approach to training has been used effectively in other

agencies such as the New York City Police Department, the Dallas Police Department, and the St. Paul Police Department (PERF, 2016b).

5. Summary

Chapter 2 of this dissertation covered a copious amount of literature related to police use of force, de-escalation, and use of force training. An important takeaway from this review is that knowledge of de-escalation training for police is in its infancy. It is beginning to be better understood through some ongoing qualitative research, but there is very little systematic, empirical evidence. However, considering the consistency of citizen resistance as a determinant of police use of force, anything officers can do to reduce citizen resistance through the use of de-escalation techniques could drastically reduce the overall use and severity of force. Indeed, it appears that an important component of de-escalation is to *prevent* violence from occurring at all (Todak & White, 2019). American police are facing widespread concern about ways to enhance the fairness of policing, and more specifically how to make encounters between police and citizens safer for everyone involved. De-escalation training, particularly one that couples both communication and tactical skills, could be very beneficial towards reducing conflict with citizens. In turn, this may help with the overall scrutiny faced by law enforcement today.

CHAPTER 3: ATTITUDES AND DECISION-MAKING

1. Introduction

This research study is based on assessing the impacts of de-escalation training on officer attitudes, perceptions, and confidence. These constructs are derived from a series of self-reported surveys. Due to this approach, it is important to consider how attitudes influence decision-making and subsequent behavior. The agency sample used in this research is a relatively small group (approximately 62 sworn officers) who engage in very few uses of force each year. A recent report identified four use-of-force incidents within two years for this police agency (Exiger, 2019). Due to the small occurrence of measurable uses of force, a change in officer behavior cannot be accurately measured as part of this research. Therefore, changes in officer cognitions (specifically attitudes, perceptions, and confidence) will be the most reliable indicator of training effects. Attitudes are correlated with specific behaviors, but many moderator variables are theorized to influence this relationship. Further, there are often situational factors that may influence how attitudes impact decisions and behaviors, particularly as situations become tense. Given the nature of police work, it is critical to understand how decisions may be made, particularly under stressful circumstances.

The remainder of this chapter covers two psychologically-based topics in-depth. First, this chapter reviews what is known about the link between attitudes and corresponding behavior. Due to the nature of this research (surveys of officer attitudes, perceptions, and confidence), it is important to consider how a change of behavior would correspond to a change in overt behaviors by officers. The latter half of this chapter reviews well-known decision-making models and discusses some of the major impairments to decision-making during police work. A crucial component of the ICAT training is the development of their decision-making model (*Critical*

Decision-Making Model or CDM), which PERF contends will be particularly beneficial during critical incidents. However, to better understand the utility of the CDM, and it is necessary to consider how others have framed decision-making, its known correlates, and impairments in the field of policing.

2. Attitude – Behavior Link

Decades of research demonstrate that predicting behavior is a rather complicated task. Human behavior is multifaceted and therefore difficult to explain and predict. Yet, a significant body of research has been dedicated to understanding how attitudes may bring about corresponding behaviors (see Ajzen, 1991; Azjen, Fishebin, Lohman & Albarracin, 2019; Fazio, 1986, 1990). Indeed, several decades of research in the field of psychology have studied the attitude-behavior link. Early research from the 1950s to 1970s was rather discouraging—attitudes were typically found to be very poor predictors of behaviors, leaving many psychologists to question the utility of measuring the attitude-behavior link (Blumer, 1955; Campbell, 1963; Wicker, 1969). Several explanations were offered, such as response bias (providing socially desirable responses), moderating variables, and the multi-dimensional nature of attitudes, along with several attempts to improve these measures (for a thorough discussion see Azjen et al., 2019).

But, the research progressed and recent developments have led to more robust models that explain the influence of attitudes on specific, single behaviors. A single behavior is considered "an *action* directed at a *target*, performed in a given *context*, at a certain point in *time*" (Azjen, et al., 2019, p.29). For instance, attitudes toward using birth control are strong indictors of reported contraceptive use (Kothandapani, 1971). Similar attitude-behavior links have been empirically demonstrated for drug use (Mcmillan & Conner, 2003), physical exercise

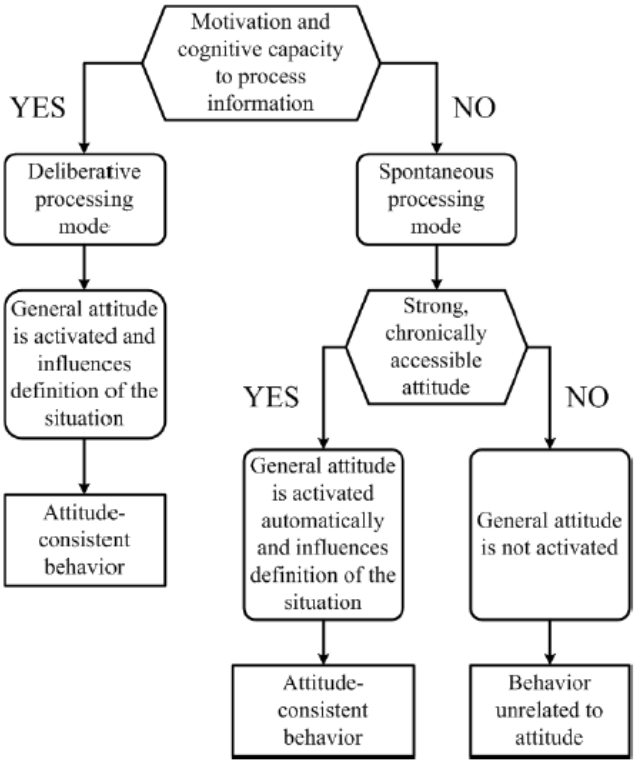
(Godin, Valois, Shephard, & Desharniasi, 1987; Terry & O'Leary, 1995), and breastfeeding (Manstead, Proffitt, & Smart, 1983).

The frameworks developed to explain how attitudes influence behavior include two preeminent approaches, which integrate several moderating variables related to attitudes and behaviors. The first framework is the *MODE* model developed by Russell Fazio in 1990 to describe the processes under which attitudes influence behaviors. MODE is an acronym for "Motivation and Opportunity as Determinants" (Fazio, 1995). This model accounts for the accessibility of attitudes, information processing (controlled vs. automatic), and biases. A second perspective to explain the influence of attitudes on behavior is termed the *Reasoned Action Approach*, which suggests that behavior is explained by a series of antecedents such as intentions, behavior-specific beliefs, attitudes, subjective norms, and perceptions of control (Azjen, 1991, 2012; Fishbein & Azjen, 1975). These two perspectives are discussed in greater detail below.

a) MODE Model

Cited as one of the most direct and advanced frameworks developed to understand how attitudes influence specific behaviors is Fazio's MODE model (Fazio, 1986, 1990, 1995). This model is shown in Figure 1 below.

Figure 1. Fazzio (1990) MODE Model



Occurring at the top of the MODE model is an individual's motivation along with the cognitive capacity to process information and "activate" an attitude. Activation can occur one of two ways: through a deliberate process (*analytical*) or a spontaneous process (*intuitive*). These two processes are very similar to the dual-process model of decision-making (described later in this chapter). When an individual is motivated and has the adequate cognitive capacity, information processing will be deliberate, and the process follows the path of the left side of Figure 1. This is when general attitudes are purposively activated by the individual, influencing the corresponding behavior deliberately, and this behavior will be consistent with the corresponding attitude.

However, when an individual has low motivation or low cognitive capacity to process information, activation will occur spontaneously, as shown on the right side of Figure 1. Within

this process, attitudes will only be available if they are automatically activated. Automatic activation is most likely to occur for attitudes that are strongly held for the individual—an attitude that has a robust cognitive association between the learned memory and the object eliciting attention. The stronger the attitude, the more likely it is that the brain will automatically activate this attitude from memory (Fazio, 1990). When the attitudes are strong, an individual can automatically make the association between the information and the attitude, which will increase the likelihood that the corresponding behavior is aligned with the attitude held. When attitudes are weak, a person will not activate an attitude and the corresponding behavior will likely be unrelated to the attitude held by the individual. Importantly, research demonstrates that strong attitudes are more resistant to change compared to weak attitudes, and are considered to be more persistent over time, impacting perceptions, judgments, and behavior (Krosnick & Petty, 1995).

Therefore, the MODE model provides some important considerations: the attitude-behavior link will be stronger when processes are deliberate and when an attitude is strongly held. Indeed, research onto the effects of moderating variables between attitudes and behaviors seem to point towards the influence of a person's vested interest or direct experience with the attitudinal object in question (Azjen, 1988; Glassman & Albarracin, 2006). Therefore, Azjen and colleagues (2019) conclude: "Whether a person operates in the deliberative or spontaneous processing mode, attitudes toward objects should be good predictors of specific behaviors so long as they are readily accessible from memory" (p. 36).

Several studies have empirically evaluated the MODE model predictions concerning the attitude-behavior link (Berger & Mitchell, 198; Fazio, Chen, McDonel, & Sherman, 1982; Fazio & Williams, 1986). For example, Kokkinaki and Lunt (1997) tested Fazio's model on college

students selecting products based on their attitudes toward the product. They found empirical support for the processing framework of the MODE model, where both involvement and attitude accessibility moderate the impact of attitudes on specific behaviors. High levels of involvement (motivation) and attitude accessibility were associated with higher levels of attitude-consistent behavior. However, the MODE model has been criticized in that it lacks details for the spontaneous processing mode (Eagly and Chaiken, 1993). More work is required to conceptualize the effects and moderators of attitudes on behavior when motivation or cognitive capacity is low.

Considering this research study, the MODE model suggests that officers with stronger attitudes towards favoring de-escalation will be more likely to engage in specific behaviors promoted by de-escalation training. However, it is also important to consider an officer's direct experience with the object in question, such as if the officer has been involved in a critical use-of-force incident or whether they have successfully or unsuccessfully engaged in de-escalation tactics. These experiences are explored with the police officer sample in this research study.

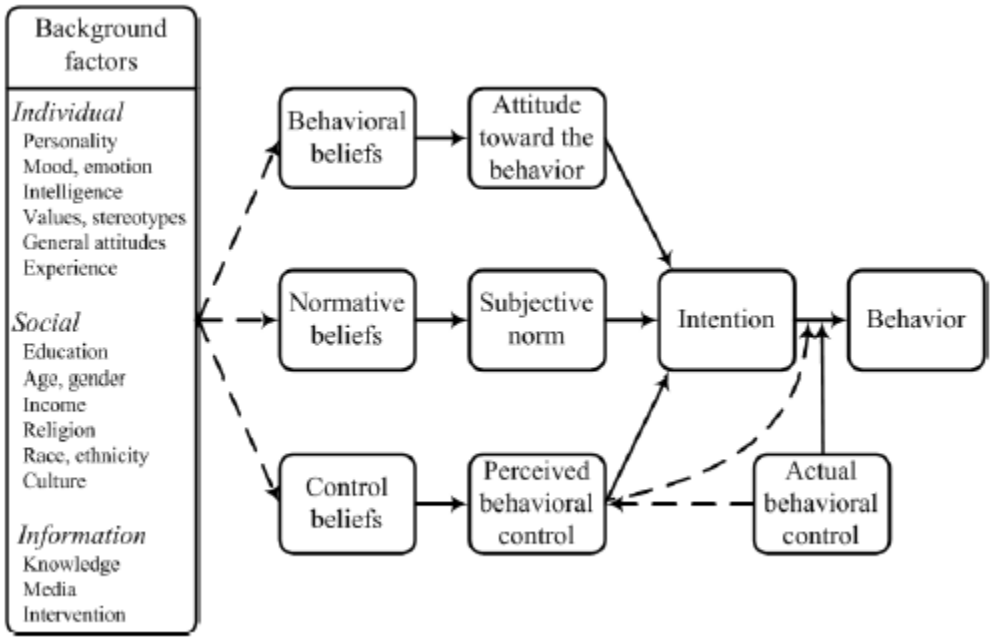
b) Reasoned Action Approach

From an alternative perspective, several psychologists have proposed that the intention to perform a behavior, rather than attitude, is the closest cognitive precursor to actual behavior (Fishebin & Azjen, 1975; Fisher & Fisher, 1992; Triandis, 1977). Through this framework, the behavior should be fairly consistent with intentions to engage in the behaviors under consideration. Consistent with this framework, meta-analyses find average intention-behavior correlations of 0.45 (Randall & Wolff, 1994), 0.47 (Armitage & Conner, 2001), 0.53 (Sheppard, Hartwick, & Warshaw, 1988), and 0.62 (van den Putte, 1993). In a more recent meta-analysis of

several studies of this concept, an overall effect size of 0.53 between intention and behavior was found (Sheeran, 2002).

Considering that intentions are generally good predictors of specific behaviors, they have been integrated into many theories of human behavior and cognition (Azjen et al., 2019). But how do individuals arrive at their intentions? The process whereby individuals reach their intentions is referred to as the *Reasoned Action Approach*. The Reasoned Action Approach is informed by the psychological theories of reasoned action and planned behavior. This approach works backward, starting with a behavior, and finding what preceded that behavior. In the full framework, it is theorized that behavioral intentions are derived from beliefs about performing the behavior, and these beliefs provide the cognitive framework which forms attitudes, perceived social norms, and perceptions of control (Azjen et al., 2019). A visual schema for the reasoned action approach is provided in Figure 2 below.

Figure 2. Reasoned Action Approach (Azjen et al., 2019)



Note that there are several sub-components of the Reasoned Action Approach, with a causal chain of effects stemming from background factors, influencing beliefs, which in turn influence attitudes, perceived norms, and perceived control of the behavior, all of which influence intentions. Behavior is ultimately dependent on the information individuals have concerning the behavior, indicating that to a degree, the behavior is reasoned. Researchers note, however, that once attitudes, norms, and perceptions are formed they become readily accessible (automatically activated), and thereby more easily guide the performance of the behavior. The dotted lines shown in Figure 3 demonstrate that while background factors *may* influence beliefs, there is not necessarily a connection between background factors and beliefs. Azjen and colleagues (2019) reason that the majority of studies find background factors only impact the proximal determinants of intentions, rather than impact intentions directly.

Several meta-analyses from the field of Psychology have provided empirical evidence to demonstrate how attitudes toward behavior, subjective norms, and perceived control (self-efficacy) predict intentions, which, in turn, predict behaviors as described in the reasoned action approach. Attitudes are found to correlate well with intentions, with average correlations between 0.45 and 0.60(Azjen et al., 2019). Correlations between subjective norms and intentions range from 0.34 to 0.42, and correlations between perceived behavioral control and intention range from 0.35 to 0.46 (Azjen et al., 2019). These correlations are demonstrated for a wide range of behavior. And, as described previously, the correlations between intentions and behavior range from 0.45 to 0.62. Overall, researchers have noted that this approach, comprised of the reasoned action and planned behavior theories, are promising, and provide some of the most complete analyses of beliefs, attitudes, and behaviors (Eagly & Chaiken, 1993; Petty & Cacioppo, 1981).

As with any framework of explanation, shortcomings of the reasoned action approach have been identified by researchers. First, a lack of behavioral control can prevent individuals from carrying out an intended behavior; however, including measures of *perceived* behavioral control can improve prediction in models. Other criticisms include that inaccurate information can provide beliefs, attitudes, and intentions that are simply unrealistic. Importantly, in a naturalistic setting, unanticipated events can impact intentions, and similarly, strong emotions can activate beliefs and attitudes in a way that would not be captured while completing a survey in a lab or classroom setting. These are important considerations for this dissertation because the research was collected during a classroom setting through the use of surveys. Therefore, the self-reported responses from officers presented with a particular scenario may not be reflective of how they would respond in a real-world setting.

Despite the differing frameworks proposed by researchers in this field and their noted shortcomings, the link between attitudes and behaviors has been subject to rigorous empirical evaluation, particularly through the use of meta-analyses. Overall, these contemporary studies find significant but highly varied effect sizes. For instance, behavior-focused attitudes and related behaviors find effect sizes ranging from .36 (Kraus, 1995), .49 (Eckes & Six, 1994), .51 (Glasman & Albarracín, 2006), to a high of .79 (Kim & Hunter, 1993).

While this range of effect sizes is somewhat wide, it still substantiates the claim that attitudes indeed contribute to the prediction of related behavior. It also appears to be more likely that attitudes and behaviors will be linked when attitudes are strongly held. When considering this research study, the Reasoned Action Approach would emphasize that the study should assess individuals' intentions to perform certain actions. Intentions, measured through the use of described scenarios in the survey instruments, will be an important area to explore. If intentions indeed change after the ICAT training program, there is promising evidence that these intentions could predict future behavior.

3. Decision-Making Models

While a significant body of research exists to identify the correlates associated with use of force (see Chapter 2), little attention has been paid to *how* officers make force decisions (Hine, Poerter, Westera, Alpert, & Allen, 2018b). Specifically, a decision is defined as, "committing oneself to a course of action where plausible alternatives exist, even if the person does not identify or compare these alternatives" (Klein, 2008, p. 457). But, what is the decision-making process that turns a calm police-citizen encounter into something violent? Police encounters with citizens are dynamic, and when tensions escalate, officer and citizen behaviors and demeanor can rapidly change. Throughout these encounters, there are several decision points, and officers

gather information and make choices at prior stages which affect later stages. Binder and Scharf (1980) theorize that the police-citizen encounter is a developmental process, where decisions and behaviors by either, or both, the citizen and the police officer can increase or decrease the likelihood of a violent encounter. It is a *transactional* process. Therefore, understanding decisions and decision-making is an important aspect of understanding use of force as well as the use of de-escalation tactics.

A variety of general decision-making processes have been proposed in the literature, but this review will focus on three models: (1) the Dual Process Model; (2) the Naturalistic Decision-Making Model; and (3) the Critical Decision-Making Model. These models, their origins, and what is known about them are discussed in detail below. This section will also discuss the known impairments to decision-making during use of force incidents. The Critical Decision-Making Model was recently developed by PERF to improve decision-making, as other models discuss how stressful situations can reduce an officers' cognitive capacity for decision-making.

a) Dual Process Model

The Dual Process Model has dominated research on decision-making in the field of cognitive psychology (Hine et al., 2018b). The Dual Process model is based on two distinct decision-making styles: intuition and analysis. Defining the two styles of thought, Wang and colleagues (2017) state, "*Intuition* refers to reliance on immediate, unconscious judgment based on feelings, whereas *analysis* refers to reliance on deliberate, conscious judgment based on reason" (p. 15).

The intuitive decision-making style is often described as a "gut feeling" but can go by many names such as System 1, automatic, implicit, or impulsive (Evans, 2008). The intuitive

style of making decisions has been popularized in two best-selling books: Malcolm Gladwell's *Blink: The Power of Thinking without Thinking (2005)* and Gerd Gigerenzer's *Gut Feelings: The Intelligence of the Unconscious* (2007). Both of these books provide plenty of examples where individuals recognize and filter cues and match them to patterns based on the individual's experiences and long-term memories. The intuitive decision-making style is attributed to fast but mostly accurate decisions (Cohen, 1981). In observations of firefighters and paramedics, Klein (1999) found that very little rational decision-making occurred, and rather the expert individual recognizes a situation, matches it to past situations, and rapidly retrieves a solution. He termed this "recognition-primed" decision-making, which involves some initial purposeful reasoning, but relies primarily on automatic processes (Klein, 1999). Relatedly, heuristics, defined as a "simple procedure that helps find adequate, though often imperfect, answers to difficult questions", provide shortcuts for some of these intuitive cognitions (Kahneman, 2011, p. 98).

However, this type of decision-making may face more criticism within the field of policing. Some researchers caution that officers develop racial biases after repeated contact with minorities, forming schemas for future encounters (Smith & Alpert, 2007). The association between race and weapons has been demonstrated in many of the shoot-don't-shoot scenario training (Correll et al., 2006). However, other research has demonstrated that police may also exhibit a "reverse racism" effect, whereby officers were found to be more hesitant careful in their decisions to shoot Black citizens compared to White citizens (James, James, & Villa, 2016). This type of processing can have a more profound impact when considering the consequences of automatic decision-making that is *inaccurate* in policing.

In contrast, the analytic decision-making style is more a more deliberate process, involving an individual weighing all options individually and choosing the best option

(Kahneman & Lovallo, 1993). Other identified names for this style of decision-making in the literature include System 2, controlled, explicit, and reflective (Evans, 2008). Analytic decision-making is considered to lead to correct and ideal decisions. Though, criticisms have been attributed to analytic decision-making, asserting that this style of thinking is difficult in situations with complex tasks or where rapid decisions need to be made (Allen, 2011).

There has been debate in the field of cognitive psychology about the nature of the relationship between these two thinking styles. Some have argued that they reside on opposite sides of the spectrum, referred to as the *bipolar model* (Allinson & Hayes, 1996; Kolb, 1984; Miller, 1987). While others contend that these styles of cognition are uncorrelated, referred to as the *independent model* (Epstein, 1994; Sloman, 1996; Stanovich & West, 2000). It appears that there is greater evidence for the independent model, in that the dual-process framework suggests both intuition and analysis are necessary to process information (Evan, 2008; Wang et al., 2017). However, for some people, one system may dominate the influence of the other (Stanovich, 1999). Recently, Wang and colleagues (2017) conducted a meta-analytic review considering these two competing relationship frameworks, concluding that intuition and analysis are independent constructs.

This is an important conclusion because ideally, these two constructs would work together to form optimal decisions, such as when an expert has used analytic thinking at multiple occasions in the past (when the time has permitted this style of thinking), allowing for the creation of stronger and possibly automatic associations. For instance, consider the differing influence of experience on a police officer's decision-making. Those with more experience are likely to act in a particular way if they have successfully handled the same type of experience in the past. However, those with little experience will need to use more analysis during their

decision-making, likely taking them more time to consider all of their possible actions. But it is logical, that with more time and experience, an officer could use both analysis and intuition simultaneously to their fullest advantage.

b) Naturalistic Decision-Making (NDM)

Ambiguity and uncertainty are obstacles to effective decision-making (Lipshitz & Strauss, 1997). Nevertheless, these obstacles are present in many naturalistic settings, including during officers' daily encounters with citizens. Encounters with citizens can escalate quickly, sometimes resulting in what is referred to as the "split-second syndrome" whereby officers are forced to make rapid decisions, typically resulting in poor outcomes (Fyfe, 1986, 2015). Fyfe (1986) argues that while there may be situations where officers are purposively abusing their authority to use force, most issues with excessive and inappropriate uses of force are the result of officers being placed in situations under extreme time constraints, producing incompetent decisions. This underscores the importance of how the environment can influence decision-making for officers.

To account for the stressful environments often faced by police before force is used, researchers have applied the Naturalistic Decision-Making (NDM) framework to police decision-making (Hine et al., 2018b). The NDM approach has been applied to decision-making in emergency rooms, firefighting scenarios, and military operations, to name a few (Klein, 2008). The NDM framework relies upon individuals making intuitive decisions, often by using heuristics and other shortcuts to categorize an overwhelming amount of information. Individuals will default to this style of decision-making because, during a stressful situation, they are faced with a limited cognitive capacity to process all of the available information. But importantly, the NDM framework relies on the fact that individuals make decisions based on prior knowledge,

and as an individual has greater knowledge and experience, they are more capable of making rapid yet accurate decisions (Klein, 2015).

c) Impairments to Decision-Making

While officers can learn several different types of decision-making skills, an officer's course of action will still be contingent upon their understanding of a situation (Kaempf, Orasanu, Zsambok, and Klein, 1997). Situational stress and perceived time constraints can alter an individual's effectiveness in decision-making. Due to the inherently dangerous nature of police work, officers are at a higher risk of being susceptible to the influence of situational stress compared to other occupations. Facing a potential threat can cause the body to engage in a series of automatic physiological responses. Furthermore, these physiological and psychological stress responses during high-stress police-citizen encounters can influence the outcome of the encounter, for better or worse (Arnetz et al., 2013). The sympathetic nervous system becomes activated which may be beneficial if activated at a moderate level. For instance, this moderate arousal may result in increased awareness, improved cognitive processing, and improved sensory awareness (Jameson et al., 2010; Kalish, Müller, & Tüscher, 2015).

However, if a person's physiological response is more severe, then the changes are not as advantageous. A severe response is referred to as the "fight or flight" response (Lovallo, 2016). Inappropriate use of force decisions often occurs during critical incidents in which an officer is under extreme physiological arousal causing poor situational awareness (Olson, 1998). Typically, these extreme physiological responses manifest themselves into three forms of impairment: (1) perceptual distortions, (2) motor deficits, and (3) cognitive deficits. Unfortunately, sometimes these distortions manifest as a combination of these three to officers (Klinger, 2001). Each of these forms is described in more detail in the following paragraphs.

1. *Perceptual Distortions*

Perceptual or sensory distortions include changes in vision, auditory variations, and a sense of time "slowing" (Andersen & Gustafsberg, 2016; Klinger & Brunson, 2009). For instance, the phenomena of "tunnel vision" is a visual distortion where an individual has reduced peripheral vision, focusing solely on the immediate threat ahead (Olson, 1998). This is caused by restricted blood flow to the eyes and eye muscle contractions, reducing depth perception (Andersen & Gustafsberg, 2016). Impaired by tunnel vision, officers may focus on a particular threat, and miss other potentially disastrous cues near them. Indeed, studies demonstrate that vision may be impaired up to 70 percent during a fight or flight response, requiring much longer response times for officers than if their vision was not distorted (Olson, 1998). Importantly, these distortions may occur before a weapon's discharge, but may also continue after firing has ceased. Klinger and Brunson (2009) raised critical questions about how police recall use of force incidents, finding that 94 percent of officers interviewed (n=80) admitted some form of distortion in their perception of the events before or during the discharge of their weapon. Overall, these perceptual distortions affect an officer's ability to see and hear potential threats and involve implications for the safety of the officer and citizens (Andersen & Gustafsberg, 2016).

2. *Motor Deficits*

When the body is experiencing extreme physiological response, adrenalin begins pumping thereby increasing heart-rate and respiration. While this stress response can aid in gross motor skills, it also results in deficits in fine motor skills, such as the skills needed for the accurate firing of a service weapon or manipulating handcuffs (Everly & Lating, 2013; Johnson, 2008). This has been evidenced historically, as studies of combat soldiers have demonstrated difficulties in sending Morse code messages during combat situations. Indeed, when the body is

responding to distress in this manner, individuals can lose the ability to function at the same physical capacity as they otherwise would be able.

3. Cognitive Deficits

Impairments to an individual's cognitive abilities are another consequence of the fight or flight phenomena. This occurs as stress hormones constrict blood vessels, reducing blood flow to the pre-frontal cortex, the part of the brain responsible for processing information and complex cognitive functioning (Lipton, 2008). Cognitive deficits can include memory deficits, such as the inability to recall information from memory. This is important as it can impair an officers' ability to recall crucial training techniques and tactics (Johnson, 2008). Also, officers may not be able to correctly recall what occurred during an incident debrief. Indeed, research demonstrates that individuals can produce a new or 'false' memory because they are unable to specifically recall the details of an incident due to cognitive impairments (Loftus & Hoffman, 1989). Furthermore, the provision of misinformation or suggestion may provide individuals with confidence in providing details to these false memories (Loftus, 2005).

d) Critical Decision-Making Model (CDM)

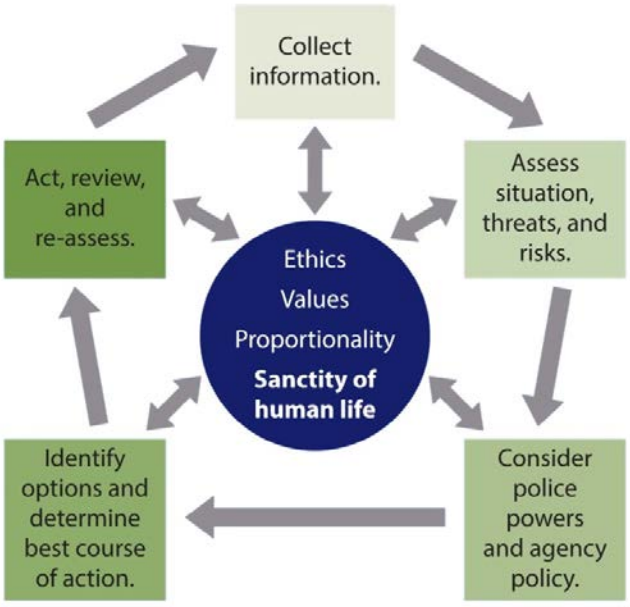
Situational stress can limit an individual's cognitive capacity to perform certain actions. Given that situational factors (particularly during stressful circumstances) can influence decision-making abilities, the Police Executive Research Forum (PERF) developed a framework to guide officer decision-making that is intended to be particularly beneficial during critical incidents.

The Critical Decision-Making Model (CDM) was developed by the PERF as part of the ICAT training program (PERF, 2016b). PERF recommendation the adoption and use of this decision-making model as a way to consider tactical decisions in any situation, including situations that may result in the use of force. This model is not new, rather it was developed from

the National Decision Model used in the United Kingdom for several years. Police in the UK specifically use this framework when responding to unplanned incidents or planning of major events, such as sporting events. Additionally, SWAT teams in the United States are trained to make decisions similarly, taking time to collect and understand as much information as possible before taking any action (PERF, 2016b). PERF contends that if this process works for specialized tactical units, it can also work for patrol officers.

The CDM is based on a five-step, circular thinking process, as shown in Figure 3 below. The goal is to provide officers with an organized way to make decisions, particularly when they are faced with critical situations involving a person acting erratically who is either unarmed or armed with anything less than a firearm.

Figure 3. The Critical Decision-Making Model (PERF, 2016)



The CDM thinking process is designed to center around an ethical core, reminding officers to ground their decisions in their agency's mission, vision, and values, along with the sanctity of human life. The five steps of the CDM are as follows:

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-assess

Officers are taught that they can move backward and forwards through these steps, moving to what is needed as the situation evolves. Step one is considered the starting point of the thinking process, where officers are taught to continually collect information. This step aligns with previous research, where researchers have proposed individuals coping with uncertainty should collect information before making a decision (Dawes, 1988). The second step is to assess the situation, threats, and risks to evaluate the information the officer has gathered. Step three is designed to remind officers of their duty as civil servants, their legal authority, and also reminding them to consider the sanctity of all human life. The CDM is part of the larger ICAT training program, which proposes to increase both officer and citizen safety. This step may help re-focus officers on potential actions that are better aligned with citizen safety.

Step four is designed to have officers identify and consider their options to select the most appropriate one. This step appears to integrate some of the aspects of the analytical decision-making style, described previously. Officers are expected to consider multiple actions—not just the exact course of action used in prior experiences. Step five is to act, review, and re-asses, where an officer is taught to take an action and surmise whether the action had the intended effect. While step may also this may be a broad series of actions, reviewing and re-

assessing are critical aspects of breaking down what went wrong and what went right during a situation. Schon (1983) suggests that expert knowledge is developed through reflection, which helps develop an acute understanding of a phenomenon. Indeed, if practitioners are to become experts they need to review the actions they have taken. However, the reviewing and re-assessing aspect of this step may be difficult to conduct under tense and rapidly evolving situations.

PERF concedes that many officers may find this model complicated initially, but they contend that with practice this model can become second-nature (PERF, 2016b). Similar to how officers in the UK often apply the National Decision Model in everyday work, patrol officers can apply the CDM in many different situations whether or not force may be necessary. This constant reinforcement can help the CDM become their normative guide for decision-making.

4. Summary

In summary, there are several frameworks developed that are intended to explain how individuals make decisions, particularly when they are faced with intense and high-stress situations. These frameworks are not necessarily competing, but appear to be somewhat compatible. Indeed, the Critical Decision-Making Model (PERF, 2016b) is a framework that, with routinized practice, can help individuals during high-stress times when automatic cognitive processes are likely to take over. However, how officers make decisions during encounters which turn critical is still likely to be influenced by a variety of physiological and psychological impairments. While training for officer resilience can provide techniques to aid in handling physiological changes (see e.g., McCraty and Atkinson, 2012), these may not be included in an agency's training curriculum. Overall it appears that the described decision-making frameworks come to a similar conclusion that with more experience, individuals are likely to become better decision-makers.

Important to the methodology of this research study, this review demonstrated that attitudes can have a significant influence on corresponding behavior. Moderating variables, which influence how attitudes are activated – e.g., through a deliberate process (*analytical*) or a spontaneous process (*intuitive*) – will also be important to consider when unpacking the research findings. It is vital to create strong associations between attitudes and objects to create a strong attitude-behavior link, which will likely need repeated reinforcement. This review also discussed how impairments to decision-making may impact officers and use of force. Collectively, this literature review identifies some promising findings to support the notion that if training influence significant changes in attitudes, there is a greater likelihood it will also result in measurable behavioral changes.

CHAPTER 4: METHODOLOGY

1. Introduction

In general, little attention has been devoted to evaluating criminal justice training, including training designed for law enforcement (Bradley & Connors, 2007; Skogan et al., 2015). Yet this is a critical area for research given that officers spend several hours each year on training, and high caliber training is necessary for officers to perform their job well. Police departments are also faced with competing budget constraints, thus research in this area can inform how to efficiently use the limited resources available to law enforcement. The purpose of this research is to provide insight into an innovative police de-escalation training program, the ICAT training program, by exploring how officers perceived the training, the impacts on officer attitudes, confidence, and self-reported behavior, and how these things change over time.

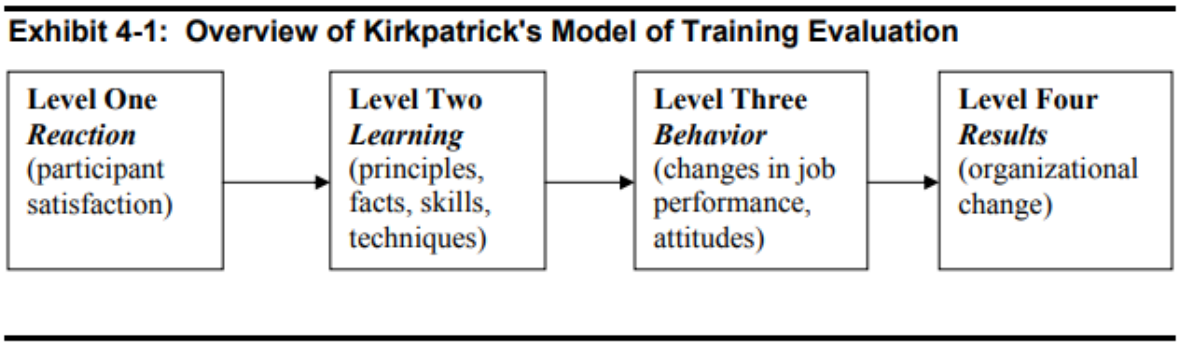
This chapter describes the data and methodology used to demonstrate the impact of the ICAT training program for a sample of police officers. I begin by laying out the research questions which guide the research project, followed by a thorough description of the sample, variables, and analytical techniques used. Given that this pilot study is the first of its kind, the methods are exploratory and rely heavily on survey research. Survey research is used commonly in evaluation work and is regarded as most useful when there are no other existing credible data sources (Bradley & Connors, 2007). This chapter concludes with a discussion of the methodological contributions and limitations of this research.

2. Evaluation Design and Research Questions

More than two decades ago, Donald Kirkpatrick (1998) developed what is considered to be the preeminent model for conducting evaluations of training programs. This model relies on four levels that build upon one another: (1) reaction, (2) learning, (3) behavior change, and (4) results. The "reaction" level determines the participants' view of the training, based on the premise that for training to be effective participants should hold a positive view of the training. Level 2, "learning", includes measuring participants' changes in attitudes, knowledge, and skills or techniques as a consequence of training. To enact change in behavior, learning must first occur—it is beneficial to measure changes at this level. The third level is focused on "behavior change", where the evaluation seeks to determine if the training is transferred to any sort of change at the individual-level in terms of job performance. This level is more difficult to measure because the changes may not be straightforward, and requires several factors such as an employee's opportunity to apply the training and the researcher's ability to attribute the change to the training program (as opposed to other confounding factors). The fourth and final level is termed "results." The results level intends to gather the effect of the training on the organization,

shifting the evaluation focus away from the individual-level effects. Taken together, these four levels (shown in the graphic below) offer guidelines for evaluation designs, but can be modified as necessary to fit a variety of training program evaluations (Kirkpatrick, 1998).

Figure 4. The Kirkpatrick Model (Bradley & Connors, 2007)



The evaluation design and corresponding research questions of this study are based on the first and second levels of the Kirkpatrick model (Reaction and Learning). Due to the exploratory nature of this research, these are the most appropriate first steps for evaluation. As such, this research aims to answer a series of preliminary impact research questions, including the following:

1. How to measure officer attitudes and perceptions impacted by ICAT training?
2. How is ICAT training received by officers?
3. Does ICAT training impact officers' attitudes towards use of force?
4. Does ICAT training impact officers' attitudes towards citizens?
5. Does ICAT training change officers' knowledge and attitudes about persons in crisis specifically?
6. Does ICAT training improve officers' confidence in handling critical incidents?
7. Does any observed impact from the training change over time?

These questions assess the major themes that are reinforced throughout the ICAT curriculum, and they are organized at two different levels of evaluation (reaction and learning). Additionally, the final research question allows for a consideration of whether training effects decline with time, which may inform if refresher training would be necessary to maintain training effects.

3. Data

The data used in this research were initially gathered as part of an internal improvement study conducted by the Office of Safety and Reform at the University of Cincinnati to document changes as part of a larger reform effort by the University of Cincinnati Division of Police (UCPD). This police agency and the specific sample is further described below.

a) Research Setting

The UCPD is a medium-sized, fully-sworn university police department, with a complement of over 70 sworn police officers and 25 security (non-sworn) officers. It is housed within the larger Department of Public Safety at the University of Cincinnati. The UCPD provides all public safety services for the UC community (over 70,000 students and employees) and has primary jurisdiction on all university-owned and operated properties. Furthermore, for several years the UCPD has operated under a signed Memorandum of Understanding with the City of Cincinnati, allowing the UCPD to patrol and conduct police services in the approximate one-mile, off-campus radius surrounding the main, uptown campus. The activity of the UCPD is relatively low—they engage in very few uses of force and record fewer than five hundred Part I crimes[1] per year (Exiger, 2019; Isaza et al., 2017). Before the implementation of ICAT training

[1] The Uniform Crime Report (UCR) produced by the FBI identifies Part I crime incidents to include eight types of offenses: criminal homicide, rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson

the UCPD, the agency was amid a three-year voluntary Monitorship as a result of an officer-involved shooting from 2015. As part of this Monitorship, the agency was required to renovate their use-of-force policies, procedures, and training, which ultimately lead to their adoption of de-escalation training and tactics in 2018 (Engel et al., 2020b).

b) ICAT Training at the UCPD

Before implementing ICAT training at the UCPD, multiple UCPD command and training staff traveled to Camden, New Jersey to attend a day-and-a-half training session in July 2017 which provided a thorough overview of the ICAT curriculum and steps to implement within an agency. A few months later, a trainer from PERF traveled to UCPD in March of 2018 to provide a second train-the-trainer session, where several UCPD supervisors and trainers received additional instruction on how to develop and implement ICAT training. The UCPD training staff made slight modifications to the original ICAT curriculum before delivering the training to the department. These modifications included: 1) adjusting the CDM to make it specific to the UCPD, 2) adding videos to further demonstrate the curriculum; 3) structuring the classroom discussions to apply the universal ICAT principles directly to campus policing; 4) adjusting the setting of scenario-based training (e.g., incident in a dorm room rather than a private home).

After the curriculum was finalized, the ICAT training was delivered across seven sessions by two UCPD training staff, between May 2018 and September 2018. All ICAT training was conducted over two eight-hour days at the UCPD training facility. The first day, officers focused on learning the curriculum and skills. During the second day, the first-day curriculum was reviewed and officers practiced the skills they had learned with live-action scenario training. The officers participated in a series of scenario-based, role-playing training exercises involving a person who is going through some form of crisis and who may or may not be armed. After each

scenario, the trainers reviewed what occurred to describe what officers did well and where they could improve in the future.

c) Sample

The study sample included UCPD line officers, sergeants, lieutenants, and captains. There was a total of 62 officers eligible for the training when the research began in May of 2018. All surveys were given in-person, distributed using paper surveys. The pre-training sample included a total of 60 officers, representing a 96.8% response rate[2]. The post-training sample included a total of 59 officers, representing a 95.2% response rate. Finally, the follow-up survey, given to officers approximately 4-months after their training, included a total of 58 officers, representing a 93.5% response rate. Research examining response rates indicate that the average response rate in surveys distributed to a police officer population is 64%, though there is a great deal of variation (Nix, Pickett, Baek & Alpert, 2017). These researchers also note that in-person surveys achieve much higher response rates. As such, the response rates in this sample are robust and commensurate with other samples in the field.

Table 1 below contains a breakdown of the demographics of the police agency sample. The sample in this study is primarily White (90.3%), Male (87.1%) with a majority serving as a patrol officer (72.2%). Roughly half (51.6%) are below the age of 42 years. Approximately 48.4% of the sample holds a Bachelor's degree or higher educational attainment. There are approximately equivalent sizes of less-experienced officers (38.7% with four or fewer years at the UCPD) and more-experienced officers (38.8% with 15 or more years at the UCPD). In addition to these demographics, officers were asked about prior experience with critical incidents

[2] Two officers were pulled into the training early, and therefore unable to respond to the pre-training survey.

during their law enforcement career and training (use of force, handling the mentally ill, and officer discretion) they have received in the past three years.

Table 1. Sample Demographics (N=62)	% (N)
Gender	
Male	87.1 (54)
Female	12.9 (8)
Age	
18 to 25 years old	1.6 (1)
26 to 33 years old	37.1 (23)
34 to 41 years old	12.9 (8)
42 to 49 years old	29.0 (18)
50 + years old	19.4 (12)
UCPD Tenure	
Less than 1 year	4.8 (3)
1 – 4 years	33.9 (21)
5 – 9 years	3.2 (2)
10 – 14 years	19.4 (12)
15 – 19 years	32.3 (20)
20 or more years	6.5 (4)
Race	
Caucasian/White	90.3 (56)
African American/Black	6.5 (4)
Latino/Hispanic	3.2 (2)
Rank	
Patrol Officer	74.2 (46)
Supervisor	21.0 (13)
Command Staff (Captain and above)	4.8 (3)
Law Enforcement Tenure	
1 – 4 years	29.0 (18)
5 – 9 years	11.3 (7)
10 – 14 years	12.9 (8)
15 – 19 years	16.1 (10)
20 or more years	25.8 (16)
NA/Refused	4.8 (3)
Educational Attainment	
High School	6.5 (4)
Less than two years of college	25.8 (16)
Associate's Degree	12.9 (8)
Bachelor's Degree	38.7 (24)
Graduate Degree	9.7 (6)
NA/Refused	6.5 (4)
Military Experience	
Yes	9.7 (6)
No	85.5 (53)
NA/Refused	4.8 (3)

In comparison to national statistics for police departments, the UCPD has a similar percentage of female officers—approximately 12% of female full-time sworn officers in each (Hyland & Davis, 2019). Additionally, this percentage of female sworn officers becomes lower as the population served becomes smaller. For example, when considering a population served of 50,000-99,999, the national average for departmental female sworn officers is only 10.6% (Hyland & Davis, 2019). In contrast, the UCPD serves a population of approximately 70,000, putting their percentage of female officers slightly above the national percentage. In terms of national racial demographics, about 71% of full-time sworn officers are white, while 27% are black, Hispanic, or of other races (Hyland & Davis, 2019). For agencies that serve populations between 50,000 and 99,999, the category which would include the UCPD, approximately 75% are White—typically the largest police departments are more diverse compared to those that are smaller (Hyland & Davis, 2019).

When compared to campus police national statistics, the UCPD has slightly fewer female officers than the national percentage of 17.5% (Reaves, 2015). Similarly, the UCPD is less racially diverse than the national averages for sworn campus police, which reported 21.0% Black and 7.5% Hispanic for departments (Reaves, 2015). In summation, the UCPD appears to be slightly less racially diverse than national comparisons for both local and campus police departments and less gender-diverse compared to other campus police departments. However, these differences are rather modest and are unlikely to result in substantial biases.

d) Survey Instrument and Variables

Three survey instruments serve as the foundation for this research study and are largely similar in content. The surveys include a (1) pre-training survey[3], (2) post-training survey, and (3) follow-up survey. These survey instruments were created by the IACP/UC Center for Police Research and Policy but rely on items used in previous research to measure relevant self-reported attitudes and perceptions regarding citizen interactions, use of force, policing, training, and agency-specific perceptions. Additionally, the survey contains items developed specifically for the evaluation of ICAT training, including measures regarding persons in crisis and the Critical Decision-Making Model (CDM). Questions were phrased in a way to generate a variance on officers' responses. Different questions within the same section were often worded both positively and negatively, to encourage the officers to be alert to the content of the survey. Where appropriate, certain items were reverse coded in SPSS so that items matched the same direction to create scale scores and factors. The ten specific sub-topics of the surveys are as follows:

A. *Priorities during Citizen Interactions*. This section contains 18 survey items related to a short scenario involving a police-citizen interaction. These items were designed to determine whether officers prioritize actions that align with the tenants of the ICAT training program (e.g., remaining calm, establishing rapport with the subject). Specifically, officers were asked to place themselves in the following scenario:

> "While on patrol you receive a call regarding a suspicious person. You arrive at the scene and make contact with a male who fits the description you were given. Though it does not appear that he will be physically combative at this point, he is being loud and using profanity. The suspect

[3] The pre-training survey does not include sub-section 10 related to the Critical Decision-Making Model (CDM) because prior to training officers are unfamiliar with this concept.

> continues to slowly walk backwards away from you despite your order to stop moving."

Using a five-point Likert scale, officers were asked to indicate how important on a 5-point Likert scale (1 = Very Unimportant; 5 = Very Important) they believed specific actions to be when applied to the interaction described in the scenario. After the appropriate reverse coding, higher scores on the 18 survey items presenting the actions indicate a greater alignment of officers' priorities to the principles of the ICAT training program. The first 17 items were adopted from a previous survey evaluation of police training, with the final 18th item ("resolving incidents quickly") being added to supplement the other items. This item was added to underscore the importance of "slowing down" situations following the principles of de-escalation.

B. *Viewpoints on Citizen Interactions*. Officers' views on citizen interactions were measured using seven survey items related to officers' general views of citizen encounters, including issues of officer safety and de-escalation. These items were adopted from a previous evaluation of police training to assess the extent to which the ICAT training curriculum affects officers' perceptions of their ability to impact the outcomes of police-citizen encounters and their belief that training can be effective in improving those outcomes. Officers were asked to indicate their level of agreement to each of the seven survey items on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). After the appropriate reverse coding, higher scores indicate a greater agreement to the tenants taught during the ICAT training program.

C. *Attitudes toward Use of Force*. This section contains 11 items on officers' general attitudes toward using force, including their preference for force, preference for using communication skills, and situations that require force. Respondents were asked to indicate their level of agreement to each item on a 5-point Likert scale which ranged from strongly disagree to strongly agree. These items were adapted from a previously developed police training survey evaluation. After the appropriate reverse coding, higher scores on these items indicate a greater preference for force.

D. *Perspectives on Policing*. This section contains 12 items designed to assess officers' view of the role of police, including the different duties that officers undertake such as working with communities, fighting crime, solving problems, and enforcing the law. Respondents were asked to indicate their level of agreement to each item on a 5-point Likert scale which ranged from strongly disagree to strongly agree. These items were adapted from a previously developed police training survey evaluation, and serve as control measures and are not expected to change as a result of the ICAT training program.

E. *Perceptions of your agency*. This section contains eight items related specifically to the officers' satisfaction with their agency, colleagues, and perceptions of agency culture. Respondents were asked to indicate their level of agreement to each item on a 5-point Likert scale which ranged from very uncertain to very certain (first four items) strongly disagree to strongly agree (last four items). These items were adapted from a previously developed police training survey evaluation, and serve as control measures and are not expected to change as a result of the ICAT training program.

F. *Perceptions of Training*. This section contains seven items related to officers' openness to training and the general utility of police training. Respondents were asked to indicate their level of agreement to each item on a 5-point Likert scale which ranged from strongly disagree to strongly agree. These items were adapted from a previously developed police training evaluation as well as a study on employees' "openness toward change" study conducted by Miller, Johnson, and Grau (1994). These items serve as control measures and are not expected to change as a result of the ICAT training program.

G. *Interactions with Persons in Crisis*. Twelve survey items were used to measure officers' attitudes toward interactions with persons in crisis. As described in the literature review, a person in crisis refers to an individual that may be behaving erratically due to things such as mental disorders, substance abuse, situational stress, and/or intellectual/developmental disabilities. These items were developed by researchers from the IACP/UC Center for Police Research based on materials provided online by PERF for the ICAT training guide. For each survey item, officers were asked to indicate their level of agreement to a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). Higher scores indicate a greater agreement to the tenants taught during the ICAT course.

H. *Attitudes toward Persons in Crisis*. Ten survey items were used to measure officers' attitudes towards persons with mental illness or intellectual/developmental disabilities, persons who abuse substances, and/or persons experiencing situational stress (all

identified as reasons why a person may experience crisis in the ICAT curriculum). Officers were asked to indicate their level of agreement to a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). These items were adapted from the *Community Attitudes toward Mental Illness* (CAMI) scale (Taylor and Dear, 1981). Although only a handful of CAMI items were used in this survey, additional items were added that target the other contributing sources to crisis that are taught in the ICAT training program (such as substance abuse, situational stress, developmental disabilities, etc.). Higher scores indicate a lesser acceptance of persons in crisis along with a lessened agreement to the tenants taught during the ICAT course.

I. *Officer Confidence*. To better understand officers' confidence in handling critical incidents, a one-page dialogue scenario between a person going through a crisis and a police officer was used. The person, "David," is on private property (CIA: Carter Industrial Associates) and is rummaging through a trashcan while having delusions about the CIA. David is unarmed but acting and speaking aggressively to the officer. Officers were asked to indicate their level of confidence (1 = Not Confident at All; 4 = Very Confident) to a series of actions related to this one-page dialogue. This section of the survey contained 13 items related to a respondent's self-efficacy, or confidence, in handing the described scenario. This self-efficacy scale was developed by Broussard and colleagues (2011) and includes a response range of "confidence" scores, with a higher score indicating a higher level of officers' confidence in interacting with subjects in crisis. Self-efficacy, as defined by Bandura (1977) is a person's belief in their ability to perform tasks related to a particular circumstance.

J. *The Critical Decision-Making Model*. This section contains 11 items that were used to measure the utility of the Critical Decision-Making Model (CDM). These items were developed by researchers from the IACP/UC Center for Police Research based on materials provided online by PERF for the ICAT training guide and presented to officers in the post- and follow-up waves of the training survey only. Respondents were asked to indicate their level of agreement to a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). Higher scores indicate officers' greater agreement regarding the utility of the CDM.

In addition to these specific sub-sections, the survey also contained a demographics section, including 10 items prompting respondents to provide information regarding their age, gender, race/ethnicity, highest level of education, prior military experience, current rank, and years of experience in law enforcement (i.e., in law enforcement generally and within their respective agencies). Additionally, respondents were requested to provide information on prior experiences with persons in crisis during their law enforcement career. Finally, respondents were asked about specific training (use of force, mentally ill populations, officer discretion) during the last three years.

e) Supplemental Research Components

In addition to the three training surveys serving as the foundation for this research, UCPD contact cards and focus groups were used to provide supplemental findings to assess the impacts of ICAT training on police officers. Contact cards are forms filled out by UCPD officers during nonconsensual contact with citizens (e.g., during a traffic stop, suspicious persons contact, field interview, or arrest), and officers are required to self-report the use of specific ICAT skills on the

forms. The skills were taken from the learning objectives of Module 6 of the ICAT training program (PERF, 2016b). Specifically, 6 tactical skills are listed: (1) Assigned less-lethal & lethal roles; (2) Isolated subject; (3) Maintained contact & cover roles; (4) Used distance & cover; (5) Used tactical repositioning; (6) Used tactical repositioning as threat changed. Also, four communication skills are listed: (1) Avoided confrontation; (2) Demonstrated empathy & respect; (3) Established dialogue using universal greeting; (4) Gathered pertinent information. Officers are also able to select "N/A" if the opportunity to use ICAT tactical and/or communication skills was not present during that encounter. Data used for this analysis includes 812 contact cards, submitted between November 1, 2018, and December 31, 2019 (13-month period). Ultimately, this data provides preliminary insights as to when and how officers use particular ICAT training skills during their everyday interactions with citizens.

A final data source for this research is the use of focus groups, which provide a qualitative context to the quantitative findings from the analyses of officer surveys. Focus groups are a form of group interview which emphasizes the interaction between participants (Freeman, 2006; Kitzinger, 1995). However, unlike other forms of focus group research, this section does not include qualitative data analysis. Rather this section is strictly used to provide context and understanding to the survey findings and identify opportunities for research moving forward. Specifically, two sets of focus groups were conducted to understand the dynamics surrounding the use of de-escalation, ICAT training, and the Critical Decision-Making Model (CDM). The first group, held on February 18, 2020, was comprised of 8 police officers, 3 of which were supervisors. The second focus group, held February 20, was comprised of 8 police officers, one who was a supervisor, along with two security officers. These groups are an appropriate size for focus group research, as they are small enough to allow everyone to the opportunity to

participate yet large enough to allow for a diversity of opinions (Stewart & Shamdasani, 1990). Further, they were the largest groups that this agency was able to provide at a time, given that patrol shifts are typically comprised of around ten officers per shift. Both sessions were held in the afternoon at the police department behind closed doors. Officers were provided with a series of questions and asked to provide their thoughts. Participants were encouraged to expand upon one another's' thoughts and clarify where appropriate. These findings are largely used to provide context to several research questions posed in this dissertation.

4. Analytical Techniques

This research uses a repeated measures design, and also includes the use of a focus group to provide a qualitative component to the quantitative findings. By looking at differences in officer responses across the pre-training, post-training, and follow-up surveys, researchers can begin to understand whether training has affected officers' attitudes, perceptions, and confidence in a significant way. All analyses were run using SPSS, a statistical package for social sciences data. Due to the small size of this sample (N=62), some may be concerned with the potential bias from non-response of survey items. Preliminary analyses determined there were no items with more than 10% missing responses, therefore non-response bias does not demonstrate a concern for the validity of this study.

Descriptive statistics for all items and scales across each of the three waves are calculated in Chapter 4. For the survey sub-sections related to the research questions, an additive index score will be calculated for each wave where appropriate. Scales were created using face validity, by examining inter-item correlations, by principal components factor analyses, and using Cronbach's alpha statistics. The Cronbach's alpha (α) is a measure of internal consistency between survey items and was calculated and reported for each index or scale created. Groups of

items with a high Cronbach's alpha (above ~ 0.7 based on post-training scores, see Carmines and Zeller, 1979) are grouped to create index values from individual survey items by assigning numerical scores to the responses and calculating the average response score across multiple items. This Cronbach's alpha score is recommended for the reliability between items within a scale (Tavakol & Dennick, 2011).

a) Factor Analysis

Factor Analysis is a useful tool to identify and describe underlying constructs from a series of factors within multivariate data (Costello & Osborne, 2005). Within some of the concepts described above, principal components factor analysis was used to identify initial factor loadings and ascertain the validity of survey items that are grouped tougher. This technique has been used by others in assessing the factors underlying attitudes and perceptions in survey research related to police training (see e.g., Gau, 2014; Rosenbaum & Lawrence, 2017). The "cleanest" factor structures, those with loadings above 0.30 and at least three items, will be extracted from the data (Costello & Osborune, 2005). Varimax rotation will also be used to simplify the data structure, as this is recommended as a commonly beneficial form of rotation (Nourisis, 2011). These factors are exploratory given that there is no pre-existing model to suggest the number of factors or how the items should load.

b) T-Tests

Paired samples T-tests are used to compare the means across different variables between pre-test and post-test samples, pre-test and follow-up samples, and post-test and follow-up samples. T-tests are the most appropriate for sample sizes of less than 120 (Walker and Madden, 2009). Additionally, this approach is appropriate for testing differences in means when the same participants are measured on two separate occasions on the same dependent variable. This type

of analytic approach determines whether the mean difference of two sets of observations is zero (Zimmerman, 1997). If the resulting t-test statistic rejects the null hypothesis of zero mean difference, then there is a statistically meaningful difference between the two observations. Because officer surveys were given a randomly assigned four-digit unique identifier, surveys were able to be matched across waves, allowing for paired sample comparisons. This technique has been used by others with matched samples of police officers when assessing the impacts of certain training programs (see e.g., Bahora et al., 2008; Ritter, Teller, Munetz, & Bonfine, 2010).

c) Regressions

Regression analyses are performed on attitudes that appear to be dependent on other attitudes, as well as on demographic variables. Ordinary Least Squares (OLS) are used to examine the relationships amongst the variables of interest. This approach is appropriate because it controls for combined effects of other independent variables when identifying the effects of a single independent variable on a dependent variable (Walker & Maddan, 2009). Additionally, this technique can be used when using independent and dependent variables based on scales created from survey research (see e.g., Sobol, 2010; Sun & Chu, 2008).

While there is little power to identify patterns by officer gender or race (given the low variation in the sample on these demographics), other officer demographic variables such as experience and education are used to predict variability in the dependent variables. In addition to officer demographics, specific survey items that tap into the officers' perceived ability to handle critical incidents and openness to training are used as a predictor variables for attitudes and perceptions in Wave 2.

Four dependent variables were constructed to measure officers' attitudes related to de-escalation. Three of the four dependent variables—officer confidence in handling critical

incidents (Model 1), officer views on persons in crisis (Model 2), and officer views on citizen interactions (Model 3) —are additive scales also used during the T-test analyses. The fourth dependent variable, "perceived ability to de-escalate" (Model 4), is measured by a single item Likert scale, which asked officers to self-report on a scale of 1 to 5 how much they agreed to the statement, "I am good at de-escalating encounters with citizens" at the 4-month follow up survey. A higher score on the perceived ability to de-escalate variable indicates increased confidence in the officer's de-escalation skills.

Due to the pilot nature of this research, various control variables are included in these models that have been used in prior research (see e.g., Sun and Chu, 2008). Controls included dummy variables measuring rank (measured as patrol= 0 and supervisor= 1), Bachelor's Degree or higher (measured as 0 = less than Bachelors and 1= Bachelors or Graduate degree), and female (0=male, 1=female). UCPD Tenure was measured at the interval level[4] (1= less than 1 year, 2= 1 to 4 years, 3 = 5 to 9 years, 4= 10 to 15 years, 6= 20 or more years). An "openness to training" additive scale was created to measure officer receptivity to training. This scale was based on items 1, 3, 5, and 6 of the *Perceptions of Training* survey items, and has a Cronbach's alpha score of .804. This scale was developed to assess how training receptivity might influence attitudes associated with de-escalation. The final predictor variable included in the models was a single item measuring officer perceived ability to control encounters with citizens. For this item, officers were asked to report, on a scale of 1 to 5, their agreement to the following statement, "I have considerable ability to control the nature of citizen interactions to create positive outcomes." This was intended to measure the officer's perception of their abilities prior to de-

[4] This variable was also collapsed in the models and ran as a dummy variable (0= less than ten years, 1= 10 or more years), but it still was not a significant predictor.

escalation training. The dependent and dependent variables are summarized and displayed in Table 2.

Table 2. Descriptive Statistics for OLS Regression Variables (N=59)

	Minimum	Maximum	Mean	SD
Dependent Variables				
Officer Confidence Handling Critical Incidents	38.00	52.00	45.31	5.22
Views on Interactions with Persons in Crisis	33.00	49.00	42.58	3.78
Views on Citizen Interactions	11.00	35.00	27.88	3.47
Perceived Ability to De-escalate	1.00	5.00	4.32	.57
Independent & Control Variables				
Supervisor	0.00	1.00	.26	.44
Bachelor's Degree or Higher	0.00	1.00	.51	.50
UCPD Tenure	1.00	6.00	3.60	1.51
Female	0.00	1.00	.13	.34
Openness to Training	8.00	20.00	16.64	2.25
Perceived Ability to Control	1.00	5.00	3.95	.81

Before conducting these regressions, several diagnostic techniques were used to ensure the models were suitable. Specifically, the data were checked for linearity, independence of errors, homoscedasticity, and multi-collinearity. Cross-tabulations were conducted with each dependent and independent variable. Scatter plots were also examined to understand relationships amongst variables.

5. Methodological Contributions and Limitations

The primary contribution of this research is that it is a pilot evaluation of an innovative de-escalation training program, and therefore provides preliminary information about programmatic impacts. Its strength is that this research presents an opportunity to test the survey instrument, determine how items load, and refine the instruments for future use. The validation of the survey instruments is a major contribution to the limited body on the methodology of de-escalation training evaluation. Additionally, because this research uses a pretest-posttest design, there is a greater cause to believe that changes in the post-treatment period may be due to the

intervention compared to designs with no pretest component (Shadish, Cook, and Campbell, 2002).

An important consideration for the study will be whether or not survey items load together in a meaningful way (van Teijingen and Hundley, 2001). Given that many of these survey items are being pilot tested as they were created to fit the ICAT training guide, there is no *apriori* knowledge as to how these items will correlate. The validity of these survey items as an accurate measure for the effects of de-escalation training is unknown. However, this research will help with that endeavor—it has to potential to provide critical guidance as to where the survey instruments need refinement.

Conversely, this research does have several limitations. The first major limitation of this research is that is non-experimental, and there is no form of control or comparison group. The lack of a comparison group severely limits the internal validity of the study (Shadish, Cook, and Campbell, 2002). For instance, the lack of a control group means that the study cannot rule out the influence of other factors that might appear as a training effect (Shadish, Cook, and Campbell, 2002). Second, the sample used in this study is relatively small—future research should be conducted with a larger police sample. The small sample size reduces the study's potential power to identify meaningful differences (Lenth, 2001). Furthermore, this small agency had little variation in terms of officer demographics, and cannot test for racial or gendered effects. In terms of analytic strategies, these methods cannot establish causality—though temporal sequencing (before and after training) can be established, other confounding variables cannot be eliminated without the use of a comparison group (Shadish, Cook, & Campbell, 2002). Due to the size of the sample and the nature of the research design, the findings to follow may not be replicated in other police agencies. As explained by Shadish, Cook, and Campbell (2002,

p.18), “most experiments are highly local but have general aspirations”—this is true of this dissertation, particularly given its exploratory nature.

Other limitations include the restricted nature of the program evaluation design. This study only assesses programmatic impacts at the first (reaction) and second (learning) levels, as described by Kirkpatrick (1998). While these two levels are important for understanding, this study fails to consider the last two levels of evaluation, including behavior change and organizational change results. The remaining two levels would provide important aspects to the actual impact of the ICAT training for police. Due to the small size of the sampled police agency, behavioral change in terms of uses of force or citizen/officer injury would be inappropriate (given that the UCPD engages in than five uses of force in any given year).

CHAPTER 5: TRAINING SURVEY RESULTS

This chapter presents the training survey results evaluating the *Integrating Communications, Assessment, and Tactics* (ICAT) training program with the University of Cincinnati Police Division (UCPD), based on a repeated measures survey design. Training surveys were administered to UCPD officers at three points in time: (1) before ICAT training in May 2018, (2) immediately after each officers' training, and (3) approximately 4 months following officers' participation in ICAT training. First, this chapter describes the demographic characteristics and baseline attitudinal measures of UCPD officers trained in ICAT. Second, officer reactions to the ICAT training are described, including their reactions to the Critical Decision-Making Model (CDM) and views of the CDM over time. Next training impacts on specific officer attitudes are examined for particular survey sections, including:

- Use of Force
- Citizen Interactions
    - Priorities during citizen interactions
    - Views on citizen interactions
- Persons in Crisis
    - Interactions with persons in crisis
    - Views on persons in crisis

Various analyses for these sections may include (1) baseline officer response frequencies, (2) immediate training impacts, (3) long-term training impacts, examining training decay, and (4) multivariate analyses. This chapter is designed to assess the effects of the ICAT training program at the reaction and learning levels of evaluation, to answer research questions one through five and seven. In turn, Chapter 6 examines research question six and adds additional contextual information to all research questions through the use of officer focus groups.

1. Officer Demographics and Baseline Assessment

The study sample included UCPD line officers, sergeants, lieutenants, and captains. There was a total of 62 officers eligible for the training when the research began in May of 2018, and Table 3 below contains a breakdown of the sample demographics. The sample is primarily White (90.3%), Male (87.1%) with a majority serving as a patrol officer (72.2%). Roughly half (51.6%) are below the age of 42 years. Approximately 48.4% of the sample holds a Bachelor's degree or higher educational attainment. There are equivalent sizes of less-experienced officers (38.7% with four or fewer years at the UCPD) and more-experienced officers (38.8% with 15 or more years at the UCPD). Roughly 10% of the sample reported prior military experience.

Table 3. UCPD Sample Demographics (N=62)	% (N)
Gender	
Male	87.1 (54)
Female	12.9 (8)
Age	
18 to 25 years old	1.6 (1)
26 to 33 years old	37.1 (23)
34 to 41 years old	12.9 (8)
42 to 49 years old	29.0 (18)
50 + years old	19.4 (12)
UCPD Tenure	
Less than 1 year	4.8 (3)
1 – 4 years	33.9 (21)
5 – 9 years	3.2 (2)
10 – 14 years	19.4 (12)
15 – 19 years	32.3 (20)
20 or more years	6.5 (4)
Race	
Caucasian/White	90.3 (56)
African American/Black	6.5 (4)
Latino/Hispanic	3.2 (2)
Rank	
Patrol Officer	74.2 (46)
Supervisor	21.0 (13)
Command Staff (Captain and above)	4.8 (3)
Law Enforcement Tenure	
1 – 4 years	29.0 (18)
5 – 9 years	11.3 (7)
10 – 14 years	12.9 (8)
15 – 19 years	16.1 (10)
20 or more years	25.8 (16)
NA/Refused	4.8 (3)
Educational Attainment	
High School	6.5 (4)
Less than two years of college	25.8 (16)
Associate's Degree	12.9 (8)
Bachelor's Degree	38.7 (24)
Graduate Degree	9.7 (6)
NA/Refused	6.5 (4)
Military Experience	
Yes	9.7 (6)
No	85.5 (53)
NA/Refused	4.8 (3)

Table 4 presents the baseline measures of officers' views on policing, including their global views on officer priorities and duties, and perceptions on their jurisdiction. Officers were asked to indicate their level of agreement to each of the twelve survey items on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). The average (mean) for each survey item across the three waves is displayed, along with the corresponding standard deviation (s.d.). These survey items provide insights as to ICAT training impacts on officers' more global perspectives on their occupation. Survey waves 1, 2, and 3 are compared to provide an overall sense of changes pre-training to four months later. Overall, scores appear to change very little across the survey waves. However, these items demonstrate some interesting insights. For example, it appears that the average UCPD officer agrees/strongly agrees that law enforcement and community members should work together to solve local problems and that working with the community is an effective means to provide services to an area. Additionally, the average UCPD response to item 9, "as a police officer, I see myself primarily as a civil servant", rose from a score of neutral (mean=3.98) to a score of agreement in the post-training and follow-up surveys (mean=4.15 and 4.17, respectively). Most officers report feeling "neutral" regarding the dangerousness of their jurisdiction and the chance of being assaulted while on the job.

Table 4. UCPD Officer Perspectives on Policing (N=62)

	Scoring	Wave 1 Mean (s.d.)	Wave 2 Mean (s.d.)	Wave 3 Mean (s.d.)
1. Enforcing the law is a patrol officer's most important responsibility	1=Strongly Disagree	2.70 (0.83)	2.39 (0.83)	2.62 (0.90)
2. Law enforcement and community members must work together to solve local problems.	2=Disagree	4.47 (0.57)	4.44 (0.54)	4.36 (0.58)
3. Working with the community to solve problems is an effective means of providing services to this area.	3=Neutral	4.45 (0.57)	4.44 (0.57)	4.34 (0.61)
4. I routinely collaborate with community members in my daily duties	4=Agree	3.85 (0.88)	3.90 (0.82)	4.02 (0.74)
5. My primary responsibility as a police officer is to fight crime.	5=Strongly Agree	2.63 (0.69)	2.37 (0.83)	2.74 (0.91)
6. As a police officer, I have a primary responsibility to protect the constitutional rights of residents.		4.12 (0.67)	4.15 (0.58)	4.16 (0.70)
7. A primary responsibility of a police officer is to build trust between the department and community.		4.20 (0.76)	4.22 (0.70)	4.26 (0.61)
8. As a police officer, it is important that I have non-enforcement contacts with the public.		4.50 (0.60)	4.44 (0.65)	4.47 (0.66)
9. As a police officer, I see myself primarily as a civil servant.		3.98 (0.77)	4.15 (0.74)	4.17 (0.73)
10. My primary role is to control predatory suspects that threaten members of the public.		3.03 (0.88)	2.97 (0.98)	3.09 (0.84)
11. The jurisdiction I work in is dangerous.		3.52 (1.05)	3.41 (1.05)	3.02 (1.03)
12. As a police officer, there is a good chance you will be assaulted while on the job.		3.69 (0.93)	3.61 (1.00)	3.53 (0.98)

Table 5 displays each of the eight survey items used to assess respondents' perceptions of their police agency, the UCPD. The scoring responses for each of the items are shown in the table. The average (mean) for each survey item across the three waves is displayed, along with the corresponding standard deviation (s.d.). Survey waves 1, 2, and 3 are compared to provide an

overall sense of changes in officer responses pre-training to four months later. Of note is that officer satisfaction with their job rose slightly from the pre-training to the follow-up waves (item 4), and this is further demonstrated in changes for survey items 6 and 7. Overall, it appears the officer morale improved somewhat between the start of the study (May 2018) and the end of the study period (February 2019).

Table 5.UCPD Officer Perceptions of Agency (N=62)

	Scoring	Wave 1 Mean (s.d.)	Wave 2 Mean (s.d.)	Wave 3 Mean (s.d.)
1.The culture of my agency is going in a positive direction	1=Very Uncertain 2=Uncertain	2.70 (1.15)	2.63 (1.23)	2.86 (1.22)
2. I will fit in with my agency culture as it changes in the upcoming years.	3=Neutral	3.53 (1.13)	3.59 (1.25)	3.53 (1.17)
3. My agency will provide me with adequate opportunities for professional development in the future.	4=Certain 5=Very Certain	3.40 (1.18)	3.34 (1.14)	3.22 (1.34)
4. Overall, I am satisfied with my job.	1=Strongly Disagree	3.27 (1.02)	3.34 (1.20)	3.57 (1.09)
5. I enjoy working with my colleagues.	2=Disagree	4.05 (0.75)	4.10 (0.76)	3.98 (0.76)
6. Overall, this is a good agency to work for.	3=Neutral	3.50 (0.98)	3.49 (1.10)	3.43 (1.16)
7. I *never* second-guess my decision to work in this agency.	4=Agree	2.83 (1.18)	2.83 (1.22)	3.03 (1.23)
8. I *never* second-guess my decision to be a police officer.	5=Strongly Agree	3.60 (1.27)	3.58 (1.36)	3.71 (1.23)

Table 6 displays seven survey items asked to assess respondents' perceptions related to training across the three waves of the study. Survey waves 1, 2, and 3 are compared to provide an overall sense of changes in officer responses pre-training to four months later Overall, it appears that most officers agree/strongly agreed that they were "open" to using new training (item 1), that it was important for police agencies to continually add innovative training (item 5),

and that training makes officers more effective in their work (item 6). Generally, this sample was open to new training, and these survey items remained relatively stable across the study period.

Table 6. UCPD Officer Perceptions on Training (N=62)

	Scoring	Wave 1 Mean (s.d.)	Wave 2 Mean (s.d.)	Wave 3 Mean (s.d.)
1. I would consider myself "open" to using new training in my everyday work.	1=Strongly Disagree	4.22 (0.59)	4.36 (0.61)	4.30 (0.60)
2. I am reluctant to change the way I do my work now.	2=Disagree	2.17 (0.79)	1.93 (0.67)	2.14 (0.72)
3. I look forward to new training opportunities.	3=Neutral	4.10 (0.82)	4.15 (0.85)	4.11 (0.75)
4. Police officer are over-trained in areas that are unhelpful in their work.	4=Agree	3.08 (1.05)	2.56 (1.06)	2.91 (1.04)
5. It is important for police agencies to continually add innovative training.	5=Strongly Agree	4.22 (0.56)	4.32 (0.67)	4.23 (0.68)
6. Training makes me more effective in my work.		4.07 (0.80)	4.25 (0.76)	4.14 (0.74)
7. New training may reduce officer safety.		2.57 (1.13)	2.39 (1.13)	2.82 (1.14)

These measures described above provide some insights as to the sample used in this research. Most UCPD officers agreed to tenants related to community policing and felt neutral regarding the dangerousness of their jurisdiction. UCPD officers reported being generally open to new training, and analyses revealed modest and positive changes in officer morale across the study period. As such, this sample appears to be well-suited to demonstrate any changes related to the ICAT training program during the study period.

2. Officer Reactions' to ICAT Training

Research demonstrates that for training to effectively change attitudes and subsequent behavior, participants should hold a positive view of said training (Kirkpatrick, 1998). The following information includes data that was generated internally by the UCPD Training Section,

collected electronically at the end of each training session in 2018, and shared as part of this research. This particular sample included 74 sworn officers, security officers, and dispatchers (differing slightly from the main survey sample analyzed in this chapter). Table 7 displays the results of general training satisfaction, immediately after the officers were trained. A few highlights include that nearly three-fourths of respondents enjoyed the training and found the training was applicable to their job. Notably, fewer than 10% of respondents held any negative view of the training.

Table 7. UC Dept. of Public Safety Receptivity to ICAT Training (N=74)

This Training is...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. What I expected	1.4%	2.7%	21.6%	50.0%	24.3%
2. Applicable to my job	1.4%	1.4%	12.2%	54.1%	31.1%
3. Aligned with the objectives and course description	0.0%	1.4%	12.2%	56.8%	29.7%
4. Well-paced within the allotted time	1.4%	4.1%	12.2%	58.1%	24.3%
5. Relevant to the course objectives	0.0%	1.4%	12.2%	58.1%	28.4%
6. Well organized	0.0%	1.4%	16.2%	52.7%	29.7%
7. Easy to read	1.4%	1.4%	15.1%	56.2%	26.0%
8. I enjoyed this course	0.0%	5.4%	20.3%	50.0%	24.3%
9. I will recommend this course to others	0.0%	1.4%	27.0%	45.9%	25.7%
10. I am interested in a follow up course	1.4%	8.1%	27.0%	37.8%	25.7%

Importantly, these findings demonstrate that officers appear to be receptive to ICAT training—they generally like and enjoy the training course. These positive views suggest the ICAT training could positively impact officers' attitudes and ultimately their behavior. This is

the first step to demonstrating how ICAT may serve as a potentially effective de-escalation training program.

However, to supplement the understanding of officers' ICAT training receptivity, officers were surveyed in-depth regarding the Critical Decision-Making Model (CDM) component of the curriculum. The CDM is the training's prescribed cognitive framework to guide officer decision-making. Recognizing the importance of officers' reactions to this component, officers were presented with 11 survey items designed to assess their perceived utility of the CDM. The questions were first asked on the post-training survey (after the concepts were introduced to officers), and then again during the four-month follow-up survey. After the appropriate reverse coding, higher scores indicate greater agreement that the CDM is a useful component of the ICAT training.

Table 8 displays each of the 11 survey items used to assess respondents' attitudes toward the CDM, showing the frequencies for officer perceptions at the post-training period. Positively worded survey items are grouped first, followed by those that are negatively worded. These scores set a baseline for the examination of changes after ICAT training. Most officers agreed/strongly agreed that the CDM helped them assess risks in a situation, helped to identify options for action in a situation, that it helped remind officers to continuously gather information. Additionally, most officers agreed that they felt confident using the CDM during an encounter with a person in crisis.

Table 8. UCPD Officer Post-Training Responses, CDM Utility (N=59)

The CDM…	Strongly Disagree % (n)	Disagree % (n)	Neutral % (n)	Agree % (n)	Strongly Agree % (n)
1. … increases my decision-making skills during everyday situations.	0 (0)	3.4 (2)	22.0 (13)	52.5 (31)	22.0 (13)
2. … helps me to assess the risks in a situation.	0 (0)	1.7 (1)	8.5 (5)	66.1 (39)	23.7 (14)
3. … helps me identify my options for action in a situation.	0 (0)	3.4 (2)	8.5 (5)	66.1 (39)	22.0 (13)
4. … helps me select an option to resolve a situation.	0 (0)	3.4 (2)	13.6 (8)	62.7 (37)	20.3 (12)
5. … reminds me to continuously gather information during a situation.	0 (0)	3.4 (2)	3.4 (2)	67.8 (40)	25.4 (15)
6. … helps me review the action I took during a situation.	0 (0)	3.4 (2)	18.6 (11)	55.9 (33)	22.0 (13)
7. … helps me to explain my decision-making after I act in a situation.	1.7 (1)	0 (0)	13.6 (8)	61. (36)	23.7 (14)
8. I am confident using the CDM during an encounter with a person in crisis.	0 (0)	1.7 (1)	11.9 (7)	66.1 (39)	20.3 (12)
9. … is too complicated.	27.1 (16)	52.5 (31)	15.3 (9)	3.4 (2)	1.7 (1)
10. … often takes too much time to use in encounters with a person in crisis.	22.0 (13)	66.1 (39)	11.9 (7)	0 (0)	0 (0)
11. … may make officers hesitate to take action when needed.	10.2 (6)	39.0 (23)	35.6 (21)	11.9 (7)	3.4 (2)

To explore how best to measure changes in attitudes influenced by the CDM, both factor analysis and additive scales are compared. First, the underlying structures of the Critical Decision-Making Model (CDM) utility were subjected to exploratory factor analysis using principal components analysis. These post-training survey items, shown in Table 9, had a KMO measure of sampling adequacy score of 0.901, indicating these items are suitable for factor analysis. A single factor emerged, with an eigenvalue of 7.520, explaining 68.4% of the variance. The individual item factor loadings are shown in Table 9 below, along with the Cronbach's alpha score for internal consistency. The items load well together on a single factor.

Table 9. Factor Matrix of the CMD Utility Scale (N = 59)

The CDM…	Factor 1 Loadings
1. … increases my decision-making skills during everyday situations.	.822
2. … helps me to assess the risks in a situation.	.871
3. … helps me identify my options for action in a situation.	.923
4. … helps me select an option to resolve a situation.	.870
5. … reminds me to continuously gather information during a situation.	.883
6. … helps me review the action I took during a situation.	.867
7. … helps me to explain my decision-making after I act in a situation.	.834
8. I am confident using the CDM during an encounter with a person in crisis.	.805
9. … is too complicated. [Reverse Coded]	.707
10. … often takes too much time to use in encounters with a person in crisis. [Reverse Coded]	.814
11. … may make officers hesitate to take action when needed. [Reverse Coded]	.663
Cronbach's α	0.947

Given that a singular factor emerged from the *CDM Utility* factor analysis, an additive scale was also created for each wave, based on a summed score of each of the eleven items. This is shown in Table 10, along with the respondents' average score and standard deviation for each survey item. Wave 2 and Wave 3 are compared to asses training decay[5]. T-test results for changes in officer attitudes, shown in Table 8, indicate statistically significant changes in the mean score for nine of 11 items from the post-training to the follow-up survey, in the *opposite direction.* This indicates that four months after ICAT training, officers were less likely to indicate the utility of the CDM in their law enforcement work. This is further reinforced when looking at the additive *CDM Utility Scale*, which demonstrates a statistically significant change in the follow-up score compared to the post-training score. Importantly, these changes are

[5] Note that this survey was not given for Wave 1, as officers would be unfamiliar with the concept prior to ICAT training.

inconsistent with ICAT training objectives. Potential reasons for these counter-intuitive findings are explored in the discussion section of this dissertation.

Table 10. UCPD Officer Perceptions of CDM Utility Survey Results

The CDM…	**Wave 2 Mean**	**Wave 3 Mean**	**T Value**
1. … increases my decision-making skills during everyday situations. (N=57)	3.93	3.74	2.186*
2. … helps me to assess the risks in a situation. (N=57)	4.14	3.79	3.682**
3. … helps me identify my options for action in a situation. (N=57)	4.09	3.84	2.597*
4. … helps me select an option to resolve a situation. (N=57)	4.02	3.77	2.510*
5. … reminds me to continuously gather information during a situation. (N=56)	4.18	3.91	2.974**
6. … helps me review the action I took during a situation. (N=57)	3.98	3.81	1.865
7. … helps me to explain my decision-making after I act in a situation. (N=57)	4.05	3.77	2.919**
8. I am confident using the CDM during an encounter with a person in crisis. (N=57)	4.04	3.75	3.420**
9. … is too complicated. [Reverse Coded] (N=57)	3.98	3.74	2.034*
10. … often takes too much time to use in encounters with a person in crisis. [Reverse Coded] (N=57)	4.09	3.63	4.173**
11. … may make officers hesitate to take action when needed. [Reverse Coded] (N=57)	3.39	3.00	3.164**
CDM Utility Scale[6] **(N=56)**	**43.80**	**40.70**	**4.304****

**p < .01; *p < .05

In summary, UCPD officers indicated that they were receptive and satisfied with the ICAT training program. Nearly three-fourths of respondents enjoyed the training and would also recommend this course to others. These results suggest that law enforcement officers will likely be receptive to ICAT training and that ICAT may serve as a potentially effective de-escalation training program. However, the CDM component of the ICAT survey demonstrated changes in

[6] All items included. Cronbach's Alpha index of .947 for post-training and .954 for follow-up.

the opposite direction as officers indicated they found the CDM to be less useful over time. This particular area of the training curricula and delivery should be re-visited by UCPD training staff.

3. Officer Attitudes Toward Use of Force

Part of this research is dedicated to understanding the impact of ICAT training on officer attitudes toward use of force. Table 11 below displays each of the 11 survey items used to assess respondents' attitudes toward use of force, showing the frequencies for officer perceptions at the pre-training period—setting a baseline for the examination of changes after ICAT training. Positively worded survey items are grouped together first, followed by those that are negatively worded. It is expected that ICAT training would result in officers holding a lesser preference for the use of force, rather officers should opt for other forms of conflict resolution. It appears that UCPD officers report some mixed views on use of force. For example, nearly 88% of the officers strongly disagreed or disagreed that verbally disrespectful subjects sometimes deserve physical force (item 7), and about 75% agreed or strongly agreed that trying to talk their way out of a situation is always safer than using force (item 3). However, a majority of officers agreed/strongly agreed that it was important that fellow officers trust them to handle themselves in a fight (item 9) and nearly one-third of officers agreed or strongly agreed that refraining from using force when it is legally allowable puts themselves or others at risk (item 8).

Table 11. UCPD Officer Pre-Training Responses, Attitudes Toward Use of Force (N=60)

	Strongly Disagree % (n)	Disagree % (n)	Neutral % (n)	Agree % (n)	Strongly Agree % (n)
1. Officers are *NOT* allowed to use as much force as is necessary to make suspects comply.	28.3 (17)	43.3 (26)	15.0 (9)	10.0 (6)	3.3 (2)
2. It is important that my fellow officers trust me to handle myself in a fight.	0 (0)	1.7 (1)	15.0 (9)	56.7 (34)	26.7 (16)
3. Trying to talk my way out of a situation is always safer than using force.	0 (0)	11.7 (7)	15.0 (9)	43.3 (26)	30.0 (18)
4. It is important that my fellow officers trust my communication skills.	0 (0)	0 (0)	1.7 (1)	48.3 (29)	50.0 (30)
5. I respect officers' ability to talk suspects down rather than using force to make them comply.	0 (0)	3.3 (2)	0 (0)	51.7 (31)	45.0 (27)
6. It is sometimes necessary to use more force than is technically allowable.	28.8 (17)	35.6 (21)	18.6 (11)	16.9 (10)	0 (0)
7. Verbally disrespectful subjects sometimes deserve physical force.	50.0 (30)	38.3 (23)	8.3 (5)	3.3 (2)	0 (0)
8. Refraining from using force when you are legally able to puts yourself and other officers at risk.	5.1 (3)	20.3 (12)	42.4 (25)	28.8 (17)	3.4 (2)
9. It is important to have a reputation that you are an officer willing to use force.	23.3 (14)	43.3 (26)	23.3 (14)	10.0 (6)	0 (0)
10. Not using force when you could have makes suspects more likely to resist in future interactions.	16.9 (10)	42.4 (25)	35.6 (21)	3.4 (2)	1.7 (1)
11. Generally speaking, if force has to be used, it is better to do so earlier in an interaction with a suspect, as opposed to later.	18.3 (11)	35.0 (21)	38.3 (23)	6.7 (4)	1.7 (1)

a) Immediate Training Impacts

Next, two methods were compared to explore the measurement of changes in these attitudes—factor analysis and the creation of additive (summed) scales. Specifically, post-training data for officers were subjected to exploratory factor analysis using principal components analysis along with orthogonal varimax rotation with Kaiser Normalization. The

Kaiser-Mayer-Oklin (KMO) test for sampling adequacy had a measure of .675, indicating these items were suitable for factor analysis (Tabachnick & Fidell, 2007). Four factors emerged, each with an eigenvalue greater than 1 (Kaiser, 1960), accounting for 62.4% of the total variance. The magnitudes of eigenvalues were 2.786, 1.885, 1.138, and 1.056, respectively. The Cronbach's alpha score of .444 for all eleven items further suggests these are not all representative of a single factor. The bottom row of Table 12 provides a Cronbach's alpha score for the subgroups of items, according to how they load on a factor. All scores are relatively low, indicating they are not suitably correlated. According to Velicer and Fava (1998), a minimum number of three items per factor is required for a stable factor. Based on this criterion, Factors 3 and 4 may not be as stable as the first two factors. Factor analysis does not appear very suitable for these survey items using this sample.

Table 12. Rotated Factor Matrix of the Use of Force Scale (N = 59)

	Factor 1 Loadings	Factor 2 Loadings	Factor 3 Loadings	Factor 4 Loadings
Refraining from using force when you are legally able to puts yourself and other officers at risk.	.415	--	--	--
It is important to have a reputation that you are an officer willing to use force.	.752	--	--	--
It is important that my fellow officers trust me to handle myself in a fight.	.627	--	--	--
Generally speaking, if force has to be used, it is better to do so earlier in an interaction with a suspect, as opposed to later.	.713	--	--	--
Trying to talk my way out of a situation is always safer than using force.	--	.608	--	--
It is important that my fellow officers trust my communication skills.	--	.716	--	--
I respect officers' ability to talk suspects down rather than using force to make them comply.	--	.602	--	--
It is sometimes necessary to use more force than is technically allowable.	--	--	.793	--
Verbally disrespectful subjects sometimes deserve physical force.	--	--	.841	--
Officers are *NOT* allowed to use as much force as is necessary to make suspects comply.	--	--	--	.839
Not using force when you could have makes suspects more likely to resist in future interactions.	--	--	--	.633
Cronbach's α	.564	.425	.579	.397

Additive scales were also considered for officer attitudes related to use of force, and inter-item correlations were analyzed. However, given the incongruent nature of many of these individual item correlations, acceptable reliability scores could not be attained and no additive scale was created. Table 13 below contains the results of t-test comparisons for each item, where a higher score indicates a greater preference for the use of force after the appropriate reverse coding. It is expected that ICAT training would correspond with a reduction in these scores over time. Pre-test (Wave 1) means are compared to post-test (Wave 2) means to demonstrate ICAT training impacts. An asterisk (*) denotes T-Test values which demonstrated a significant difference. Table 11 demonstrates that six of the 11 post-training survey items were statistically

significant from pre-training scores, with all post-training scores lower than pre-training scores indicative of positive training impacts in the expected directions.

Table 13. UCPD Officer Attitudes Toward Use of Force Survey T-Test Results, Wave 1 to Wave 2

	Wave 1 Mean	Wave 2 Mean	T Value
1. It is sometimes necessary to use more force than is technically allowable. (N=55)	2.22	1.73	3.956**
2. Verbally disrespectful subjects sometimes deserve physical force. (N=57)	1.61	1.42	2.029*
3. Refraining from using force when you are legally able to puts yourself and other officers at risk. (N=56)	3.02	2.46	4.538**
4. It is important to have a reputation that you are an officer willing to use force. (N=57)	2.19	1.88	2.042*
5. Not using force when you could have makes suspects more likely to resist in future interactions. (N=56)	2.29	1.95	2.549*
6. It is important that my fellow officers trust me to handle myself in a fight. (N=57)	4.07	3.89	1.746
7. Generally speaking, if force has to be used, it is better to do so earlier in an interaction with a suspect, as opposed to later. (N=57)	2.40	1.98	2.767**
8. Officers are *NOT* allowed to use as much force as is necessary to make suspects comply. [Reverse Coded] (N=57)	3.88	4.05	-1.237
9. Trying to talk my way out of a situation is always safer than using force. [Reverse Coded] (N=57)	2.12	2.05	.428
10. It is important that my fellow officers trust my communication skills. [Reverse Coded] (N=57)	1.51	1.49	.207
11. I respect officers' ability to talk suspects down rather than using force to make them comply. [Reverse Coded] (N=57)	1.63	1.46	1.802

**p < .01; *p < .05

b) Training Decay

To assess training decay, t-test comparisons of the post-training (Wave 2) scores to the follow-up (Wave 3) scores were conducted. Table 14 demonstrates that three of the 11 follow-up survey items measuring officer attitudes toward use of force were statistically different from the post-test scores. One item (item 1) demonstrates a reduction in score, as would be desired from

the ICAT training, but two of the significant changes (items 5 and 11) increase in their score which is inconsistent with the ICAT training objectives. Scores that are higher at the follow-up period more closely resemble the officers' initial pre-training score, demonstrating a training decay effect for attitudes toward use of force. However, most of these score increases are not statistically significant. Again, no scale was created for this section because acceptable reliability scores could not be attained.

Table 14. UCPD Officer Attitudes Toward Use of Force Survey T-Test Results, Wave 2 to Wave 3

	Wave 2 Mean	Wave 3 Mean	T Value
1. It is sometimes necessary to use more force than is technically allowable. (N=54)	1.83	2.04	-1.530
2. Verbally disrespectful subjects sometimes deserve physical force. (N=56)	1.43	1.61	-1.866
3. Refraining from using force when you are legally able to puts yourself and other officers at risk. (N=56)	2.50	2.71	-1.848
4. It is important to have a reputation that you are an officer willing to use force. (N=56)	1.84	2.21	-2.969**
5. Not using force when you could have makes suspects more likely to resist in future interactions. (N=56)	2.00	2.20	-1.796
6. It is important that my fellow officers trust me to handle myself in a fight. (N=56)	3.89	3.91	-.184
7. Generally speaking, if force has to be used, it is better to do so earlier in an interaction with a suspect, as opposed to later. (N=56)	1.98	2.38	-3.667**
8. Officers are *NOT* allowed to use as much force as is necessary to make suspects comply. [Reverse Coded] (N=56)	4.11	3.71	2.210*
9. Trying to talk my way out of a situation is always safer than using force. [Reverse Coded] (N=55)	1.96	2.16	-1.628
10. It is important that my fellow officers trust my communication skills. [Reverse Coded] (N=54)	1.52	1.54	-.191
11. I respect officers' ability to talk suspects down rather than using force to make them comply. [Reverse Coded] (N=56)	1.48	1.52	-.405

**p < .01; *p < .05

In summary, ICAT training appears to have some significant impacts on officer attitudes towards use of force, in the expected directions. T-test results indicated promising findings,

where six of the 11 post-training survey items were statistically significant from pre-training scores, with all post-training scores lower than pre-training scores indicative of positive training impacts. When 4-month follow-up scores were compared to post-training values, the changes were inconsistent across the items. Given that some follow-up survey item scores move closer to the initial pre-training scores, some training decay is demonstrated.

4. Officer Attitudes Towards Citizens

Officers' self-reported attitudes related to interactions with citizens are also critical to this research. Two survey sections assessed these attitudes, including *Priorities During Citizen Interactions* and *Officer Views on Citizen Interactions.* Table 15 below displays the 18 survey items asked to assess respondents' priorities during citizen interactions, showing the frequencies for officer perceptions at the pre-training period. Positively worded survey items are grouped first, followed by those that are negatively worded. Officers were asked to rate the level of importance (1 = Very Unimportant; 5 = Very Importance) to specific actions when applied to the interaction described in a specific scenario. In general, very few officers reported finding any of the actions unimportant, except those items which were negatively worded. For instance, over one-third of officers reported that resolving the incident quickly was very unimportant/unimportant (item 18). Nearly all officers identified remaining calm (item 3), maintaining self-restraint (item 5), and trying to talk the subject into complying (item 15) as very important or important.

Table 15. UCPD Officer Pre-Training Responses, Priorities During Citizen Interactions (N=60)

	Very Unimportant % (n)	Unimportant % (n)	Neutral % (n)	Important % (n)	Very Important % (n)
1. Being respectful toward the subject	1.7 (1)	0 (0)	11.7 (7)	38.3 (23)	48.3 (29)
2. Establishing rapport with the subject	3.3 (2)	0 (0)	1.7 (1)	45.0 (27)	50.0 (30)
3. Remaining calm	1.7 (1)	0 (0)	0 (0)	28.3 (17)	70.0 (42)
4. Explaining the reason you've made contact with the subject	1.7 (1)	0 (0)	3.3 (2)	36.7 (22)	56.7 (34)
5. Maintaining self-restraint	1.7 (1)	0 (0)	1.7 (1)	23.3 (1)	73.3 (44)
6. Being polite to the subject	3.3 (2)	5.0 (3)	13.3 (8)	43.3 (26)	35.0 (21)
7. Allowing the subject to explain his side of the story	1.7 (1)	1.7 (1)	8.3 (5)	50.0 (30)	38.3 (23)
8. Considering the subject's side of the story	1.7 (1)	0 (0)	13.3 (8)	56.7 (34)	28.3 (17)
9. Thinking about how my actions may impact people other than the subject	1.7 (1)	3.3 (2)	11.7 (7)	46.7 (28)	36.7 (22)
10. Getting the subject to cooperate without using force	1.7 (1)	0 (0)	3.3 (2)	23.3 (14)	71.7 (43)
11. Thinking through possible alternatives before I act	1.7 (1)	0 (0)	1.7 (1)	45.8 (27)	50.8 (30)
12. Not making a decision about what to do until you've gathered all necessary information	1.7 (1)	3.3 (2)	10.0 (6)	38.3 (23)	46.7 (28)
13. Explaining to the subject the reasons for your decisions	1.7 (1)	6.7 (4)	20.0 (12)	48.3 (29)	23.3 (14)
14. Going with your gut feeling when deciding how to act	1.7 (1)	10.0 (6)	45.0 (27)	35.0 (21)	8.3 (5)
15. Trying to talk the subject into complying	1.7 (1)	0 (0)	0 (0)	40.0 (24)	58.3 (35)
16. Earning the subject's trust	1.7 (1)	1.7 (1)	11.7 (7)	58.3 (35)	26.7 (16)
17. Establishing physical control over the subject	8.3 (5)	0 (0)	40.0 (24)	38.3 (23)	13.3 (8)
18. Resolving the incident quickly	8.3 (5)	30.0 (18)	38.3 (23)	13.3 (8)	10.0 (6)

Table 16 displays each of the seven survey items assessing respondents' views on citizen interactions. Officers were asked to indicate their level of agreement to each of the survey items on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree), and the pre-training

frequency responses are shown below. Survey items are similarly grouped by the direction in which they are worded. In general, most officers agreed/strongly agreed that they have considerable ability to control the nature of citizen interactions to create positive outcomes (item 1), and overwhelmingly agreed that officers can be trained in a variety of ways that increase the likelihood of positive and safe encounters with citizens.

Table 16. UCPD Officer Pre-Training Responses, Officer Views on Citizen Interactions (N=60)

	Strongly Disagree % (n)	Disagree % (n)	Neutral % (n)	Agree % (n)	Strongly Agree % (n)
1. I have considerable ability to control the nature of citizen interactions to create positive outcomes.	1.7 (1)	3.3 (2)	15.0 (9)	58.3 (35)	21.7 (13)
2. I am good at identifying officer safety risks in citizen encounters.	0 (0)	0 (0)	3.3 (2)	66.7 (40)	30.0 (18)
3. In tense citizen encounters, the most important thing is that I get home safely.	0 (0)	5.0 (3)	10.0 (6)	38.3 (23)	46.7 (28)
4. Officers can be trained to increase the likelihood of positive encounters with citizens.	0 (0)	0 (0)	3.3 (2)	50.0 (30)	46.7 (28)
5. Officers can be trained to improve their ability to identify officer safety risks in citizen encounters.	0 (0)	0 (0)	0 (0)	45.0 (27)	55.0 (33)
6. Officers can be trained to improve their ability to de-escalate citizen encounters.	0 (0)	0 (0)	1.7 (1)	45.0 (27)	53.3 (32)
7. I am good at de-escalating encounters with citizens.	0 (0)	0 (0)	6.7 (4)	60.0 (36)	33.3 (20)

a) Immediate Training Impacts

Next, exploratory factor analysis was conducted for both survey sections. The first section, *Priorities During Citizen Interactions*, is analyzed using principal components analysis along with orthogonal varimax rotation with Kaiser Normalization. These eighteen items had a KMO index score of 0.859, indicating proper suitability. Grouped, the items had a Cronbach's alpha score of 0.920, indicating a high level of internal consistency. The bottom row of Table 17 provides a Cronbach's alpha score for the subgroups of items, according to how they load on a

factor. Four factors emerged, each with an eigenvalue greater than 1, accounting for 74.9% of the total variance. The magnitudes of eigenvalues were 10.011, 1.261, 1.127, and 1.074, respectively. However, based on the recommendation of at least 3 items loading onto a single factor for stability, Factors 3 and 4 may not be as stable as the first two factors.

Table 17. Rotated Factor Matrix of Priorities During Citizen Interactions Scale, Wave 2 (N=59)

	Factor 1 Loadings	Factor 2 Loadings	Factor 3 Loadings	Factor 4 Loadings
Establishing rapport with the subject	.713	--	--	--
Remaining calm	.748	--	--	--
Maintaining self-restraint	.808	--	--	--
Thinking about how my actions may impact people other than the subject	.571	--	--	--
Getting the subject to cooperate without using force	.882	--	--	--
Thinking through possible alternatives before I act	.834	--	--	--
Not making a decision about what to do until you've gathered all necessary information	.638	--	--	--
Trying to talk the subject into complying	.914	--	--	--
Being respectful toward the subject	--	.596	--	--
Explaining the reason you've made contact with the subject	--	.781	--	--
Being polite to the subject	--	.760	--	--
Allowing the subject to explain his side of the story	--	.756	--	--
Considering the subject's side of the story	--	.758	--	--
Explaining to the subject the reasons for your decisions	--	.705	--	--
Earning the subject's trust	--	.665	--	--
Establishing physical control over the subject [Reverse Coded]	--	--	.788	--
Resolving the incident quickly [Reverse Coded]	--	--	.751	--
Going with your gut feeling when deciding how to act	--	--	--	.893
Cronbach's α	**.947**	**.921**	**.330**	**--**

To investigate the underlying structure of *Views on Citizens* scale, the second survey section to assess attitudes towards citizen interactions, data for officers were subjected to factor

analysis using principal components analysis. These items had a KMO index score of 0.859, indicating these items are suitable for factor analysis. A single factor emerged, with an eigenvalue of 4.201, explaining 60.0% of the variance. The factor loadings are shown in Table 18. The Cronbach's alpha reliability estimate was 0.759, indicating a high level of internal consistency between survey items (Carmines & Zeller, 1979).

Table 18. . Factor Matrix of the Views on Citizens Interactions Scale, Wave 2 (N=59)

	Factor 1 Loadings
I have considerable ability to control the nature of citizen interactions to create positive outcomes.	.757
I am good at identifying officer safety risks in citizen encounters.	.735
I am good at de-escalating encounters with citizens.	.809
Officers can be trained to increase the likelihood of positive encounters with citizens.	.828
Officers can be trained to improve their ability to identify officer safety risks in citizen encounters.	.903
Officers can be trained to improve their ability to de-escalate citizen encounters.	.893
In tense citizen encounters, the most important thing is that I get home safely.	.367
Cronbach's α	.759

Given that both of these sections demonstrated suitable inter-item correlations and reliabilities, additive scales were also created. Changes in these attitudes towards citizens were analyzed using paired sample t-test comparisons. Pre-test (Wave 1) means are compared to post-test (Wave 2) means to demonstrate immediate ICAT training impacts. It is expected that the ICAT training would result in an increase in the scores captured in the survey related to these attitudes, indicating a greater agreement to the tenets taught during ICAT. Table 19 below demonstrates that only 2 of the 18 items demonstrated a statistically significant change in post-training results when compared to pre-training results, and move in the expected direction. The additive *Priorities During Citizen Interactions Scale*, composed of each of these 18 items,

demonstrates a statistically significant increase from pre-training to the post-training, indicative of positive training impacts.

Table 19. UCPD Officer Priorities During Citizen Interactions T-Test Results, Wave 1 to Wave 2

	Wave 1 Mean	Wave 2 Mean	T Value
1. Being respectful toward the subject (N=57)	4.33	4.47	-1.383
2. Establishing rapport with the subject (N=57)	4.40	4.47	-.629
3. Remaining calm (N=57)	4.63	4.65	-.227
4. Explaining the reason you've made contact with the subject (N=56)	4.52	4.39	1.308
5. Maintaining self-restraint (N=57)	4.67	4.65	.241
6. Being polite to the subject (N=57)	4.04	4.30	-1.872
7. Allowing the subject to explain his side of the story (N=57)	4.23	4.44	-1.726
8. Considering the subject's side of the story (N=57)	4.12	4.21	-1.043
9. Thinking about how my actions may impact people other than the subject (N=57)	4.14	4.23	-.671
10. Getting the subject to cooperate without using force (N=57)	4.65	4.56	1.093
11. Thinking through possible alternatives before I act (N=56)	4.45	4.55	-1.181
12. Not making a decision about what to do until you've gathered all necessary information (N=57)	4.25	4.25	.000
13. Explaining to the subject the reasons for your decisions (N=57)	3.86	3.98	-1.044
14. Going with your gut feeling when deciding how to act (N=57)	3.37	3.40	-.256
15. Trying to talk the subject into complying (N=57)	4.54	4.63	-1.218
16. Earning the subject's trust (N=57)	4.07	4.51	-4.128**
17. Establishing physical control over the subject [Reverse Coded] (N=57)	2.42	2.61	-1.446
18. Resolving the incident quickly [Reverse Coded] (N=57)	3.16	3.93	-4.758**
Priorities During Citizen Interactions Scale[7] **(N=55)**	**74.15**	**76.42**	**-2.257***

**p < .01; *p < .05

Regarding officer views on citizen interactions, this section should also demonstrate an increase in scores at the post-test period to align with expected training impacts. Pre-test (Wave

[7] All items included. Cronbach's Alpha index of .901 for pre-training and .909 for post-training.

1) means are compared to post-test (Wave 2) means to demonstrate immediate ICAT training impacts. Table 20 contains the t-test comparisons for this section of the survey, demonstrating that only one of the seven post-training scores achieved statistical significance when compared to initial pre-training scores—this change was in the expected direction. The additive scale created, *Views on Citizen Interactions Scale*, demonstrated a non-significant reduction in score, opposite to the hypothesized direction.

Table 20. UCPD Officer Views on Citizen Interactions T-Test Results, Wave 1 to Wave 2

	Wave 1 Mean	Wave 2 Mean	T Value
1. I have considerable ability to control the nature of citizen interactions to create positive outcomes. (N=57)	3.95	4.14	-1.592
2. I am good at identifying officer safety risks in citizen encounters. (N=57)	4.28	4.18	1.000
3. I am good at de-escalating encounters with citizens. (N=57)	4.28	4.28	.000
4. Officers can be trained to increase the likelihood of positive encounters with citizens. (N=57)	4.46	4.33	1.154
5. Officers can be trained to improve their ability to identify officer safety risks in citizen encounters. (N=57)	4.56	4.37	1.962
6. Officers can be trained to improve their ability to de-escalate citizen encounters. (N=57)	4.52	4.42	.973
7. In tense citizen encounters, the most important thing is that I get home safely. [Reverse Coded] (N=57)	1.73	2.10	-3.164*
Views on Citizen Interactions Scale[8]	26.05	25.72	.654

**p < .01; *p < .05

b) Training Decay

To assess training decay, t-test comparisons of the post-training (Wave 2) scores to the follow-up (Wave 3) scores were conducted. Table 21 displays these comparisons for the survey items measuring officer priorities during citizen interactions. According to these t-test results, only three of the 18 items demonstrated a statistically significant change between these two

[8] Item 4 excluded. Cronbach's Alpha index of .674 for pre-training and .902 for post-training

waves, with one score changing in the desired direction (increase) and two scores moving significantly lower, closer to the initial pre-training scores. The other non-significant but minor changes appear to be inconsistent, with some scores increasing and some scores decreasing. The summed *Priorities During Citizen Interactions Scale* indicates a non-significant reduction in score, which is inconsistent with the goals of the ICAT training.

Table 21.UCPD Officer Priorities During Citizen Interactions T-Test Results, Wave 2 to Wave 3

	Wave 2 Mean	Wave 3 Mean	T Value
1. Being respectful toward the subject (N=57)	4.47	4.42	.417
2. Establishing rapport with the subject (N=57)	4.47	4.46	.139
3. Remaining calm (N=57)	4.65	4.72	-.683
4. Explaining the reason you've made contact with the subject (N=56)	4.42	4.56	-1.211
5. Maintaining self-restraint (N=57)	4.65	4.68	-.351
6. Being polite to the subject (N=57)	4.33	4.35	-.151
7. Allowing the subject to explain his side of the story (N=57)	4.46	4.41	.434
8. Considering the subject's side of the story (N=57)	4.23	4.35	-1.021
9. Thinking about how my actions may impact people other than the subject (N=57)	4.23	4.30	-.522
10. Getting the subject to cooperate without using force (N=57)	4.54	4.58	-.306
11. Thinking through possible alternatives before I act (N=56)	4.54	4.54	.000
12. Not making a decision about what to do until you've gathered all necessary information (N=57)	4.26	4.44	-1.490
13. Explaining to the subject the reasons for your decisions (N=57)	3.96	4.28	-2.297*
14. Going with your gut feeling when deciding how to act (N=57)	3.39	3.32	.541
15. Trying to talk the subject into complying (N=57)	4.61	4.47	1.306
16. Earning the subject's trust (N=57)	4.51	4.25	2.081*
17. Establishing physical control over the subject [Reverse Coded] (N=57)	2.61	2.53	.637
18. Resolving the incident quickly [Reverse Coded] (N=57)	3.95	3.19	4.94**
Priorities During Citizen Interactions Scale[9] **(N=56)**	**76.38**	**75.78**	**.402**

**p < .01; *p < .05

[9] All items included. Cronbach's Alpha index of .909 for post-training and .898 for follow-up.

Table 22 displays the t-test mean score comparison results for the survey items related to officer views on citizen interactions. Post-training (Wave 2) means are compared to follow-up (Wave 3) means to demonstrate potential training decay. Only one of the seven items demonstrated a statistically significant change in score, and this change is consistent with the expected impacts of ICAT training as the score increased over the 4 months. The summed *Citizen Interactions Scale* demonstrated a non-significant minor increase in score from the post-training to the follow-up mean officer score.

Table 22. UCPD Officer Views on Citizen Interactions Paired T-Test Results, Wave 2 to Wave 3

	Wave 2 Mean	**Wave 3 Mean**	**T Value**
1. I have considerable ability to control the nature of citizen interactions to create positive outcomes. (N=56)	4.16	4.11	.417
2. I am good at identifying officer safety risks in citizen encounters. (N=56)	4.16	4.45	-2.592*
3. I am good at de-escalating encounters with citizens. (N=56)	4.25	4.34	-.927
4. Officers can be trained to increase the likelihood of positive encounters with citizens. (N=56)	4.30	4.36	-.477
5. Officers can be trained to improve their ability to identify officer safety risks in citizen encounters. (N=56)	4.34	4.43	-.843
6. Officers can be trained to improve their ability to de-escalate citizen encounters. (N=56)	4.39	4.41	-.178
7. In tense citizen encounters, the most important thing is that I get home safely. [Reverse Coded] (N=56)	2.14	1.88	1.717
Citizen Interactions Scale[10] **(N=56)**	**27.75**	**27.96**	**-.439**

**p < .01; *p < .05

[10] All items included. Cronbach's Alpha index of .759 for post-training and .695 for follow-up.

c) Multivariate Analysis

Finally, two regression analyses considering what factors influence officer views on citizen interactions at Wave 2 were conducted. Model A estimates officers' views on citizen interactions (additive scale) and Model B estimates officers' perceived ability to de-escalate (single item—item 3 in the *views on citizen interactions* survey items). While most Ordinary Least Square (OLS) models in this dissertation rely on scale forms of dependent variables, Model B appeared especially relevant considering the overarching goal of this study—to understand how officer ability to de-escalate encounters with citizens. Due to the pilot and exploratory nature of this study, several control measures used in previous research formed the basis for this analysis, as well as two exploratory attitudinal measures. Shown in Table 23, none of the independent variables were found to predict the dependent variables in Model A or Model B, and both models suffered from a relatively weak explanatory power (10% and 13% of the variance in the dependent variable was explained, respectively).

Table 23. Multivariate OLS Regression Summary, Models A and B

	Model A. Views on Citizen Interactions Scale	Model B. Perceived Ability to De-escalate
Supervisor	-.59 (1.26)	.41 (.22)
Bachelor's Degree	-1.53 (1.27)	-.28 (.22)
UCPD Tenure	-.05 (.45)	-.08 (.08)
Female	-.68 (1.55)	-.06 (.27)
Openness to Training	.24 (.24)	.041 (.04)
Perceived Ability to Control Citizen Encounters	.45 (.63)	.09 (.13)
Constant	23.27 (5.56)*	3.59 (.97)*
Model R^2	.102	.134

Notes: Entries are unstandardized regression coefficients, with standard errors in parentheses; *p<.05.

In summary, two survey sections assessed officer attitudes towards citizens—*Priorities During Citizen Interactions* and *Officer Views on Citizen Interactions*. Attitudinal changes captured for the *Priorities During Citizen Interactions* items, including the additive scale,

demonstrated positive training impacts in officer responses immediately after ICAT training. Only one survey item for the *Views on Citizen Interactions* section demonstrated a statistically significant change, though other post-training scores moved in the expected direction, but were non-significant. Overall, it appears that the ICAT training program has minor, positive changes for officers' attitudes towards citizens. Both OLS models analyzed in this section were relatively weak, with none of the identified predictor variables significantly influencing the dependent variables. Other measures for officer attitudes and experiences are necessary to better predict these attitudes.

5. Officer Attitudes Towards Persons in Crisis

Two survey sections were used to assess officer attitudes towards persons in crisis—*Perceptions of Interactions with Persons in Crisis* and *Attitudes Towards Persons in Crisis*. A person in crisis refers to an individual that may be behaving erratically due to factors such as mental disorders, substance abuse, situational stress, and / or intellectual/developmental disabilities. It is expected that ICAT training provides officers with a better understanding of persons in crisis so that encounters with these individuals will become safer. Table 24 contains officer pre-training responses to 12 survey items measuring officer perceptions related to interactions with persons in crisis. Items are grouped by whether they are negatively or positively worded. In general, it appears that there is some variation in perceptions, with a majority disagreeing that there is no explaining why a person in crisis acts the way they do, yet a substantial minority (16.6%) agree there is no explanation (item 11). Additionally, nearly a quarter of officers agreed that non-compliance should be viewed as a threat (item 12).

Table 24. UCPD Officer Pre-Training Responses, Perceptions of Interactions with Persons in Crisis (N=60)

	Strongly Disagree % (n)	Disagree % (n)	Neutral % (n)	Agree % (n)	Strongly Agree % (n)	No Response % (n)
1. Recognizing the signs that a person is in crisis can improve the outcome of an interaction with that individual.	0 (0)	0 (0)	1.7 (1)	45.0 (27)	53.3 (32)	0 (0)
2. Unnecessary risks should be avoided in encounters.	0 (0)	3.3 (2)	10.0 (6)	56.7 (34)	30.0 (18)	0 (0)
3. The most important role of an officer responding to a crisis is to stabilize the situation.	0 (0)	0 (0)	5.0 (3)	73.3 (44)	21.7 (13)	0 (0)
4. In crisis situations, it is beneficial to keep a subject talking.	1.7 (1)	0 (0)	20.0 (12)	61.7 (37)	16.7 (10)	0 (0)
5. In many cases, the use of force against a person in crisis can be avoided.	0 (0)	5.0 (3)	41.7 (25)	45.0 (27)	8.3 (5)	0 (0)
6. As a person's emotions rise, their rational thinking declines.	0 (0)	1.7 (1)	3.3 (2)	65.0 (39)	30.0 (18)	0 (0)
7. When responding as a team, it's important to designate roles in the crisis intervention.	0 (0)	1.7 (1)	3.3 (2)	76.7 (46)	18.3 (11)	0 (0)
8. The majority of time spent communicating with a subject should be spent listening.	0 (0)	3.3 (2)	21.7 (13)	70.0 (42)	5.0 (3)	0 (0)
9. An officer's nonverbal communication, such as body language, influences how a subject reacts.	0 (0)	0 (0)	1.7 (1)	71.7 (43)	26.7 (16)	0 (0)
10. I know how to slow down an encounter with a person in crisis.	0 (0)	0 (0)	11.7 (7)	65.0 (39)	23.3 (14)	0 (0)
11. There is no explaining why a person in crisis acts the way they do.	8.3 (5)	53.3 (32)	21.7 (13)	13.3 (8)	3.3 (2)	0 (0)
12. Noncompliance should be viewed as a threat.	3.3 (2)	40.0 (24)	31.7 (19)	23.3 (14)	0 (0)	1.7 (1)

The second set of survey items measuring officer attitudes towards persons in crisis are shown in Table 25 below, where pre-training frequencies are displayed. Again, items are grouped first by those that are positively worded and then by those that are negatively worded.

Generally, officers reported understanding towards persons in crisis, given that a majority of officers disagreed that the mentally ill are a burden on society. Interestingly, nearly all (94%) of officers disagreed / strongly disagreed that responding to persons in crisis should not be the role of the police—it is clear that officers perceive their role in handling persons in crisis as an important duty.

Table 25. UCPD Officer Pre-Training Responses, Attitudes Towards Persons in Crisis (N=60)

	Strongly Disagree % (n)	Disagree % (n)	Neutral % (n)	Agree % (n)	Strongly Agree % (n)	No Response % (n)
1. The mentally ill have been the subject of ridicule for too long.	0 (0)	6.7 (4)	35.0 (21)	53.3 (32)	5.0 (3)	0 (0)
2. The mentally ill are far less a danger than most people think.	1.7 (1)	23.3 (14)	40.0 (24)	35.0 (21)	0 (0)	0 (0)
3. Mental illness is an illness like any other.	6.7 (4)	23.3 (14)	18.3 (11)	30.0 (18)	21.7 (13)	0 (0)
4. We need to adopt a more tolerant attitude to persons with developmental disabilities.	1.7 (1)	3.3 (2)	11.7 (7)	65.0 (39)	18.3 (11)	0 (0)
5. As soon as a person shows signs of mental disturbance, they should be hospitalized.	6.7 (4)	58.3 (35)	26.7 (16)	5.0 (3)	3.3 (2)	0 (0)
6. The mentally ill are a burden on society.	28.3 (17)	50.0 (30)	21.7 (13)	0 (0)	0 (0)	0 (0)
7. Substance abuse is caused by a lack of self-discipline and will power.	5.1 (3)	38.9 (23)	32.2 (19)	20.0 (12)	3.3 (2)	1.7 (1)
8. Persons who "self-medicate" by abusing substances are a burden on society.	6.7 (4)	40.0 (24)	30.0 (18)	21.7 (13)	1.7 (1)	0 (0)
9. Situational stress is no excuse for a person to act irrational.	8.3 (5)	55.0 (33)	28.3 (17)	8.3 (5)	0 (0)	0 (0)
10. Responding to a person in crisis should not be a role of the police.	38.3 (23)	55.0 (33)	6.7 (4)	0 (0)	0 (0)	0 (0)

a) Immediate Training Impacts

Before assessing changes in attitudes, factor analysis was run to identify how these items load together to form one or more underlying concepts. For the *Perceptions of Interactions with Persons in Crisis,* officer responses to twelve survey items were subjected to exploratory factor analysis using orthogonal varimax rotation. These items had a KMO index score of 0.784, indicating these items are suitable for factor analysis. Further, the Cronbach's alpha score for all twelve items is 0.727, indicating a high level of internal consistency. Four factors emerged, each with an eigenvalue greater than 1, accounting for 65.7% of the total variance. The magnitudes of eigenvalues were 4.092, 1.599, 1.174, and 1.022, respectively, as demonstrated in Table 26. However, based on the recommendation of at least 3 items loading onto a single factor for stability, Factors 3 and 4 may not be as stable as the first two factors (Velicer & Fava, 1998).

Table 26. Factor Matrix for Perceptions of Interactions with Persons in Crisis, Wave 2 (N = 59)

	Factor 1 Loadings	Factor 2 Loadings	Factor 3 Loadings	Factor 4 Loadings
Recognizing the signs that a person is in crisis can improve the outcome of an interaction with that individual.	.772	--	--	--
Noncompliance should be viewed as a threat. [Reverse Coded]	.617	--	--	--
An officer's nonverbal communication, such as body language, influences how a subject reacts.	.641	--	--	--
I know how to slow down an encounter with a person in crisis.	.764	--	--	--
The most important role of an officer responding to a crisis is to stabilize the situation.	--	.625	--	--
In crisis situations, it is beneficial to keep a subject talking.	--	.586	--	--
As a person's emotions rise, their rational thinking declines.	--	.823	--	--
When responding as a team, it's important to designate roles in the crisis intervention.	--	.525	--	--
Unnecessary risks should be avoided in encounters.	--	--	.870	--
The majority of time spent communicating with a subject should be spent listening.	--	--	.603	--
There is no explaining why a person in crisis acts the way they do. [Reverse Coded]	--	--	--	.874
In many cases, the use of force against a person in crisis can be avoided.	--	--	--	.603
Cronbach's α	.309	.678	.479	.358

Additive scales were also created to measure changes in officer attitudes, and acceptable reliability scores were found after the exclusion of items 11 and 12. Table 27 displays the average (mean) for each survey item across the two waves, along with the corresponding standard deviation (s.d.). Pre-test (Wave 1) means are compared to post-test (Wave 2) means to demonstrate immediate ICAT training impacts. Higher scores indicate a greater agreement to the tenants taught during the ICAT course, and post-training scores are expected to increase as a result of this training. Table 25 demonstrates six of the 12 items show statistically significant differences in reported attitudes in the expected direction between the pre-training and post-

training periods. Additionally, the *Interactions with Persons in Crisis Scale* demonstrated a statistically significant increase, indicating a change in score aligned with the goals of the ICAT training program.

Table 27. UCPD Officer Perceptions of Interactions with Persons in Crisis T-Test Results, Wave 1 to Wave 2

	Wave 1 Mean	Wave 2 Mean	T Value
1. Recognizing the signs that a person is in crisis can improve the outcome of an interaction with that individual. (N = 57)	4.53	4.53	.000
2. Unnecessary risks should be avoided in encounters. (N = 57)	4.12	4.11	.191
3. The most important role of an officer responding to a crisis is to stabilize the situation. (N = 57)	4.16	4.12	.444
4. In crisis situations, it is beneficial to keep a subject talking. (N = 57)	3.91	4.09	-1.427
5. In many cases, the use of force against a person in crisis can be avoided. (N = 57)	3.54	3.77	-2.277*
6. As a person's emotions rise, their rational thinking declines. (N = 57)	4.23	4.54	-2.680**
7. When responding as a team, it's important to designate roles in the crisis intervention. (N = 57)	4.12	4.44	-3.777**
8. The majority of time spent communicating with a subject should be spent listening. (N = 57)	3.79	4.30	-5.062**
9. An officer's nonverbal communication, such as body language, influences how a subject reacts. (N = 57)	4.26	4.39	-1.727
10. I know how to slow down an encounter with a person in crisis. (N = 57)	4.12	4.32	-2.386*
11. There is no explaining why a person in crisis acts the way they do. [Reverse Coded] (N = 57)	3.53	3.49	.222
12. Noncompliance should be viewed as a threat. [Reverse Coded] (N = 56)	3.23	3.80	-4.498**
Interactions with Persons in Crisis Scale[11] **(N = 57)**	**40.79**	**42.60**	**-4.014****

**p < .01; *p < .05

[11] For the creation of the additive *Interactions with Persons In Crisis Scale*, items 2 and 3 were excluded because they did not correlate well with the other items. Cronbach's Alpha index of .707 for pre-training and .804 for post-training.

Table 28 below displays each of the 10 survey items assessing respondents' attitudes towards persons in crisis. Pre-test (Wave 1) means are compared to post-test (Wave 2) means to demonstrate immediate ICAT training impacts. Opposite to the previous set of survey items, higher scores indicate a lesser acceptance of persons in crisis along with the lessened agreement to the tenets taught during the ICAT course. Therefore, it is expected that post-training and follow-up scores are lower than the pre-training scores. These items were purposively worded differently than the previous section to provide greater validity in the response scores, ensuring officers were not just selecting a singular response across all survey items.

As demonstrated in Table 28, three of the 10 items show statistically significant differences in reported attitudes between pre-training and post-training periods. Interestingly, the direction of these changes is not consistent across items, with some moving in the expected direction and some moving in the opposite direction. Of particular note is the meaningful increase for item 10, "Responding to a person in crisis should not be a role of the police," in the post-training period. Officers indicate greater agreement with this statement over time, contradicting the expected change in officer perceptions regarding their role in managing incidents involving persons in crisis following their participation in the ICAT training program. No scale was created for this section because acceptable reliability scores could not be attained.

Table 28. UCPD Officer Attitudes Toward Persons in Crisis Survey T-Test Results, Wave 1 to Wave 2

	Wave 1 Mean	Wave 2 Mean	T Value
1. As soon as a person shows signs of mental disturbance, they should be hospitalized. (N=57)	2.40	2.54	-1.383
2. The mentally ill are a burden on society. (N=57)	1.91	1.95	-.468
3. Substance abuse is caused by a lack of self-discipline and will power. (N=56)	2.79	2.66	.943
4. Persons who "self-medicate" by abusing substances are a burden on society. (N=57)	2.68	2.49	2.103*
5. Situational stress is no excuse for a person to act irrational. (N=57)	2.37	2.40	-.340
6. Responding to a person in crisis should not be a role of the police. (N=57)	1.67	1.88	-2.357*
7. The mentally ill have been the subject of ridicule for too long. [Reverse Coded] (N=57)	2.40	2.21	1.846
8. The mentally ill are far less a danger than most people think.[Reverse Coded] (N=56)	2.89	2.50	2.930**
9. Mental illness is an illness like any other. [Reverse Coded] (N=57)	2.58	2.54	.193
10. We need to adopt a more tolerant attitude to persons with developmental disabilities. [Reverse Coded] (N=57)	2.04	1.95	.869

**p < .01; *p < .05

b) Training Decay

To assess training decay, t-test comparisons are made between post-training (Wave 2) and follow-up (Wave 3) officer survey responses. Table 29 displays these comparisons for mean changes in officer attitudes during interactions with persons in crisis. Only one of these items demonstrated a statistically significant change, and this change is in the opposite direction than expected. The summed *Interactions with Persons in Crisis Scale* did not demonstrate any significant changes, but dropped in value at the 4-month follow-up, resembling a score closer to initial pre-training scores.

Table 29. UCPD Attitudes During Interactions with Persons in Crisis T-Test Results, Wave 2 to Wave 3

	Wave 2 Mean	Wave 3 Mean	T Value
1. Recognizing the signs that a person is in crisis can improve the outcome of an interaction with that individual. (N = 56)	4.52	4.54	-.227
2. Unnecessary risks should be avoided in encounters. (N = 55)	4.09	4.07	.163
3. The most important role of an officer responding to a crisis is to stabilize the situation. (N = 55)	4.11	4.11	.000
4. In crisis situations, it is beneficial to keep a subject talking. (N = 55)	4.02	3.89	1.308
5. In many cases, the use of force against a person in crisis can be avoided. (N = 55)	3.80	3.75	.622
6. As a person's emotions rise, their rational thinking declines. (N = 56)	4.52	4.36	1.322
7. When responding as a team, it's important to designate roles in the crisis intervention. (N = 56)	4.38	4.30	.663
8. The majority of time spent communicating with a subject should be spent listening. (N = 56)	4.52	4.48	.405
9. An officer's nonverbal communication, such as body language, influences how a subject reacts. (N = 56)	4.38	4.36	.275
10. I know how to slow down an encounter with a person in crisis. (N = 56)	4.30	4.20	1.764
11. There is no explaining why a person in crisis acts the way they do. [Reverse Coded] (N = 56)	3.50	3.45	.375
12. Noncompliance should be viewed as a threat. [Reverse Coded] (N = 55)	3.82	3.51	2.817**
Interactions with Persons in Crisis Scale[12] **(N = 55)**	**42.31**	**41.55**	**1.530**

**p < .01; *p < .05

Similarly, Table 30 displays the post-test to follow-up comparisons for mean changes in officer attitudes toward persons in crisis. Post-training (Wave 2) means are compared to follow-up (Wave 3) means to demonstrate potential training decay. None of these items achieved a statistically significant change from the post-test to the follow-up, however, most scores did

[12] Items 2 and 3 excluded from additive scale. Cronbach's Alpha index of .804 for post-training and .860 for follow-up.

demonstrate a very minor and non-significant increase in score, which is opposite to the expected impacts from the training. In other words, these scores moved closer to the original pre-training values. No scale was created for this section because acceptable reliability scores could not be attained.

Table 30. UCPD Officer Attitudes Toward Persons in Crisis T-Test Results, Wave 2 to Wave 3

	Wave 2 Mean	Wave 3 Mean	T Value
1. As soon as a person shows signs of mental disturbance, they should be hospitalized. (N=56)	2.46	2.38	1.043
2. The mentally ill are a burden on society. (N=56)	1.93	1.88	.685
3. Substance abuse is caused by a lack of self-discipline and will power. (N=56)	2.53	2.65	-1.224
4. Persons who "self-medicate" by abusing substances are a burden on society. (N=57)	2.44	2.65	-1.847
5. Situational stress is no excuse for a person to act irrational. (N=57)	2.37	2.47	-.747
6. Responding to a person in crisis should not be a role of the police. (N=57)	1.88	1.93	-.417
7. The mentally ill have been the subject of ridicule for too long. [Reverse Coded] (N=57)	2.23	2.25	-.178
8. The mentally ill are far less a danger than most people think.[Reverse Coded] (N=56)	2.48	2.52	-.314
9. Mental illness is an illness like any other. [Reverse Coded] (N=57)	2.46	2.46	.000
10. We need to adopt a more tolerant attitude to persons with developmental disabilities. [Reverse Coded] (N=57)	1.89	1.93	-.405

**p < .01; *p < .05

c) Multivariate Analysis

Finally, a regression analysis examines what factors influence officer views on interactions with persons in crisis. Due to the pilot and exploratory nature of this study, several control measures used in previous research formed the basis for this analysis. Shown in Table 31, only one significant independent variable was found to predict officer views on interactions with

persons in crisis, openness to training, while all other measures are insignificant. In other words, officers who are more open to training are more likely to have a higher score in the *Interactions with Persons in Crisis* scale. Model C also has a relatively weak explanatory power, with the predictor variables explaining only 18% of the variance in this additive scale.

Table 31. Multivariate OLS Regression Summary, Model C

	Model C. Interactions with Persons in Crisis
Supervisor	.65 (1.27)
Bachelor's Degree	-.47 (1.28)
UCPD Tenure	-.19 (.45)
Female	1.55 (1.57)
Openness to Training	.58 (.25)*
Perceived Ability to Control Citizen Encounters	.59 (.64)
Constant	31.31 (5.60)*
Model R^2	.177

Notes: Entries are unstandardized regression coefficients, with standard errors in parentheses; *p<.05.

In summary, two survey sections were designed to assess officer attitudes towards persons in crisis—*Perceptions of Interactions with Persons in Crisis* and *Attitudes Towards Persons in Crisis*. T-test findings for both sections suggest that several measured items changed significantly in the expected direction, aligned with the goals of the ICAT training program. However, comparing the follow-up scores to post-training scores for these sections, it appears that many scores demonstrated a very minor and non-significant change in scores that are opposite to the expected impacts from the training. Indeed, the scores move closer to the initial pre-training scores, indicative of training decay. In regards to the regression analysis of the summed *Interactions with Persons in Crisis* scale, only officer self-reported openness to training was a significant predictor, but the model's overall explanatory power was relatively weak.

6. Summary

This chapter contained the survey results of the pilot evaluation for ICAT training with the UCPD. Quite a few noteworthy findings were discovered in this preliminary work, answering the research questions posed in this study as well as revealing other impacts. Overall, the study demonstrated significant changes in officer attitudes, most notably towards the use of force and understanding of persons in crisis. Examinations of the utility of the Critical Decision-Making Model (CDM), in particular, demonstrated findings that were inconsistent with hypothesized training impacts. Officers reported finding the CDM *less* useful four-months after they were trained compared to their perceptions of this tool immediately after training. Next, Chapter 5 findings as they relate to the research questions are summarized.

The first research question posed in this study considered how best to measure attitudes and perceptions related to de-escalation training. To answer this question, factor analyses and additive scales were composed for several sections of this training survey. Factor analysis results indicate that some of the survey concepts appeared to be comprised of multiple factors, but often these factors had one or two survey items loading together, suggesting some level of instability. Additionally, some of the factors identified demonstrated unsuitable alpha reliability scores. Therefore for most measures, changes relied upon composite additive scales when inter-item reliability was suitable. Future research should reconsider these factors when measuring larger groups of individuals—these instabilities were likely driven by the small sample size.

Importantly, UCPD officers indicated that they were receptive and satisfied with the ICAT training program, answering the second research question posed in this study. Nearly three-fourths of respondents enjoyed the training and would also recommend this course to others. These results suggest that law enforcement officers will likely be receptive to ICAT

training and that ICAT may serve as a potentially effective de-escalation training program. However, the CDM component of the ICAT survey demonstrated changes in the opposite direction as officers indicated they found the CDM to be less useful over time. This particular area of the training curricula and delivery should be re-visited by UCPD training staff.

The third research question was designed to assess the impact of ICAT training of officer attitudes toward the use of force. T-test results indicated promising findings, where 7 of the 11 post-training survey items were statistically significant from pre-training scores, with all post-training scores lower than pre-training scores indicative of positive training impacts. When 4-month follow-up scores were compared to post-training values, the changes were inconsistent across the items.

Research question four considered the impact of ICAT training on officer attitudes towards citizens and the study relied upon two areas of the survey to measure these impacts. Considering the additive *Priorities During Citizen Interactions Scale*, composed of 18 items, a statistically significant increase from pre-training to the post-training was identified, indicative of positive training impacts. Additionally, T-test results for items measuring *Officer Views on Citizen Interactions* demonstrated statistical significance in change for a single post-training score when compared to initial pre-training scores—this change was in the expected direction. Other survey item changes were in the expected directions but were non-significant. Overall, it appears that the ICAT training program has modest but positive changes for officers' attitudes towards citizens.

ICAT training is specifically intended to influence officers' attitudes and understanding of persons going through crisis—the fifth research question posed in this study. T-test findings suggest that most measured items changed significantly in the expected direction, aligned with

the goals of the ICAT training program. However, comparing the follow-up scores to post-training scores for *Attitudes Toward Persons in Crisis*, it appears that most scores demonstrated a very minor and non-significant increase in score, which is opposite to the expected impacts from the training. Additionally, OLS regressions suggest that officers with more openness to training may hold more understanding attitudes towards interactions with persons in crisis. Reasons for this particular finding are unknown, but underlying and unmeasured officer attitudes and experiences (such as overall empathy or having a family member/friend with mental illness) may be associated with both of these attitudes.

This seventh and final research question posed in this dissertation examines any training decay that may occur after officers' ICAT training. Follow-up surveys were given four months after training to assess this issue. The study found that the majority of survey responses indicated a minor level of training decay, given that most follow-up scores move closer to the pre-training scores over time, though these changes were not statistically different from the post-training scores. Unfortunately, most attitudes did not demonstrate an enhanced alignment to ICAT training goals with time, as would be hypothesized with continued familiarity and use of the training. This would lead to the conclusion that some learning from ICAT training does decay over time, and that officers would likely benefit from refresher courses within four months of initial training. Ways to assist with training decay issues are explored in the last chapter of this dissertation.

CHAPTER 6: UCPD SELF-REPORTED CONFIDENCE AND USE OF ICAT TRAINING

Chapter 6 presents officer self-reported measures regarding their confidence and use of ICAT skills in the field. First, officer self-confidence in handling critical incidents is measured with training survey items. Second, UCPD contact cards are used to measure the use of ICAT skill use during day-to-day interactions. Third, two focus groups were conducted with UCPD officers to provide a qualitative context to the use of ICAT skills in the field and officer perceptions and confidence in the ICAT training program. The results of these analyses provide critical insights as to how UCPD officers use and respond to the skills taught during the ICAT training program. This chapter provides additional findings to fulfill research questions one and six, along with important contextual information.

1. Officer Confidence in Handling Critical Incidents

To better understand officers' confidence in handling critical incidents, respondents were given a one-page dialogue scenario between a person going through a crisis and a police officer. The person, "David," is on private property (CIA: Carter Industrial Associates) and is rummaging through a trashcan while having delusions about the CIA. David is unarmed, but acting and speaking aggressively to the officer. Respondents were asked to indicate their level of confidence (1 = Not at All Confident; 4 = Very Confident) to 13 actions related to this dialogue. Higher scores indicate a greater amount of confidence in conducting the action described—officers' pre-training responses are shown in Table 32. Overall, only one respondent across all survey questions reported that they felt, "not at all confident", and the largest groupings of officers felt "somewhat confident" across most survey items. However, for questions 3, 4, 5, and 8, the majority of officers selected feeling very confident in the actions posed. For instance, 60%

of surveyed officers felt very confident in interacting with the family members of someone like David (question 5).

Table 32. UCPD Officer Pre-Training Responses, Confidence Handling Critical Incidents (N=60)

How confident would you feel…	**Not at All Confident % (n)**	**Not Very Confident % (n)**	**Somewhat Confident % (n)**	**Very Confident % (n)**
1. …interacting with someone like David?	1.7 (1)	1.7 (1)	53.3 (32)	43.3 (26)
2. …in your ability to effectively communicate with someone like David?	1.7 (1)	1.7 (1)	60.0 (36)	36.7 (22)
3. …taking someone like David to a social service agency?	1.7 (1)	10.0 (6)	36.7 (22)	51.7 (31)
4. …asking someone like David open-ended questions to gather information about what is going on?	1.7 (1)	1.7 (1)	46.7 (28)	50.0 (30)
5. …interacting with family members of someone like David?	1.7 (1)	1.7 (1)	36.7 (22)	60.0 (36)
6. …in your ability to summarize/paraphrase statements made by David in your own words?	1.7 (1)	3.3 (2)	53.3 (32)	41.7 (25)
7. …calming down someone like David?	1.7 (1)	1.7 (1)	61.7 (37)	35.0 (21)
8. …helping someone like David call a social services agency?	1.7 (1)	15.0 (9)	31.7 (19)	51.7 (31)
9. …de-escalating a crisis involving someone like David?	1.7 (1)	3.3 (2)	51.7 (31)	43.3 (26)
10. …talking to someone like David about his medications?	1.7 (1)	3.3 (2)	55.0 (33)	40.0 (24)
11. …expressing understanding toward someone like David?	1.7 (1)	1.7 (1)	38.3 (23)	58.3 (35)
12. …getting someone like David to talk to you rather than acting out?	1.7 (1)	0 (0)	56.7 (34)	41.7 (25)
13. …talking to someone like David about whether or not he uses alcohol or drugs?	1.7 (1)	1.7 (1)	51.7 (31)	45.0 (27)

To assess changes in these attitudes after ICAT training, Table 33 displays the t-test mean comparisons for each of the survey items between the pre-training and post-training periods. Additionally, these items were summed to create an *Officer Confidence Scale* for each wave of data, with a possible range of 13 to 52. Table 33 demonstrates that officers appear to grow more confident in their perceived response to each action over survey waves. However, only one of the 13 questions (question 2) is statistically significant when comparing pre- and post-training scores. Overall, most officers report being somewhat to very confident in dealing with the crisis

scenario presented. Considering the summed *Officer Confidence Scale* scores from pre-training to post-training, a modest increase is demonstrated but this change is not statistically significant.

Table 33. UCPD Officer Confidence T-Test Results, Wave 1 to Wave 2

How confident would you feel…	**Wave 1 Mean**	**Wave 2 Mean**	**T Value**
1. … interacting with someone like David? (N=57)	3.42	3.54	-1.629
2. … in your ability to effectively communicate with someone like David? (N=57)	3.35	3.53	-2.102*
3. … taking someone like David to a social service agency? (N=57)	3.44	3.53	.358
4. … asking someone like David open-ended questions to gather information about what is going on? (N=57)	3.46	3.58	-1.475
5. … interacting with family members of someone like David? (N=57)	3.56	3.54	.207
6. … in your ability to summarize/paraphrase statements made by David in your own words? (N=57)	3.37	3.46	-.962
7. … calming down someone like David? (N=57)	3.33	3.44	-1.230
8. … helping someone like David call a social services agency? (N=57)	3.39	3.44	-.554
9. … de-escalating a crisis involving someone like David? (N=57)	3.40	3.51	-1.287
10. … talking to someone like David about his medications? (N=57)	3.33	3.39	-.191
11. … expressing understanding toward someone like David? (N=57)	3.56	3.47	.279
12. … getting someone like David to talk to you rather than acting out? (N=57)	3.40	3.44	.674
13. … talking to someone like David about whether or not he uses alcohol or drugs? (N=57)	3.42	3.46	-.423
Officer Confidence Scale[13]	**44.47**	**45.32**	**-1.103**

**p < .01; *p < .05

Table 34 compares the pre-test scores to the follow-up scores for the officer confidence items[14] to measure the long-term impacts of the ICAT training program. These items displayed an interesting change that was not seen in the other sections of the survey when comparing the pre-test values to the follow-up values. Specifically, 11 of the 13 items are statistically significant when comparing pre-training to 4-month follow-up scores. Also, the summed *Officer*

[13] All items included. Cronbach's Alpha index of .959 for pre-training and .944 for post-training.
[14] No t-test values held any significant change when considering post-test to follow-up.

Confidence Scale displayed below demonstrates that the 4-month follow-up score is significantly higher than the pre-training score, indicating a meaningful change in confidence in the expected direction. Potential reasons for this finding are discussed in the final chapter of this dissertation.

Table 34. UCPD Officer Confidence T-Test Results, Wave 1 to Wave 3

How <u>confident</u> would you feel…	**Wave 1 Mean**	**Wave 3 Mean**	**T Value**
1. … interacting with someone like David? (N=55)	3.42	3.64	-2.701**
2. … in your ability to effectively communicate with someone like David? (N=55)	3.35	3.55	2.514*
3. … taking someone like David to a social service agency? (N=55)	3.42	3.58	-1.765
4. … asking someone like David open-ended questions to gather information about what is going on? (N=55)	3.45	3.65	-2.390*
5. … interacting with family members of someone like David? (N=55)	3.55	3.71	-1.839
6. … in your ability to summarize/paraphrase statements made by David in your own words? (N=56)	3.39	3.69	-3.438**
7. … calming down someone like David? (N=55)	3.35	3.60	-3.069**
8. … helping someone like David call a social services agency? (N=55)	3.38	3.58	-2.031*
9. … de-escalating a crisis involving someone like David? (N=55)	3.42	3.64	-2.360*
10. … talking to someone like David about his medications? (N=55)	3.36	3.56	-2.189*
11. … expressing understanding toward someone like David? (N=55)	3.55	3.71	-2.130*
12. … getting someone like David to talk to you rather than acting out? (N=55)	3.42	3.58	-2.018*
13. … talking to someone like David about whether or not he uses alcohol or drugs? (N=55)	3.44	3.69	-3.069**
***Officer Confidence Scale*[15] (N=55)**	**44.49**	**47.11**	**-3.085****

**p < .01; *p < .05

Finally, a single regression analysis considering what factors influence officer confidence in handling critical incidents was conducted. Model D uses the same predictor variables as the other three OLS models shown in Chapter 5. Demonstrated in Table 35, only one of the independent variables was found to predict officer views on citizen interactions—officer openness to

[15] All items included. Cronbach's Alpha index of .959 for pre-training and .946 for follow-up.

training. Additionally, the model suffered from a relatively weak explanatory power, given that only 15% of the variance in the dependent variable was explained by the predictor variables.

Table 35. Multivariate OLS Regression Summary, Model D

	Model D. Confidence Handling Critical Incidents
Supervisor	-.12 (1.80)
Bachelor's Degree	-.36 (1.81)
UCPD Tenure	.41 (.63)
Female	2.71 (2.21)
Openness to Training	.76 (.35)*
Perceived Ability to Control Citizen Encounters	.91 (.90)
Constant	27.54 (7.90)*
Model R^2	.145

Notes: Entries are unstandardized regression coefficients, with standard errors in parentheses; *p<.05.

In sum, self-reported officer confidence in handling critical incidents significantly rose from the pre-training to the 4-month follow-up period across all survey items. While post-training scores rose from the initial pre-training scores, these changes were not significant. This suggests that with additional time, UCPD officers report feeling more confident in handling critical incidents compared to the times before ICAT training. Additionally, OLS regressions demonstrate that officer openness to training may also be related to officer self-reported confidence in handling critical incidents.

2. Contact Cards

Following the UCPD's *Bias Free Policing Policy* (SOP 4.1.300), a "Contact Card" (Form 10A) is the form that is filled out whenever a UCPD officer creates a nonconsensual contact (e.g., traffic stop, suspicious persons contact, field interview, or arrest). Contact cards were created for UCPD use in September 2015 as a way to better capture details regarding nonconsensual stops. In addition to contact cards, UCPD officers also record all stops with additional information in an official report that is kept in their Automated Records Management

System (ARMS) database. Contact cards provide supplemental information to these reports, capturing additional information that may not be included in an official police report (for instance, when someone is stopped but only receives a warning).

While the contact card has gone through various revisions, it was most recently updated in October 2018 after UCPD officers were trained in ICAT. The updates included the creation of checkboxes at the bottom of the form, allowing officers to indicate all tactical and communication ICAT skills used during the encounter. The skills were taken from the learning objectives of Module 6 of the ICAT training program (PERF, 2016b). Specifically, 6 tactical skills are listed: (1) Assigned less-lethal & lethal roles; (2) Isolated subject; (3) Maintained contact & cover roles; (4) Used distance & cover; (5) Used tactical repositioning; (6) Used tactical repositioning as threat changed. Next, four communication skills are listed: (1) Avoided confrontation; (2) Demonstrated empathy & respect; (3) Established dialogue using universal greeting; (4) Gathered pertinent information. Officers are also able to select "N/A" if the opportunity to use ICAT tactical and/or communication skills was not present during that encounter.

Data used for this analysis includes 812 contact cards, submitted between November 1, 2018, and December 31, 2019 (13-month period). It should be noted that this data includes the 62 officers who were employed at the UCPD during the time of the 2018 ICAT training, but also 9 officers who were hired after that time, who also received a separate ICAT training by the same trainers. These new officers remained in this analysis because the ICAT training sessions were not meaningfully different, and the goal of this analysis is to generally assess how frequently officers use ICAT skills during their citizen encounters.

Of the 812 contact cards that were filled out during this period, approximately 59.2% were initiated due to calls from University of Cincinnati dispatchers, 7.4% were due to dispatch by another agency, and 33.4% were self-initiated by the officer. The vast majority (84.1%) were filled out for pedestrian contacts, followed by 12.3% for drivers, and 3.4% for vehicle passengers. Contacts were most often made on campus (78.6%). In terms of contact frequency by individual officer, contacts ranged from a low of one contact made by a single officer to a high of 57 contacts made by a single officer during these 13 months. This range of contacts made is likely due to officer job assignment. The high of 57 contacts still amounts to less than 8% of the total amount of contacts, indicating that no single officer appeared to be over-active when compared to officers on similar shifts and job assignments.

Table 36 below considers the monthly changes that are associated with the number of contacts made by the UCPD. Expectedly, these trends appear to correlate with the academic calendar, with the busiest months being when students return to campus (August and September), and the least busy months occurring during the summer period (June and July).

Table 36. Contact Cards Submitted by the UCPD, Nov. 2018 - Dec 2019 (N=812)

Month	Number of Cards (% of total)
Nov. 2018	53 (6.5)
Dec. 2018	50 (6.2)
Jan. 2019	55 (6.8)
Feb. 2019	62 (7.6)
Mar. 2019	62 (7.6)
Apr. 2019	81 (10.0)
May 2019	39 (4.8)
Jun. 2019	34 (4.2)
Jul. 2019	31 (3.8)
Aug. 2019	79 (9.7)
Sep. 2019	89 (11.0)
Oct. 2019	74 (9.1)
Nov. 2019	53 (6.5)
Dec. 2019	50 (6.2)
TOTAL	**812 (100.0)**

Important to this study, the contact cards ask officers to self-report both the tactical and communication skills used during an encounter. Table 37 displays the reported use of ICAT tactical skills between November 1, 2018, through December 31, 2019 (N=812). Table 6 demonstrates there is variation in the specific types of tactical skills that were used, but some type of skill was used in 65.6% of all encounters. Officers reported using distance and cover most frequently (46.9%) and used the assignment of less-lethal and lethal roles least frequently (3.3%).

Table 37. Reported use of ICAT Tactical Skills, Nov. 2018 - Dec 2019 (N=812)

Month	Assigned Less-Lethal & Lethal Roles	Isolated Subject	Maintained Contact & Cover Roles	Used Distance & Cover	Used Tactical Pause	Used Tactical Repositioning as threat changed	N/A	ICAT Tactical Skill Reported (%)
Nov. 2018	3	17	18	16	9	5	29	24 (45.3)
Dec. 2018	1	11	14	20	13	7	24	26 (52.0)
Jan. 2019	1	19	29	18	11	3	12	43 (78.2)
Feb. 2019	1	24	34	40	24	12	10	52 (83.9)
Mar. 2019	4	29	31	33	26	18	16	46 (74.2)
Apr. 2019	3	32	41	27	17	13	25	56 (59.1)
May 2019	0	16	17	19	15	18	10	29 (74.4)
Jun. 2019	0	10	9	9	9	7	19	15 (44.1)
Jul. 2019	4	10	12	12	10	8	15	16 (51.6)
Aug. 2019	1	39	39	48	26	21	22	57 (72.2)
Sep. 2019	5	38	35	44	28	26	34	55 (61.8)
Oct. 2019	0	31	38	40	23	26	26	48 (64.9)
Nov. 2019	2	17	18	20	11	11	28	25 (47.2)
Dec. 2019	2	26	29	35	23	22	9	41 (82.0)
TOTAL	**27 (3.3%)**	**319 (39.3%)**	**364 (44.8%)**	**381 (46.9%)**	**245 (30.2%)**	**197 (24.3%)**	**279 (34.4%)**	**533 (65.6%)**

Officers also provided self-reported frequencies for the use of ICAT communication skills during contact with citizens. Table 38 displays those reported communication skills from November 1, 2018, through December 31, 2019 (N=-812). Overall, some form of ICAT communication skills were reported in 75.9% of all encounters, with gathered pertinent information reported most frequently (65.5%) and established dialogue using universal greeting reported least frequently (46.2%).

Table 38. Reported use of ICAT Communication Skills, Nov. 2018 - Dec 2019 (N=812)

Month	Avoided Confrontation	Demonstrated Empathy & Respect	Established Dialogue Using Universal Greeting	Gathered Pertinent Information	N/A	ICAT Communication Skills Reported (%)
Nov. 2018	22	27	21	27	20	33 (62.3)
Dec. 2018	15	27	18	28	15	35 (70.0)
Jan. 2019	27	36	22	38	10	45 (81.2)
Feb. 2019	36	34	36	50	7	55 (88.7)
Mar. 2019	39	40	38	40	15	47 (75.8)
Apr. 2019	32	36	36	51	20	61 (75.3)
May 2019	25	31	20	30	5	34 (87.2)
Jun. 2019	21	17	16	21	10	24 (70.6)
Jul. 2019	17	18	19	21	4	27 (87.1)
Aug. 2019	53	57	46	60	8	71 (89.9)
Sep. 2019	46	44	36	51	33	56 (62.9)
Oct. 2019	44	50	26	49	23	51 (68.9)
Nov. 2019	25	24	17	28	22	31 (58.5)
Dec. 2019	36	37	24	38	4	46 (92.0)
TOTAL	**438 (53.9%)**	**478 (58.9%)**	**375 (46.2%)**	**532 (65.5%)**	**196 (24.1%)**	**616 (75.9%)**

Interestingly, there does not appear to be an association between the self-reported use of ICAT skills and ICAT training at UCPD. Indeed, officers continue to report frequent use of ICAT skills well after officers were trained (May-Sep 2018). There does not appear to be any decay in reported use of skills, rather trends appear to fluctuate following the academic calendar where officers are making more contacts and self-reporting the use of ICAT skills when the campus is busiest such as the start and the end of the academic school year.

Table 39 below includes cross-tab comparisons of the use of ICAT tactical and communication skills by tenure at UCPD and educational attainment, to identify what types of officers might use ICAT skills most often. When comparing the frequency of use of ICAT tactical skills (reporting of at least one skill during an encounter), it appears that those with a shorter tenure are more likely to report the use of the skill compared to those of a longer tenure (68% compared to 59%). When comparing groups with different levels of educational attainment, it appears that those with an Associate's degree or less than 2 years of college are least likely to report the use of tactical skills (58.4%), those with a Bachelor's degree or higher are moderately like to report (68.8%) and those with a high school degree are most likely to report the use of tactical skills (77.3%). The differences between groups are less pronounced when examining the use of ICAT communication skills. For instance, UCPD tenure has similar associations

between officer groups for use of communication skills, and education level is similar to officers with a high school degree and those with a Bachelor's degree or higher. The only exception is that fewer officers with an Associate's degree or less than 2 years of college report using communication skills.

Table 39. UCPD Contact Cards by UCPD Tenure and Education Level (n=812)

	ICAT Tactical Skill(s)	ICAT Communication Skill(s)
	N (%)	N (%)
UCPD Tenure		
7 or fewer years (n=595)	405 (68.0)	454 (76.3)
8 or more years (n=217)	128 (59.0)	162 (74.7)
Educational Attainment*		
High School (n=44)	34 (77.3)	37 (84.1)
Less than 2 years college or Associate's (n=238)	139 (58.4)	167 (70.2)
Bachelor's or Higher (n=295)	203 (68.8)	246 (83.4)
Total Reported Use	533 (65.6)	616 (75.9)

*Education level unavailable for 234 contact cards filled out by UCPD officers.

In summary, contact card analyses revealed that UCPD officers use ICAT skills rather frequently and that these trends in skill use correlate with the UC academic calendar. There does not appear to be a substantial decay in officer self-reported use of skills after ICAT training. Officers continue to report frequent use of ICAT skills well after they were trained. Officers who have been at the UCPD for a shorter amount of time were more likely to report the use of ICAT tactical skills compared to those who had been at the UCPD longer. This may also be a reflection of job assignment, with younger officers more likely to be assigned to patrol. Trends related to educational attainment were less clear, as those with a high school degree were most likely to report the use of any skill and officers with less than 2 years of college or with an Associate's degree being least likely to report ICAT skill use. Despite these nuances, there is clear evidence that UCPD officers are attempting to apply ICAT training skills during most encounters with citizens during the period of examination.

3. Focus Groups

This dissertation research included a focus group component to provide a qualitative context to the quantitative findings from officer survey analyses. However, unlike other forms of focus group research, this section does not include qualitative data analysis. Rather these section is strictly used to provide context and understanding to the survey findings and identify opportunities for research moving forward.

Specifically, two sets of focus groups were conducted to understand the dynamics surrounding the use of de-escalation, ICAT training, and the Critical Decision-Making Model (CDM). The first group, held on February 18, 2020, was comprised of 8 police officers, 3 of whom were supervisors. The second focus group, held February 20, was comprised of 8 police officers (including one supervisor), along with two security officers. These groups are an appropriate size for focus group research, as they are small enough to allow everyone to the opportunity to participate yet large enough to allow for a diversity of opinions (Stewart & Shamdasani, 1990). Further, they were the maximum size that the UCPD was able to provide at a single time[16], given that patrol shifts are typically comprised of around ten officers per shift. Both sessions were held in the afternoon at the police department behind closed doors.

The structure of the focus groups included a discussion of the following questions:

1. *Do you use ICAT skills? If so, are there particular situations where you find these skills more useful than others?*
2. *What tactical skills do you find most useful?*
3. *What verbal skills do you find most useful?*
4. *What do you find useful about ICAT skills?*
5. *What do you find least useful about ICAT skills?*
6. *What are your thoughts more generally about de-escalation? Have you seen it work effectively? Have you ever seen it fail?*

[16] Beyond gathering officers outside of their shift, using overtime pay.

7. *Do you feel confident about using the **Critical Decision-Making Model (CDM)**? Why or why not?*
8. *Do you think the CDM is useful for decision-making during encounters with all citizens? Why or why not?*
9. *Do you think the CDM is useful during critical incidents? Why or Why not?*
10. *Do you think the CDM makes officers hesitate to take action?*

During each session, participants were encouraged to question each other's responses and were asked to expand and clarify where appropriate (Freeman, 2006). Both sessions lasted approximately 45 minutes, which is near the optimal amount of time for focus group discussion (Stewart & Shamdasani, 1990).

After the sessions were conducted, they were reviewed to identify the major themes along with the similarities and differences between the two groups. Only notes were taken during the sessions—officers were not recorded by any device. These themes related to the questions posed during the discussion are described in the remainder of this section as a way to provide context to the research results discussed earlier. Additionally, questions posed during these focus groups were designed to provide potential explanations for the counter-intuitive findings related to the utility of the Critical Decision-Making Model (CDM).

a) ICAT Receptivity and Skill Use

When asked about particular situations where ICAT skills were used most often or where the training was particularly helpful for officers (*Questions 1*), both focus groups specifically identified responding to calls for service involving persons with behavioral health conditions. Both groups identified this as a frequent call for UCPD officers, particularly given that there is a mental health facility located on the east campus. UCPD officers often transported individuals to

this facility. The ICAT training program and skills were seen as particularly useful in these situations.

When asked about the utility of specific verbal and tactical ICAT skills (*Questions 2 & 3*), officers indicated that assigning officer roles (termed "contact and cover") was particularly useful, but further indicated this was a tactic that has been traditionally taught in policing. Others noted that a useful component of ICAT training was teaching officers to be more cognizant of their body language and their positioning (also referred to as maintaining a "reaction gap"). An officer in one group described that having officers reverse their roles to take the perspective of a person going through crisis, as a helpful exercise. Officers indicated that they liked the ICAT training and found it useful for responding to persons going through mental or behavioral distress (*Question 4*), commensurate with the ICAT training objectives. However, a couple of officers indicated that ICAT training simply reinforced concepts that officers were already trained in, related to communication skills and some tactical skills (such as contact and cover).

When asked about the weakness of ICAT training (*Question 5*), some of the officers indicated that it was less useful with juveniles than with adults. When officers were asked to expand upon this idea, they indicated that it was because juveniles are generally more difficult to communicate with than adults, due to the perception that juveniles often weren't willing to talk or were not responsive to officer questions.

b) <u>De-escalation</u>

When asked about their general thoughts regarding de-escalation (*Question 6*), most officers readily agreed that they liked the concept. All officers indicated that they had seen it work effectively several times but some officers had seen it fail. When officers were asked why de-escalation sometimes fails, officers agreed that it depended on the nature of the person. It was

clear that officers felt there were some situations where the person cannot be calmed down to the point of being rational. However, these "failures" seen by the officers typically only resulted in the use of physical hand and body contact by the officers—a relatively low level of force. None of the officers present had seen de-escalation with a citizen fail to the point of the use of deadly force.

c) Critical Decision-Making Model (CDM)

After officers were asked about the ICAT training and de-escalation broadly, the focus group discussion narrowed into the CDM component of ICAT training. First, officers were asked if they were confident using the CDM (*Question 7*). Of those that responded, they overwhelmingly agreed they liked and used the CDM. After these rounds of agreement, officers were provided with a paper copy of the UCPD CDM along with some of the study results related to the CDM utility section. These results included the t-test results which found that 6 of the 11 survey items measuring this concept moved in the *opposite* direction, as did the composite *CDM Utility Scale* (see page 99 of Chapter 5).

After these results were explained to the officers, they were asked to provide some context as to why these counter-intuitive results were found. A handful of officers pointed to the fact that the UCPD has gone through several new policies and policy revisions in the past few years. This complication, part of the larger reform effort of the UCPD, adds some detail as to why officers may not find the CDM as useful over time as they initially thought. The CDM requires officers to constantly reflect on agency policies and procedures as part of the thinking processes during an interaction. This effect may be specific to the UCPD, but it is also likely that many agencies, who have recently undergone revisions to use of force policies in a post-Ferguson era, may also exhibit this same finding. Other reasons given during the sessions were

not specific to the CDM, but more general. For instance, one officer described that they were "beat down" with this training and added that this finding was a "survey effect" because the department was surveyed too often. However, it did not appear that many other officers shared this sentiment.

Next, officers were asked whether or not they thought the CDM was a useful decision-making tool (*Questions 8 and 9*). Most officers agreed that they found it useful, but they also indicated the CDM was reflective of a "natural instinct" and that they don't necessarily picture a "spinning wheel" or a step-by-step process. Both groups agreed that veteran officers (those who had been on the force for several years) already used a thinking process similar to the CDM, but indicated that it may take a novice officer some time to get the hang of this thinking process. One officer indicated he believed that the CDM may be most useful during a drawn-out scenario, where an officer has more time to run through a variety of actions to keep the situation safe for everyone. Officers did not note any differences in the usefulness of the CDM between general citizen encounters and critical incidents.

When asked specifically if the CDM may make officers hesitate to take action while they are interacting with citizens (*Question 10*), nearly all officers in both groups strongly agreed that this was a concern. When asked to provide further details about this hesitation and why it might occur, both groups were concerned about how actions were taken during an interaction that may be picked apart by command staff later. Both groups referred to this as "Monday Morning Quarterbacking"—where command staff would be critical of actions taken by officers during previous citizen encounters at the weekly Monday morning staff meeting. Similar to the larger phenomenon of de-policing across the nation referred to as the "Ferguson effect" (Rosenfeld, 2016), UCPD officers described being hesitant to be proactive due to fear of future repercussions

or criticisms. Implications for these findings and opportunities for future research will be discussed more thoroughly in the final chapter of this dissertation.

4. Summary

In summary, these results demonstrate important impacts of ICAT training beyond the findings of the training surveys, examining officer self-reported confidence and the use of ICAT training and skills. The sixth research question posed in Chapter 4 considers whether ICAT training improves officer confidence in handling critical incidents. Results comparing the summed Officer Confidence Scale scores from pre-training to post-training demonstrate a modest increase, but this change is not statistically significant. However, when pre-training scores are compared to 4-month follow-up scores, a statistically significant increase is demonstrated. This suggests that with additional time, UCPD officers report feeling more confident in handling critical incidents compared to the times before ICAT training. Additionally, OLS regressions demonstrate that officer openness to training may also be related to officer self-reported confidence in handling critical incidents.

UCPD contact cards, which are forms filled out by UCPD officers during nonconsensual contacts, were analyzed to understand patterns of officer self-reported use of six ICAT tactical skills and four ICAT communication skills over 13 months. Analyses identified some form of tactical skill that was used in 66 percent of all encounters and some form of communication skill was used in 76 percent of all encounters (n=812).

Importantly, there did not appear to be a decay in the self-reported use of ICAT skills over time—indeed officers continued to report frequent use of ICAT skills well after they were trained. Rather, trends in the frequency of skill use appeared to fluctuate following the UC

academic calendar. Comparing officers with different educational attainment, it appeared that those with an Associate's degree or less than 2 years of college are least likely to report the use of tactical skills (58.4%), those with a Bachelor's degree or higher are moderately like to report (68.8%), and those with a high school degree are most likely to report the use of tactical skills (77.3%). Comparing officers of differing agency tenure, it appears that those with a shorter tenure are more likely to report the use of tactical skills compared to those of a longer tenure (68% compared to 59%). The differences between groups are less pronounced when examining the use of ICAT communication skills which demonstrated similar rates of use across groups.

Described in Chapter 5, survey examinations of the utility of the Critical Decision-Making Model (CDM) demonstrated findings that were inconsistent with the hypothesized impacts of the training. Nearly all survey items examining the CDM demonstrated a statistically significant change in the opposite direction than expected, indicating that officers found the CDM to be less useful at the 4-month follow-up period compared to the post-training periods. Focus groups with UCPD officers were used to explore these findings. During these sessions, some officers pointed to the fact that UCPD policies have been in constant fluctuation over the past five years, due to their comprehensive review and subsequent reform. However, this may pose difficulties for officers required to constantly reflect on UCPD policies and procedures as part of the CDM. Officers also agreed that the CDM may make officers hesitate to take action while interacting with citizens, though several officers pointed out this was likely only the case for novice officers. As officers become more experienced, they pointed, the CDM becomes a very intuitive process.

The focus groups provided additional evidence that UCPD officers were receptive to the ICAT training. They found it particularly useful for responding to calls for service involving

persons with behavioral health conditions. Given that UCPD officers are often dispatched for the transportation of individuals to mental health facilities, this was identified as a main benefit of the ICAT training.

An important revelation from these group discussions was a shared concern about how their encounters with citizens might be later criticized by command staff, which the groups referred to as "Monday Morning Quarterbacking." This sentiment is reminiscent of the national "Ferguson effect" phenomenon, where officers are becoming more hesitant to be proactive due to fear of future repercussions or criticisms. The presence of this concern demonstrates a clear challenge for ICAT training, which is oriented towards officers making changes in how they interact with citizens. Yet, ICAT training is well-suited to positively impact officers, so that they learn to slow down these encounters to end safely and without future repercussions. Implications from these findings and recommendations for police agencies are expanded upon in the following chapter.

CHAPTER 7: DISCUSSION AND CONCLUSION

With increased calls for accountability related to police use of force, de-escalation, a process that stabilizes critical situations between police and citizens using the least amount of force possible, has become a widely promoted practice for law enforcement to enhance use of force policies and training. Indeed, a recent US national survey of the 155 largest police departments found that nearly all of the responding agencies trained at least some officers in some form of de-escalation (CBS, 2019). While a variety of police de-escalation training programs exist, the *Integrating Communications, Assessment, and Tactics* (ICAT) training program appears to be gaining momentum in the field. As of early 2020, over 500 agencies have participated in some form of ICAT training, such as train-the-trainer sessions or bringing PERF staff on-site to train officers directly (A.Kass, personal communication, January 6, 2020). ICAT training, which is designed to teach officers to slow down and de-escalate encounters with citizens, may be an essential training to enhance safety for everyone involved (PERF 2016b). However, this training, similar to many police training programs, requires a systematic assessment as to its effectiveness.

The current study is a critical step towards expanding the very limited evidence base around de-escalation training for police. There continues to be a debate in the field as to whether de-escalation training is safe for officers and citizens, and also whether or not the training has an impact on policing practices in the field. Absent an evidence base, these questions cannot yet be answered (Engel et al., 2020a). As the field continues to implement de-escalation principles and training, there must be a better understanding of the impacts of this form of training, including the ICAT training program. This chapter concludes this dissertation, providing (1) a summary of the research findings, (2) a discussion of their implications and recommendations for agencies

adopting ICAT training, (3) a description of the research limitations, and (4) recommendations for future research.

1. Findings Summary

Following a well-established model for training evaluation, this study relies upon the first two levels of the model, reaction and learning, to provide an exploration into the impacts of ICAT training on police (Kirkpatrick, 1998). The learning level assesses not only changes in knowledge but shifts in attitudes and perceptions. Attitudes have a significant influence on behavior, though how attitudes are activated and directly/indirectly impact actions remains the subject of psychological debate (Azjen et al., 2019). Nonetheless, research at these levels is an important first step to understanding the utility of ICAT training. To enact behavior change, learning must first occur. Changes in officer cognitions (specifically attitudes, perceptions, and confidence) are the most reliable indicator of training effects for this research. To summarize the previous two chapters, each of the research questions and their findings are reviewed next.

1. *Research Question 1: How to measure officer attitudes and perceptions impacted by ICAT training?*

Factor analyses and additive scales were composed for several sections of this training survey to compare methods for measuring attitudinal effects related to this de-escalation training. Results indicate that some survey concepts appeared to be comprised of multiple factors, but often these factors only had one or two survey items loading together, suggesting some level of instability. Additionally, some of the factors identified demonstrated unsuitable alpha reliability scores. Therefore attitudinal and perceptual changes for officers relied upon composite additive scales when inter-item reliability was suitable. Future research should reconsider these factors when measuring larger groups of individuals—these instabilities were likely driven by the small

sample size. Nonetheless, the study demonstrates that several of these individual items and scales can be used for future research, providing the first steps towards the validation of these survey instruments.

2. *Research Question 2: How is ICAT training received by officers?*

UCPD officers indicated that they were receptive and satisfied with the ICAT training program, answering the second research question posed in this study. Nearly three-fourths of respondents enjoyed the training and would also recommend this course to others. These results suggest that law enforcement officers will likely be receptive to ICAT training and that ICAT may serve as a potentially effective de-escalation training program. In particular, focus groups with UCPD officers demonstrated that they found the skills taught in this training were especially useful for responding to persons going through a behavioral or emotional crisis. Officers found that other skills reinforced during ICAT training were particularly helpful, such as assigning officer roles (termed "contact and cover") and teaching officers to be cognizant of their body language and positioning (also referred to as maintaining a "reaction gap").

However, examinations of the Critical Decision-Making Model (CDM) portion of the training demonstrated findings that were inconsistent with the hypothesized impacts of the training. Nearly all survey items examining the CDM demonstrated a statistically significant change in the opposite direction than expected, indicating that officers found the CDM to be less useful at the 4-month follow-up period compared to the post-training period. Focus groups with UCPD officers were used to explore these findings. During these sessions, some officers pointed to the fact that UCPD policies have been in constant fluctuation over the past five years, due to their comprehensive review and subsequent reform (see Exiger, 2019). These changes may have created difficulties for officers who are required to constantly reflect on UCPD policies and

procedures as part of the CDM. Officers also agreed that the CDM may make officers hesitate to take action while interacting with citizens, though several officers pointed out this was likely only the case for novice officers. As officers become more experienced, they pointed, the CDM becomes a very intuitive process. Nonetheless, the reduction in officer receptivity to this portion of the training presents an area for further refinement.

3. *Research Question 3: Does ICAT training impact officers' attitudes towards use of force?*

Efforts to create composite measures for the 11 use of force survey items were unproductive, given that that correlations amongst survey items were incongruent. Despite this limitation, individual item results indicated promising findings, where six of the 11 post-training survey items were statistically significant from pre-training scores, with all changes indicative of positive training impacts. When 4-month follow-up scores were compared to post-training values, however, the changes were inconsistent across the items. Given that some follow-up survey item scores move closer to the initial pre-training scores, some training decay is demonstrated. Therefore, it appears that ICAT training has an immediate positive effect on officer attitudes towards the use of force, but these effects dissipate with time.

4. *Research Question 4: Does ICAT training impact officers' attitudes towards citizens?*

Two sections of the survey measured officer attitudes towards citizens, including *Priorities During Citizen Interactions* and *Officer Views on Citizen Interactions.* An examination of the additive *Priorities During Citizen Interactions Scale*, composed of 18 items, demonstrated a statistically significant increase in score, indicative of immediate positive training impacts. Additionally, T-test results for items measuring *Officer Views on Citizen Interactions* demonstrated statistical significance in change for a single post-training score when compared to initial pre-training scores—this change was in the expected direction. Other survey item changes

for *Officer Views on Citizen Interactions*, including the additive scale, were in the expected directions but were non-significant. In terms of training decay for officer attitudes towards citizens, most changes were non-significant but several follow-up scores moved closer to initial pre-training scores, demonstrating a minor level of decay. Both OLS models analyzed in this section were relatively weak, with none of the identified predictor variables significantly influencing the dependent variables. Other measures for officer attitudes and experiences are necessary to better predict these attitudes. Overall, it appears that the ICAT training program has minor, positive changes for officers' attitudes towards citizens.

5. *Research Question 5: Does ICAT training change officers' knowledge and attitudes about persons in crisis specifically?*

Two survey sections were used to assess officer attitudes towards persons in crisis—*Perceptions of Interactions with Persons in Crisis* and *Attitudes Towards Persons in Crisis*. Results for this section are especially relevant, given that ICAT is expected to provide officers with a better understanding of persons in crisis so that encounters with these individuals will become safer. T-test findings suggest that most measured items changed significantly in the expected direction, aligned with the goals of the ICAT training program. However, comparing the follow-up scores to post-training scores for both survey sections, it appears that most scores demonstrated a very minor and non-significant change in score, which is opposite to the expected impacts from the training. Additionally, OLS regressions suggest that officers with more openness to training may hold more understanding attitudes towards interactions with persons in crisis.

Findings from the focus group sessions suggest that officers find ICAT training to be particularly helpful for responding to calls for service involving persons with behavioral health

conditions, adding further support that the ICAT training helps officers to interact with persons in crisis. During mental health runs, officers are usually engaging with a person going through some form of crisis and this training provided them with additional skills to deal with these interactions safely. This aligns with the expected impacts of the training, and officers identified this as a major benefit of ICAT training.

6. *Research Question 6: Does ICAT training improve officers' confidence in handling critical incidents?*

Considering the summed *Officer Confidence Scale* across the pre-training to post-training period, a modest increase is seen but this change is not statistically significant. However, when pre-training scores are compared to 4-month follow up scores, several statistically significant increases are demonstrated. This suggests that with additional time, UCPD officers report that they are significantly more confident in handling critical incidents compared to the times before ICAT training. Additionally, OLS regressions demonstrate that officer openness to training may also be related to officer self-reported confidence in handling critical incidents.

7. *Research Question 7: Does any observed impact from the training change over time?*

This seventh and final research study posed in this dissertation considers any training decay that may occur after ICAT training. Follow-up surveys were given four months after training to address this issue. The study found that the majority of survey responses indicated a minor level of training decay, given that most follow-up scores move closer to the pre-training scores over time, though these changes were not statistically different from the post-training scores. Unfortunately, attitudes did not demonstrate an enhanced alignment to ICAT training goals with time, as would be hypothesized with continued familiarity and use of the training. This would lead to the conclusion that some learning from ICAT training does decay over time,

and that officers would likely benefit from refresher courses within four months of initial training. Ways to assist with training decay issues are explored in the last chapter of this dissertation.

Supplementing these survey findings, UCPD contact cards were analyzed to understand patterns of officer self-reported use of six ICAT tactical skills and four ICAT communication skills over 13 months. Contact cards are forms filled out by UCPD officers during nonconsensual contact with citizens, and officers self-report the use of specific ICAT skills on the forms. Analyses revealed at least one ICAT tactical skill was used in 66 percent of the 812 police-citizen encounters and some form of ICAT communication skill was used in 76 percent of the 812 police-citizen encounters. This demonstrates that UCPD officers are using de-escalation training skills during the majority of their encounters with citizens. Importantly, there did not appear to be a decay in the self-reported use of ICAT skills over time—indeed officers continued to report frequent use of ICAT skills well after they were trained. Rather, trends in the frequency of skill use appeared to fluctuate following the UC academic calendar.

2. Implications and Recommendations for Police Agencies

These findings have important implications for police agencies considering the adoption of ICAT training to fulfill de-escalation training requirements. There is empirical support that the training changes particular attitudes related to de-escalation in hypothesized directions, particularly towards the use of force, understanding of persons going through crisis and confidence in handling critical incidents. However, many survey responses indicated a minor level of training decay, given that follow-up scores often moved closer to initial pre-training scores four-months after ICAT training. Examinations of the utility of the Critical Decision-Making Model (CDM), in particular, demonstrated findings that were inconsistent with

hypothesized training impacts. These two areas, training around the CDM and overall training decay, represent important opportunities for refinement and enhancement.

Based on the survey findings, it appears that the CDM was not perceived particularly well by the officers. The CDM represents an important aspect of the ICAT training program, and therefore officer reactions to this decision-making model are especially relevant to the training evaluation. Focus groups with UCPD officers revealed some potential explanations for these findings, including that the recent fluctuation in UCPD policies, as a result of the agency's overhaul and reform, may lend some confusion in using the model. Other officers indicated the CDM may take novice officers more time to fully understand and effectively apply this model in the field. It is also possible that this portion of the training curricula was not well understood by officers. Training curricula and delivery should be reconsidered and enhanced in ways that reinforce this particular aspect of the training.

Several studies point to the fact that skill retention is difficult when its practice is not routine, particularly in highly hazardous fields such as medicine, aviation, and policing (Grubb et al., 2001; Nishisaki et al., 2008). The same can be said of the skills taught in ICAT training. Agencies should consider the use of refresher training to counteract the training decay effects found in this study. Unfortunately, evidence regarding the best methods to train as well as maintain skills learned during de-escalation training are lacking in police research. But, research from other fields can provide some insights as to promising practices. Principles from adult learning theory emphasize that the learner should have the capacity and motivation to learn, that training is relevant and include active involvement, and that learners benefit from close observation and immediate, objective feedback (Kovacs et al., 2000). Research from training evaluations in the medical sciences, for example, has applied some of these techniques. Kovacs

and colleagues (2000) used an RCT to compare groups of learners, determining that for all groups, skill performance declined early after initial training, but individuals who used independent practice in combination with periodic feedback better maintained performance scores compared to those who received feedback alone or those who received neither feedback nor practiced the skills. The researchers determined that refresher training is necessary, but noted the frequency and form of training will depend upon the skills that need to be retained as well as how often the subject uses the skills in the field (Kovacs et al., 2000; Nishisaki et al., 2008). This means that particular units or divisions within a police department may require different "doses" of refresher training for optimal skill retention. It is recommended that ICAT refresher training emphasize skill practice with periodic feedback from trainers or supervisors.

The focus group discussions revealed a distinct concern about how officers' encounters with citizens, particularly citizens going through some form of emotional or behavioral crisis, might be criticized by command staff. This sentiment is reminiscent of the national "Ferguson effect" phenomenon, where officers are becoming more hesitant to be proactive due to fear of future repercussions or criticisms. The presence of this concern demonstrates a clear challenge for ICAT training, which is oriented towards officers making changes in how they interact with citizens. It is recommended that executives reinforce the benefits of de-escalation training, by highlighting and rewarding officers who effectively de-escalate encounters with persons in crisis.

The UCPD, as well as other police agencies, should consider reviewing their officers' body-worn camera (BWC) footage to examine the use of ICAT skills. Most agencies require officers to initiate BWCs to record encounters with citizens while responding to a call for service or while detaining an individual. Supervisors should review footage of these police-citizen encounters to identify situations when skills were used properly, when skills were used

improperly, and to identify missed opportunities for skill use. This is an additional opportunity to provide feedback and enhance officer use of ICAT skills.

Another method to reinforce ICAT training and de-escalation principles is to identify and reward officers who effectively use these skills to avoid the use of force and ultimately save lives. For example, the UCPD is in the process of developing a form of annual public recognition for officers who use de-escalation skills during critical incidents. Rewarding this process for officers can help shift organizational views on the use of these skills.

Ultimately, police embracement of de-escalation requires a general cultural shift in how police officers view use of force. Rooted within policing is the heavily emphasized concept that, above all else, it is most important that an officer goes home safely (Stoughton, 2014). Many traditionally taught tactics center around this concept. Police training is often cited as a defense in use-of-force cases, with outdated training validating a react-first, think-later mentality which ultimately justifies poor officer decision-making (Duret and Priest, 2020). Police organizations need to shift how officers think about safety during encounters, beginning with training at the police academy.

It is also recommended that for the necessary cultural shifts towards the embracement of de-escalation at the patrol officer-level, police executives should identify informal leaders and supervisors to promote change. Research shows that officers often emulate the behaviors and priorities of their supervisors—these leaders provide an important model for officers (McManus et al., 2019). These informal and formal leaders will vary by agency, but police executives should strive to identify these individuals and task them with the promotion of de-escalation principles and tactics to officers.

Nonetheless, evidence for the effectiveness of de-escalation is necessary to help move the policing field towards embracing these principles. De-escalation is inherently at odds with traditionally taught principles in officer training academies as well as the traditional use of force continuum (Stoughton, 2015). This research adds to the very limited knowledge base that de-escalation training can change officer attitudes, providing some promising evidence that this training can help shift the dynamics of critical police-citizen encounters and ultimately save lives.

3. Study Limitations

There are some important limitations to this study which should be pointed out, including (1) the use of a non-experimental design, (2) sample size, (3) the use of a campus police sample, and (4) the use of self-report measures. First, this study design relied on a version of a repeated measures survey design, where a pre-test, post-test, and 4-month follow-up survey were given to collect repeated measures on the same concepts. However, this is a non-experimental design that did not include a randomized selection of officers to participate in the training. The randomized control trial design is considered the "gold standard" in research, particularly in evaluation in research. This randomized control trial design maximizes the internal validity of the study to increase the researcher's confidence that the findings did not occur by chance. Unfortunately, the lack of a rigorous research design in this study, including foregoing a control group for comparison, severely limits the internal validity of the study because it is unable to rule out the influence of other confounding factors. However, a randomized control trial design is often difficult to implement, especially in a real-world setting (Engel et al., 2020a). While not a randomized design, this study examined changes in officers' attitudes across time in a way that incorporated rigorous statistical analyses despite the use of a non-experimental research design.

The second limitation is the sample size used for this study. Study findings are based on a single mid-size police department, who employed 62 sworn officers at the time this study was initiated. A sample size less than 100 is often considered rather limited and certainly limited the statistical power for this study. Despite this limitation, the UCPD is a mid-size agency and therefore representative of the majority of police agencies in the United States. Additionally, this research provides an opportunity to develop and pilot-test survey items to measure officers' attitudes, perceptions, and confidence as a method to gauge the initial effects of de-escalation training.

A third limitation to these research findings is based on the sample type—the UCPD is a campus law enforcement agency. It is possible that campus police departments are inherently different from municipal and state departments, and that these findings would not be replicated elsewhere. Indeed, crime on college campuses is far less prevalent than in municipalities (Hensen and Stone, 1999). Further, campus police are often seen as less "legitimate" than municipal police (Wada et al., 2010). However, municipal and campus police are trained the same, serving the same law enforcement function in different jurisdictions. Therefore, it is likely that similar findings would occur with a municipal police sample but it cannot be concluded in this study.

Finally, some may be concerned about the use of self-report survey measures to assess programmatic impacts, because respondents may choose responses they perceive to be socially desirable rather than responses that reflect their own beliefs. Though this possibility cannot be dismissed entirely, the use of anonymous surveys that were never in the possession of any members of the UCPD greatly reduces the likelihood of this possibility. Survey research is often

used in the early stages of criminal justice training evaluations when no other credible data sources exist (Bradley & Connors, 2007).

4. Future Research

Future research should consider the last two levels of the Kirkpatrick (1998) model for training evaluation: behavior and organizational results. These two levels were not able to be examined in this study. A primary reason for this, as noted previously, is that the UCPD has very infrequent uses of force (an average of 2 incidents per year). There would not be enough statistical power to determine programmatic impacts from the training on officer use of force incidents or organizational-wide changes in the use of force.

Ideally, future research would measure the behavior and organizational results levels of training evaluation through the use of a randomized control trial (RCT) design. During an RCT, study subjects are randomly assigned to either the treatment or control group. The "treatment group" receives the intervention under evaluation and the "control group" does not. The control group is often described as just "doing business as usual." This method allows the researcher to control the delivery of the intervention and assume the only difference between the subjects in each group is whether or not they experienced the intervention. One such RCT of the ICAT training is near completion with the Louisville Metro Police Department (Engel et al., 2019b) and results should be released by fall 2020. However, this research should also be replicated with multiple police agencies as a way to extend the external validity of the ICAT evaluation research.

Future de-escalation training research should also seek to understand the appropriate levels of training dosage. Findings from this survey suggest that the positive attitudinal changes reported by officers after the ICAT training was somewhat diminished by the 4-month follow-up

period. Research should consider that is the optimal time between refresher training, as well as how to best implement refresher training. For instance, is it most effective to conduct short reminders during roll call, curriculum refreshers in a classroom, refresher live role-play scenarios or some combination of these options? Police agencies should track and test the impacts of these different forms of refresher training.

Other research related to de-escalation training evaluation should explore measures other than self-report surveys or agency records. For instance, the use of systematic social observation could be a useful tool to understand the complexities of how de-escalation works (or when it fails) during an encounter with a person in crisis. However, given that these types of situations may not be prevalent during routine patrols it may be difficult to get a high count of these encounters to analyze. Therefore, researchers may consider the examination of body-worn camera (BWC) footage. Researchers can review footage of encounters that escalated to the use of force by an officer, or other encounters that are tagged as involving a person in crisis. This examination can provide insights as to the type of effective de-escalation skills and the situational factors that are correlated to successful de-escalation.

Future research should also consider the role of first-line supervisors in the reinforcement of ICAT training. Given the key role that immediate supervisors play in police patrol work generally, first-line supervisors should play an important part in the leading expectations, thereby effectively influencing officer behavior as to whether or not officers view these skills as important and/or use these skills in the field (McManus et al., 2019). Supervisors who actively use and promote de-escalation skills and principles are likely to have officers who also emulate this behavior, but this assumption must be tested.

Finally, future research should seek to replicate this study to assess the generalizability of these findings. The UCPD is a *campus* law enforcement agency and this aspect of the sample may limit the generalizability of the findings. Though the UCPD holds similar demographics to national statistics for municipal police departments, individuals who work in a campus department may be inherently different than those who work in a municipal department. These survey instruments and analytic techniques should be applied to other police officer samples. At this stage, this exploratory research and its findings may not be generalizable to other types of police departments.

5. Conclusion

Previous studies have highlighted the importance of evaluating training impacts on officer attitudes and behaviors (Engel et al., 2020a, 2020b; Skogan et al., 2015). There is evidence that if training creates changes in attitudes, there is a greater likelihood that it will also result in significant and measurable changes in related behaviors (Kirkpatrick, 1998). Despite the limitations noted above, this study significantly contributes to the limited knowledge base around de-escalation training impacts on police, *demonstrating empirical evidence that the ICAT training program changes certain officer attitudes in the expected directions*.

In addition to these meaningful findings, this research represents an important first step to providing police executives and researchers with survey tools and examples to build their knowledge base within their agencies and/or partners. The study explored several different ways in which to measure attitudinal changes related to de-escalation training and will be refined for future use in research studies.

Importantly, this study also highlights the need to understand how different aspects of training influence attitudes and behavior. Training content, delivery, dosage, supervision, and managerial oversight are all critical aspects to this training that require testing and modification for maximum impact. Agencies and policymakers must understand that officers cannot simply be trained once and be expected to change their behaviors. Rather, police embracement of de-escalation requires a larger cultural shift at the organization-level along with training in de-escalation techniques and principles.

In conclusion, these findings demonstrate early promising effects for the ICAT training program to change officer attitudes in a way that makes them more amenable to the principles and practices of de-escalation. This is imperative because the effective use of de-escalation techniques is designed to diffuse conflicts to save lives and reduce the injuries of both citizens and police officers. Ultimately, police training which reduces the need and severity of police use of force is the most necessary in policing today—the ICAT training program may be one such way to resolve police and citizen encounters in a safer manner.

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APPENDIX 1. SURVEY ITEMS

Table 40.PART A, Priorities during Citizen Interactions

Survey Item	Scoring
QA1. Being respectful toward the subject	1=Very Unimportant 2=Unimportant 3=Neutral 4=Important 5=Very Important
QA2. Establishing rapport with the subject	
QA3. Remaining calm	
QA4. Explaining the reason you've made contact with the subject	
QA5. Maintaining self-restraint	
QA6. Being polite to the subject	
QA7. Allowing the subject to explain his side of the story	
QA8. Considering the subject's side of the story	
QA9. Thinking about how my actions may impact people other than the subject	
QA10. Getting the subject to cooperate without using force	
QA11. Thinking through possible alternatives before I act	
QA12. Not making a decision about what to do until you've gathered all necessary information	
QA13. Explaining to the subject the reasons for your decisions	
QA14. Going with your gut feeling when deciding how to act	
QA15. Trying to talk the subject into complying	
QA16. Earning the subject's trust	
QA17. Establishing physical control over the subject	
QA18. Resolving the incident quickly	

Table 41.PART B, Viewpoints on Citizen Interactions

Survey Item	Scoring
QB1. I have considerable ability to control the nature of citizen interactions to create positive outcomes.	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QB2. I am good at identifying officer safety risks in citizen encounters.	
QB3. I am good at de-escalating encounters with citizens.	
QB4. In tense citizen encounters, the most important thing is that I get home safely.	
QB5. Officers can be trained to increase the likelihood of positive encounters with citizens.	
QB6. Officers can be trained to improve their ability to identify officer safety risks in citizen encounters.	
QB7. Officers can be trained to improve their ability to de-escalate citizen encounters.	

Table 42. PART C, Attitudes toward Use of Force

Survey Item	Scoring
QC1. Officers are *NOT* allowed to use as much force as is necessary to make suspects comply.	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QC2. It is sometimes necessary to use more force than is technically allowable.	
QC3. Verbally disrespectful subjects sometimes deserve physical force.	
QC4. Refraining from using force when you are legally able to puts yourself and other officers at risk.	
QC5. It is important to have a reputation that you are an officer willing to use force.	
QC6. Not using force when you could have makes suspects more likely to resist in future interactions.	
QC7. It is important that my fellow officers trust me to handle myself in a fight.	
QC8. Trying to talk my way out of a situation is always safer than using force.	
QC9. It is important that my fellow officers trust my communication skills.	
QC10. I respect officers' ability to talk suspects down rather than using force to make them comply.	
QC11. Generally speaking, if force has to be used, it is better to do so earlier in an interaction with a suspect, as opposed to later.	

Table 43. PART D, Perspectives on Policing

	Scoring
QD1. Enforcing the law is a patrol officer's most important responsibility	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QD2. Law enforcement and community members must work together to solve local problems.	
QD3. Working with the community to solve problems is an effective means of providing services to this area.	
QD4. I routinely collaborate with community members in my daily duties	
QD5. My primary responsibility as a police officer is to fight crime.	
QD6. As a police officer, I have a primary responsibility to protect the constitutional rights of residents.	
QD7. A primary responsibility of a police officer is to build trust between the department and community.	
QD8. As a police officer, it is important that I have non-enforcement contacts with the public.	
QD9. As a police officer, I see myself primarily as a civil servant.	
QD10. My primary role is to control predatory suspects that threaten members of the public.	
QD11. The jurisdiction I work in is dangerous.	
QD12. As a police officer, there is a good chance you will be assaulted while on the job.	

Table 44. PART E, Perceptions of Your Agency

Survey Item	Scoring
QE1.The culture of my agency is going in a positive direction	1=Very Uncertain 2=Uncertain 3=Neutral 4=Certain 5=Very Certain
QE2. I will fit in with my agency culture as it changes in the upcoming years.	
QE3. My agency will provide me with adequate opportunities for professional development in the future.	
QE4. Overall, I am satisfied with my job.	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QE5. I enjoy working with my colleagues.	
QE6. Overall, this is a good agency to work for.	
QE7. I *never* second-guess my decision to work in this agency.	
QE8. I *never* second-guess my decision to be a police officer.	

Table 45. PART F, Perceptions on Training

	Scoring
QF1. I would consider myself "open" to using new training in my everyday work.	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QF2. I am reluctant to change the way I do my work now.	
QF3. I look forward to new training opportunities.	
QF4. Police officer are over-trained in areas that are unhelpful in their work.	
QF5. It is important for police agencies to continually add innovative training.	
QF6. Training makes me more effective in my work.	
QF7. New training may reduce officer safety.	

Table 46. PART G, Interactions with Persons in Crisis

	Scoring
QG1. Recognizing the signs that a person is in crisis can improve the outcome of an interaction with that individual.	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QG2. There is no explaining why a person in crisis acts the way they do.	
QG3. Noncompliance should be viewed as a threat.	
QG4. Unnecessary risks should be avoided in encounters.	
QG5. The most important role of an officer responding to a crisis is to stabilize the situation.	
QG6. In crisis situations, it is beneficial to keep a subject talking.	
QG7. In many cases, the use of force against a person in crisis can be avoided.	
QG8. As a person's emotions rise, their rational thinking declines.	
QG9. When responding as a team, it's important to designate roles in the crisis intervention.	
QG10. The majority of time spent communicating with a subject should be spent listening.	
QG11. An officer's nonverbal communication, such as body language, influences how a subject reacts.	
QG12. I know how to slow down an encounter with a person in crisis.	

Table 47. PART H, Attitudes toward Persons in Crisis

	Scoring
QH1. The mentally ill have been the subject of ridicule for too long.	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
QH2. As soon as a person shows signs of mental disturbance, they should be hospitalized.	
QH3. The mentally ill are far less a danger than most people think.	
QH4. The mentally ill are a burden on society.	
QH5. Mental illness is an illness like any other.	
QH6. We need to adopt a more tolerant attitude to persons with developmental disabilities.	
QH7. Substance abuse is caused by a lack of self-discipline and will power.	
QH8. Persons who “self-medicate” by abusing substances are a burden on society.	
QH9. Situational stress is no excuse for a person to act irrational.	
QH10. Responding to a person in crisis should not be a role of the police.	

Table 48. PART I, Self-Efficacy

Using the information presented in the scenario above, please indicate how confident you would feel completing the following actions.

How <u>confident</u> would you feel…	**Scoring**
QI1. …interacting with someone like David?	1=Not at All Confident 2=Not Very Confident 3=Somewhat Confident 4=Very Confident
QI2. …in your ability to effectively communicate with someone like David?	
QI3. …taking someone like David to a social service agency?	
QI4. …asking someone like David open-ended questions to gather information about what is going on?	
QI5. …interacting with family members of someone like David?	
QI6. …in your ability to summarize/paraphrase statements made by David in your own words?	
QI7. …calming down someone like David?	
QI8. …helping someone like David call a social services agency?	
QI9. …de-escalating a crisis involving someone like David?	
QI10. …talking to someone like David about his medications?	
QI11. …expressing understanding toward someone like David?	
QI12. …getting someone like David to talk to you rather than acting out?	
QI13. …talking to someone like David about whether or not he uses alcohol or drugs?	

Table 49. PART J, The Critical Decision-Making Model (CDM)

The CDM…	**Scoring**
QJ1. …increases my decision-making skills during everyday situations.	1=Strongly Disagree
QJ2. …often takes too much time to use in encounters with a person in crisis.	2=Disagree
QJ3. …may make officers hesitate to take action when needed.	3=Neutral
QJ4. … helps me to assess the risks in a situation	4=Agree
QJ5. …helps me identify my options for action in a situation.	5=Strongly Agree
QJ6. …helps me select an option to resolve a situation.	
QJ7. …reminds me to continuously gather information during a situation.	
QJ8. … is too complicated.	
QJ9. … helps me review the action I took during a situation.	
QJ10. … helps me to explain my decision-making after I act in a situation.	
QJ11. I am confident using the CDM during an encounter with a person in crisis	