Final Report to the Ad Hoc Committee of the
National Academies of Sciences, Engineering, and Medicine

Evidence to Advance Reform in the Global Security and Justice Sectors: A Workshop-based Consensus Study Series

Police training methods needed to promote the rule of law and protect the population

By

Tamara D. Herold
University of Nevada, Las Vegas

May 2021; updated June 2021

Suggested Citation:
Herold, T. (2021). Police Training Methods Needed to Promote the Rule of Law and Protect the Population. Paper prepared for the Committee on the Evidence to Advance Reform in the Global Security and Justice Sectors, National Academies of Sciences, Engineering, and Medicine. https://www.nationalacademies.org/our-work/evidence-to-advance-reform-in-the-global-security-and-justice-sectors

Author Note

I wish to acknowledge and thank the Committee members and public session workshop presenters for their thoughtful comments and suggestions to improve this manuscript. I thank Professor Lawrence Sherman, Professor Lorraine Mazerolle, and Jessalyn Brogan Walker for their on-going research guidance and feedback. I am greatly indebted to Stacey Clouse, Audrey Puckett, and Darwin Morgan, for their generous review and editing assistance.

Table of Contents

1.0 INTRODUCTION 3
2.0 REVIEW FRAMEWORK: THE PURPOSE AND GOALS OF POLICE TRAINING 4
2.1 PURPOSE OF POLICE TRAINING 4
2.2 GOALS OF POLICE TRAINING 5
3.0 POLICE TRAINING OVERVIEW 7
3.1 CURRICULUM CONTENT 8
3.2 TEACHING SETTINGS AND METHODS 8
3.3 TRAINING INSTRUCTORS 10
4.0 POLICE TRAINING EVALUATIONS 11
4.1 EVALUATION FOCUS 11
4.2 EVALUATION METHODS 14
4.3 TRAINING IMPACTS 14
4.4 GENERALIZABILITY 15
5.0 CONCLUSIONS AND RECOMMENDATIONS 16
5.1 PREVENTION IS POSSIBLE. 17
5.2 ALL TRAININGS ARE NOT EQUAL. 17
5.3 TRAINING NECESSITIES EVALUATION. 18
6.0 REFERENCES 19

1.0 INTRODUCTION

The report aims to inform the National Academy of Sciences Committee (Ad Hoc Committee in support of Evidence to Advance Reform in the Global Security & Justice Sectors: A Workshop-based Consensus Study Series project) of international evidence concerning the effectiveness of training methods used to prepare police officers to promote the rule of law and protect the population. In addition to providing a summary of the evidence base related to training method effectiveness across various countries, the report describes the strengths and limitations of the data available to inform these practices. It also provides recommendations for future practice and offers commentary on what data should be collected and reported to ensure continued advancement in this area.

While numerous police trainings have been subjected to scientific review, most evaluations assess a training's impact on future outcomes rather than test the effectiveness of various training methods used to disseminate curricula. Such indirect tests of training method impacts do not permit a rigorous systematic review of the topic, but they will allow inferences to be made concerning the relative merits of various training approaches. For the current review, particular emphasis is placed on indirect evidence drawn from high quality studies (e.g., trainings assessed using randomized control trial designs). Although remarkably unresearched, conclusions drawn from the few direct evaluations of training method impact suggest that various training techniques differentially impact learning.

This report intends to complement and provide additional context for another related report commissioned to examine the content of the police academy training and the core knowledge and skills to be included in the police curriculum (excluding the topic of police use of force). While current police academy curriculum is briefly highlighted to frame the present discussion, the substantive focus of the report is the structure and outcome of training methods used to disseminate and administer curriculum content.

This report is divided into five sections. Following the introduction, I begin by articulating the purpose of police training and five goals that I propose should guide police training efforts to promote the rule of law and protect the population most effectively. In the third section, I provide a general overview of current police training curriculum content, along with summaries concerning what is known about teaching settings, methods, and instructors. The fourth section provides a summary of existing police training evaluations. This review includes the focus of training assessments, evaluation methods, the known impacts of police training, and the generalizability of current police training evidence. I conclude with summaries and recommendations based on what is currently known (and unknown) about how police training methods achieve their intended goals. The report's final recommendations are centered around three fundamental conclusions meant to guide future data collection, research, and policy development.

2.0 REVIEW FRAMEWORK: THE PURPOSE AND GOALS OF POLICE TRAINING

Before presenting summaries of international evidence on existing police training delivery and evaluations, I outline the general purpose of police training, as conceptualized for the intent of this report. In stating this purpose, I draw from the Committee's guiding question that seeks to discover the most effective training methods for conveying the knowledge and skills police need to promote the rule of law and protect the population. Five specific police training goals are also proposed to support the current inquiry. The specific purpose and goals of police training outlined in this section provide a framework for the subsequent evidence review of current police training practices and guide the report's conclusions and recommendations.

2.1 PURPOSE OF POLICE TRAINING

In the spirit of the Committee's current effort, the primary purpose of police training should be to effectively convey core knowledge and develop skills needed for police to promote the rule of law and protect the population. This statement of purpose suggests two important points to consider. First, police training should use effective teaching methods and practices. Research demonstrating police training outcomes and the related methods used to teach officers are discussed in the following sections. But before discussing training outcomes, I acknowledge the second important point in this statement: police need specific knowledge and skills to promote the rule of law and protect the population effectively. Given that police academy curriculum can use effective training methods while simultaneously failing to provide the particular knowledge and skills needed to achieve these desired outcomes, I briefly summarize the findings contained in the related report commissioned to examine the content of the police academy training.

As argued in the complementary report by Mazerolle, all police education, at all levels, should focus on building foundational knowledge concerning the "power few" (Sherman, 2007), often referred to as the law of crime and crime problem concentration (Weisburd, 2015). As such, police must understand the degree to which crime is concentrated across offenders, victims/targets, and places (see Lee et al., 2017; Martinez et al., 2017; O et al., 2017 for systematic review summaries), why crime concentration matters, and how to identify the types and sources of data needed to identify risky people and places. To apply this knowledge to promote the rule of law and protect the population, officers must also know how to conceptualize police response to problems. Most importantly, frameworks for understanding police response must help officers to differentiate between reactive and proactive police responses and predict likely outcomes of specific interventions. Finally, officers must be made aware of the evidence base concerning effective (and ineffective) interventions and data needed to support successful initiatives that focus on high-risk people and groups, crime-prone places, and highly vulnerable victims.

Police academy curriculum must continually evolve as new scientific evidence concerning crime risk and response effectiveness becomes available. Therefore, any future policing mission or vision that helps police promote the rule of law and protect the population must include a commitment to continual training supporting on-going officer professional development.

Following Mazerolle's recommendations, as well as recommendations of the President's Task Force on 21st Century Policing (see Lum et al., 2016), such development should include training that teaches officers how to prevent community harm using the latest evidence concerning the law of crime concentrations and proactive police approaches, including effective offender-, place-, and victim-focused interventions. To the extent that police training curriculum does not incorporate our most current knowledge and skill sets needed to implement associated evidence-based interventions, any police training, regardless of method, will be less effectual, and police training will fail to fully achieve its intended purpose.

2.2 GOALS OF POLICE TRAINING

In addition to its general orientation and purpose, the literature suggests five additional police training goals to ensure that officers can effectively promote the rule of law and protect the population. The five goals – including that police training must be evidence-based, do no harm, support problem-solving, promote the appropriate use of discretion, and be adaptable – highlight basic criteria that can be used to evaluate any specific training curriculum or method. These goals are revisited in the conclusions and recommendations section of this report to assist with an assessment of current practices and provide recommendations for future research and practice.

Goal #1: Training must be evidence-based. For almost 30 years, Sherman and colleagues have argued that scientific evidence should inform police practice (see Sherman, 1998 for an early call for "evidence-based policing" based on lessons learned in the medical field and previous crime reduction experiments). Yet, some of our most popular police trainings remain unevaluated prior to agency adoption. Recent examples include de-escalation training (Engel, McManus, et al., 2020) and implicit bias training (Council on Criminal Justice Task Force on Policing, 2021b; Spencer et al., 2016), both of which have been widely adopted following demands by community leaders and residents, despite lacking strong evaluation and, in the case of implicit bias training, questions concerning the training's potential to change officer behaviors.

The absence of rigorous evaluation leaves critical questions unanswered. For example, we do not know what aspects of the curriculum are most impactful, if the training might have unintended consequences, the proper dosage (time spent that should be on training and the timing of re-training to retain skills and prevent knowledge decay), or the most effective methods for teaching the curriculum. It is important to note that there is tremendous variation in training standards across and within countries, even for crucial police training topics, including mental health and crisis de-escalation training (Plotkin & Peckerman, 2017). *For police to effectively promote the rule of law and protect the population, rigorous evaluations of police training outcomes must occur prior to, or at least in concert with, widespread promotion and implementation*.

Goal #2: Training must do no harm. Like many medical interventions that are iatrogenic (i.e., produce an adverse effect, not always due to error or negligence), policing can also produce unwanted consequences, even if highly successful in reducing crime (see Tankebe, 2020, for an example of counter-terrorism policing interventions that likely encourage radicalization). Several researchers have advocated for a harm-focused approach to help police better reduce community harm and prioritize how officers address problems associated with the law of crime

concentration (see Ratcliffe, 2015), yet it can be argued that this approach has not been fully embraced as it relates to police policy and training.

All trainings, even those concerned with routine policing activities, can impact police effectiveness. For example, we know that changes to the ways in which police conduct traffic stops can lead to reductions in unnecessary searches (Epp & Erhardt, 2020) and increased perceptions of police legitimacy (Mazerolle, Antrobus, et al., 2013). A focus on the control and reduction of the iatrogenic (Anderson & Burris, 2017) or harmful effects (Sparrow, 2008) of police training outcomes, on both the community and police, will allow us to better achieve our training purpose. *For police to effectively promote the rule of law and protect the population, we must consider a holistic view of police training impact, ensure that our training evaluations test for unwanted and potentially negative effects, and consider tandem training* (see McCraty & Atkinson, 2012) *that might help officers better cope with stressors of their occupational duties* (Blumberg et al., 2019).

***Goal #3: Training must support problem-solving*.** Sir Robert Peel's first policing principle tasks police with preventing crime and disorder to avoid over-reliance on the use of punishment and the need for military occupation to avoid community harm.[1] This is particularly important in the international context, as crime prevention as a police function is considered critical to encouraging and supporting the development of democratic governments (Bayley, 2005). The degree to which police can proactively prevent crime is dependent upon on their knowledge of crime science (as outlined in Mazerolle's report) and their ability to apply this information to solve community problems.

Problem-solving aimed at crime prevention requires public participation. Public perceptions of police legitimacy influence the degree to which people will voluntarily cooperate with the police (Mazerolle, Bennett, et al., 2013). *For police to effectively promote the rule of law and protect the population, officer training must offer crime science and procedural justice training to reduce the need for police use of force* (Wood et al., 2020) *and to secure public cooperation for collaborative problem-solving efforts* (Bolger & Walters, 2019; Sunshine & Tyler, 2003; Tyler, 2003; Tyler & Fagan, 2010; Walters & Bolger, 2019).

***Goal #4: Training must promote the appropriate use of discretion*.** Police require discretion to perform police work. If our goal is to move policing closer toward a harm reduction orientation, then guidance for, not eradication of, police discretion is needed (Beckett, 2016). It is not yet entirely clear how to best accomplish discretion-related training. For example, research finds that training focused on specific tactical decisions, like use of force, can improve officers' physiological control, situational awareness, and decision-making outcomes (Andersen & Gustafsberg, 2016). And, while training has been shown to enhance officer knowledge about policing's code of ethics, training to improve moral reasoning skills to help officers exercise appropriate discretion has not always been successful (De Schrijver & Maesschalck, 2015).

Yet, training to improve officer decision-making is critical to reducing community harm. Rightful policing (Meares & Neyroud, 2015) requires that police promote fairness and build trust among the public in order to effectively prevent crime and engage in constitutional (or ethical)

[1] See Emsley, 2013, for a discussion of these principles and debates concerning authorship attribution.

policing. One path toward achieving these outcomes might lie in training police to embrace the mission of attacking all forms of illegitimate hierarchies – dominance of the powerful over the powerless that results in harm (Sklansky, 2008). Reflection about the skills needed to fulfill the larger police purpose, beyond the basic behavioral competencies needed to enforce laws, should inform and guide training efforts (White, 2006). *For police to effectively promote the rule of law and protect the population, police training must prepare officers to do more than perform legalistic functions; it must clearly articulate and reinforce the knowledge and skills needed to engage in ethical decision-making*.

Goal #5: Training must be adaptable. Political, economic, social/cultural, organizational, and individual barriers to police training implementation vary across contexts. For example, police agencies looking to adopt training proven effective elsewhere might face legal (e.g., limits on officer discretion) or financial (e.g., lack of funding) obstacles unique to their own national or local governing structures and resources. We can expect cultural differences in societal expectations and perceptions of police, and differences in local customs and norms to affect how replications of police training, developed in a dissimilar context, will impact officers and communities. Agency (e.g., rank structure or available technologies) and officer (e.g., education level or prior training experience) characteristics can also pose significant barriers to successful training replication across contexts.

Global efforts to advance security and justice reform through police training require, at minimum, government and police buy-in, separation of the police from military forces, police accountability systems, the public's belief that police can protect them, police partnerships with human rights organizations, and intimate knowledge of local institutional and societal conditions (see Bayley, 2001). Assessment of these basic criteria, and efforts to cultivate necessary implementation conditions should precede or couple attempts at reform through training. *For police to effectively promote the rule of law and protect the population, police training must offer solutions to potential implementation, receptivity, and learning barriers across countries and localities.*

3.0 POLICE TRAINING OVERVIEW

A recent report from the Council on Criminal Justice Task Force on Policing (2021a) found that, "Police officer training in the U.S. varies significantly across departments, is relatively limited in duration, and is not well-aligned with what's known about effective training principles from other professions and countries" (pg. 1). Beyond the U.S., variation in police officer training across the globe is immense, with respect to both curriculum content and style. In this section, I discuss the alignment of curriculum and approaches with the aforementioned training purpose and goals. I briefly summarize what is known about the "what, how, where, and who" associated with police training methods. More specifically, I describe the general topics covered within the most referenced police training curriculum, some of the common settings and methods used to teach officers knowledge and skills, and what we know about the persons responsible for creating and administering police trainings.

3.1 CURRICULUM CONTENT

Police academy curriculum varies across the world and there is limited adoption of international standards for training content (Gerspacher et al., 2019).[2] In the U.S., police academies spend the vast majority of recruit training time on the major subject areas of operations – 213 hours, weapons/defensive tactics/use of force - 168 hours, and legal education – 86 hours, with additional time devoted to self-improvement (e.g., ethics, stress management, professionalism, health and fitness) – 89 hours (Reaves, 2016). Throughout the 1980s and 1990s, the vast majority of basic training focused on these task-oriented activities, rather than on activities to improve cognitive and decision-making abilities (Bradford & Pynes, 1999).

Not surprisingly, countries with lower rates of gun ownership and violence tend to spend less time on weapons training, with some countries focusing training on methods to avoid firearms use or promoting alternative tactics to firearms, such as martial arts (see Council on Criminal Justice Task Force on Policing, 2021a). As such, the drivers of police training curriculum topics appear to be highly contextual and culturally specific.

Ethnographic observations and interviews with police officers in the U.S., where levels of gun accessibility and gun violence victimizations are high, finds that officers adopt a cultural frame known as the danger imperative (Sierra-Arévalo, 2021). Police are socialized formally and informally into this frame that prioritizes the need for officer safety while emphasizing the ever-present threat of violence. The result is an increased probability that officers will engage in policy-deviant actions (e.g., speeding while not wearing a seatbelt). Deviations from agency policies, even if likely to result in catastrophic and deadly outcomes for both officers and the public, are justified within the danger imperative frame as necessary for safety and protection (Sierra-Arévalo, 2021). Police training curricula can further exacerbate and reinforce this frame, particularly those involving case studies focused on dangerous scenarios. To the degree to which such training promotes views that permit officer disidentification with the public and reinforces an ‘us versus them’ mentality (see Boivin et al., 2020), current curricula is at odds with the fundamental values of problem-solving, harm prevention, and police as legitimate protectors.

3.2 TEACHING SETTINGS AND METHODS

An international review of police recruit training programs reveals that the majority (about 75%) of recruit police training occurs in standalone blocks (Belur et al., 2019). These blocks are generally conducted within two primary settings. Recruits first learn within an academy, which provides a controlled learning setting that also involves classroom instruction. Academy training is typically followed by experiential learning within a field training setting. For example, police recruits in U.S. municipal police departments receive an average of approximately six months of

[2] Guidelines for police training content have been proposed by international organizations (as an example, see the Basic Principles on the Use of Force and Firearms by Law Enforcement Officials Adopted by the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders in Havana, 1990). However, international guidelines for developing police training focused on the content outlined in Mazerolle’s paper (see also this paper’s Purpose of Police Training section) have yet to be established.

basic academy training, and approximately four months of field officer training (Reaves, 2016). In some less common instances, field training is followed by a final block of learning within an academy setting (Belur et al., 2019). Officers in other parts of the world receive longer periods of basic training (e.g., Estonia, Croatia, and Germany) or, as in Finland and Norway, are required to attend 3-year police universities (Council on Criminal Justice Task Force on Policing, 2021a). Beyond recruit training, officers might receive training during roll calls (e.g., new agency procedure or crime update training), in-service training (e.g., legal updates or on-going firearms training), or specialized training (e.g., SWAT or mental health response training) (Martin, 2020). A variety of teaching methods are used within these various settings.

Advances in adult teaching practices are reflected in the principles of andragogy. Andragogy is a learning philosophy focused on adult-learning, rather than child-learning (see Knowles, 1990; Knowles, 1980). Although descriptions of andragogy vary in education literature, this learning philosophy maintains the importance of exercising six principles to enhance adult learning. Andragogy suggests that adults, including police (Vodde, 2012), learn most effectively when teaching methods:

1. Explain why the information contained within curriculum is critical knowledge needed to perform their duties
2. Align content with previous knowledge and competencies to increase openness to new concepts and combat mental rigidity
3. Promote methods that include self-directed learning and autonomy
4. Create environments and systems that support and reinforce a continuous learning culture
5. Use application-focused exercises to demonstrate the content's usefulness to solve current problems
6. Instill self-determination to learn

It is argued that teaching strategies grounded in andragogic principles are more effective in achieving police training purposes and goals than traditional teaching-learning strategies, such as classroom lecture alone. For instance, it has been noted that, despite the fact that police work is conducted in democratic societies, much police training involves militaristic-style drills and occurs in paramilitary, authoritarian, and punitive environments that are unconducive to andragogy in practice (Birzer, 2003). Training subjects that better prepare officers to promote the rule of law and protect the population, such as problem-solving, cultural diversity, communication and conflict resolution, and community organization skills (Bradford & Pynes, 1999) are proposed to benefit from active-style learning promoted by andragogy principles (Birzer & Tannehill, 2001).

Slightly more than a fourth of police academies examined in a systematic international review incorporated andragogy principles to facilitate police training (Belur et al., 2019). This same study found that one promising teaching strategy grounded in andragogy, problem-based learning (PBL), was used in about 15 percent of police training academies. While evidence concerning recruit and trainer perceptions of PBL effectiveness is mixed, at least one study has found that those exposed to PBL techniques acquired thought processes that better supported and aligned with community policing strategies than those trained using traditional style methods (see McGinley et al., 2019). Academies have adopted PBL-strategies, including scenario-based

training, in efforts to develop higher-level problem-solving and decision-making skills (see Werth, 2011). One quasi-experimental study reported that police academy trainees believed problem-based learning produced better problem-solving and critical thinking skills than lecture-based academy training (Vander Kooi & Palmer, 2014). To strengthen the effectiveness of andragogy, the integration of other learning theories, including Cognitive Load Theory, have been suggested to improve learning retention and skills acquisition (Mugford et al., 2013). The degree to which these types of integrations have occurred in police academies is currently unknown.

Evidence concerning andragogy's impact on adult learning is mixed, but generally positive.[3] Evaluations of andragogic-based training in other professions suggest that academy shifts toward adult learning models and away from authoritarian, paramilitary style instruction might better develop the types of skills officers need to more effectively promote the rule of law and protect the population. Experts argue that modern police work requires skill-building in areas that extend far beyond the basic task-oriented curriculum that has historically dominated police training. Police training that develops cognitive, emotional, social and moral skillsets is required to meet contemporary policing challenges (Blumberg et al., 2019). Research directly testing the impact of trainings revised to align with andragogic principles is needed to determine if andragogy holds promise for further developing these officer skillsets.

3.3 TRAINING INSTRUCTORS

Existing literature does not provide a comprehensive picture of the characteristics of police personnel typically tasked with designing training curriculum content and selecting training methods. Nor does it offer a thorough description of those providing police training instruction. Yet, some word about who might carry out these tasks – and how they engage in training – is necessary, given the implications of these personnel decisions for police trainings. Poor training implementation by agencies or instructors can produce unintended consequences as a result of training mechanisms 'backfiring' (Belur et al., 2019).

A randomized field trial conducted in Scotland illustrates this backfire effect. Procedural justice training was conducted to determine if such police training could increase perceptions of police legitimacy among drivers stopped during a national road safety campaign. The results did not support the anticipated outcomes and instead decreased perceptions of police legitimacy (MacQueen & Bradford, 2017). The researchers concluded that lack of officer trust in police senior management adversely affected officers' attitudes and behaviors, which in turn, prompted negative interactions with motorists.

Trustworthiness of agency leadership and instructors appear to influence training outcomes. So does the type of learning method selected by the trainer. Trainers with a penchant for sharing 'war stories' in an attempt to engage officers in scenario-based learning, have been suspected of creating barriers to the effective delivery of problem-solving training curriculum (see Chappell &

[3] Although a systematic review of trainings involving andragogic principles is beyond the scope of the current project, see Mukhalalati & Taylor, 2019, for a review of various adult learning theories and their implementation in the healthcare profession.

Lanza-Kaduce, 2010). Further, such training methods have been argued to misrepresent actual police working conditions and duties (Belur et al., 2019), further reinforcing distorted perceptions concerning the dangers of police work and shifting focus away from problem-solving.

In addition to perceived trustworthiness and narratives used by trainers to facilitate scenario-based learning, specific behaviors of trainers influence training outcomes. Field Training Officers (FTOs) play a critical role in socializing officers by demonstrating and reinforcing police agency and community values outside of the academy setting. This socialization process has been shown to influence trainee misconduct and field application of academy training. For example, research demonstrates a significant relationship between the misconduct of FTOs (Getty et al., 2016) and peers (Ouellet et al., 2019) on officer misconduct. Research also finds that some FTOs actively negate academy learning (Hundersmarck, 2009). Thus, FTO assignment, particularly assignment to FTOs who engage in or fail to address officer misconduct and assignment to FTOs who provide training incongruent with academy curriculum, can negatively impact police training outcomes.

I offer one final note regarding those who provide instruction. There are some concerns related to the impact of trainers' cultural competency on police training outcomes. It is accepted that, in order to accurately assess situational threats, officers must be able to address personal biases and be able to communicate despite potential religious, ideological, cultural, and identity barriers (Gerspacher et al., 2019). To the extent that trainers are unfamiliar with these barriers within a particular jurisdiction (e.g., U.S. officers training lacking cultural competency within an international context), they are ill-equipped to serve as effective instructors.

4.0 POLICE TRAINING EVALUATIONS

While there is vast research on police culture, with much focused on ethical concerns, police training program evaluations are relatively scarce (Platz et al., 2017). A review of police evaluation studies reveals a sparse and methodologically weak evidence base on the topic of police training and education (Telep, 2016). Acknowledging these limitations, I provide a review of evaluations focused on training methods and their effectiveness in preparing police officers to promote the rule of law and protect the population. The review will highlight four critical dimensions of police training evaluations, including evaluation focus, evaluation methods, training impacts, and generalizability.

4.1 EVALUATION FOCUS

Almost all police training evaluations attribute outcomes to training content, rather than the methods used to conduct the training. For example, one systematic review (McGinley et al., 2019) found that about 66% of police recruit training evaluations assessed the impact of an entire training program (e.g., role of higher education or field training), or the impact of specific training content (e.g., cultural diversity, communication, stress coping mechanisms, firearms/use of force training). Some training evaluations assessed how recruits learn (13%), leading to the

conclusion that there is often incongruence between academy and field training. While a few training evaluations examined the impact of new teaching or learning tools (7%), such as the use of simulators or virtual learning environments (McGinley et al., 2019), the studies did not directly compare the outcomes of these trainings to trainings that offered the same curricula using a different teaching method.

Police training evaluations have also focused on the impact of training time and repetition. For example, a recent study examining the impact of different academy training formats (e.g., block training, spaced sessions, performance feedback) found that initial training sessions failed to generate mastery-level performance (O'Neill et al., 2019). The authors found that more complex and time-intensive skills failed to receive what was most needed – more follow-up and practice repetitions. Still, with few exceptions (e.g., see Kratzig, 2016), we know far too little about knowledge or skills decay for even our most common police training curricula.[4]

With regard to police in-service training evaluations, a systematic review attempt was recently abandoned given the small number of existing studies that proved insufficient for drawing conclusions regarding any single topic or training technique (Huey, 2018). The author of this failed review echoes Neyroud's (2011) concerns that we continue to make substantial monetary investments without knowing what works and for whom, whether we are meeting training objectives, and what training techniques work best in which contexts.

Five studies[5] have specifically examined the outcomes of unique police training methods (i.e., systematically compared one teaching method to others). See Table 1. The five studies were conducted in four different global north countries. Each study focused on a different training topic and assessed a different teaching strategy. Two evaluations were conducted using randomized control trials, and three were conducted using quasi-experimental designs. Four of the five training method evaluations found evidence of improved learning or performance outcomes. Given the small number identified, I offer brief summaries of each evaluation.

Study #1. A quasi-experimental study compared traditional sexual assault response police academy training (one hour devoted to the topic) to two experiential training protocols – one recruit class receiving a four-hour sexual assault workshop and another receiving four hours of sexual assault response training integrated within the general police training curriculum (Lonsway, 1996). The training was conducted in the basic academy offered at the University of Illinois, Police Training Institute (USA). While all three groups exhibited the same general knowledge, rape myth acceptance, and case judgments, workshop group members were more likely to address victim welfare, suspect responsibility, and broader police investigatory options. Integrated training curriculum participants demonstrated greater proficiency in interviewing content and style. The authors conclude that focused workshops, rather than integrated

[4] Systematic reviews examining the process and timing of knowledge and skills decay have been performed in other fields, including healthcare (see Yang et al., 2012).

[5] These evaluations were identified through an extensive literature search conducted in March and April 2021, and a secondary search conducted in June 2021. However, given time and resource restraints, traditional systematic review protocols could not be followed. It is possible that other existing training method assessments, particularly unpublished evaluations, were unintentionally excluded from this review.

curriculum, best improve learning for specialized topics that recruits cannot yet connect to a broader understanding of police functions.

Study #2. A quasi-experimental study compared learning outcomes between two New Jersey (USA) recruit basic police training academies – the first generally using traditional militaristic pedagogic-style instruction, and the second using teaching methods aligned with andragogic principles to facilitate adult learning (Vodde, 2009). In addition to increased learner satisfaction, problem-based learning assessments revealed that recruits in the andragogic-aligned training academy showed greater critical thinking, communication, problem-solving, and decision-making competencies than those who received traditional academy training.

Study #3. A randomized control was used to evaluate the Greater Manchester Police procedural justice training in Canada (Wheller et al., 2013). A traditional classroom-based teaching method was compared to two combinations of classroom-based and scenario-based teaching methods. Finding no difference in outcomes between the treatment groups,[6] the authors argued that the size of their participant pools might have hindered meaningful training group comparisons.

Study #4. A randomized control trial was used to assess a Child Interview Simulator game, co-designed with U.K. police forces (Adams et al., 2019). The game was designed to help police recruits learn to take initial child witness statements. Assessment outcomes found that recruits who participated in game learning displayed better tacit understanding, including demonstrations of empathy and attention, while those who received the same curriculum in face-to-face training displayed lower levels of understanding the importance of gaining child respect through tactics used in the interviewing process.

Study #5. A mixed-method quasi-experimental design was used to assess differences between two methods for teaching German police recruits (n = 20) knife defense techniques (Koerner et al., 2020). Linear training (learners are taught how to execute knife movement and technique by a trainer) was compared to nonlinear training (scenario-based, problem-solving training that focuses on how to execute decisions) outcomes. The authors report that, while both groups improved their performance, the nonlinear teaching method showed greater increases in problem-solving abilities in a nine-week post-training retention assessment. The nonlinear training group were struck less and ended attacks faster and more frequently than linear group participants. Interestingly, qualitative evaluation found that the nonlinear group was less satisfied with their training, desiring more technique-focused rather than decision-making instruction.

[6] Despite being unable to detect differences between treatment groups based on training method, the training curriculum to improve officer communication had a significant positive effect on officer attitudes and behavior, as well as victims' perceptions of their interactions with officers, regardless of training method.

Table 1 Training Method Evaluations

STUDY	TRAINING TOPIC	TRAINEES	TRAINING METHOD	EVALUATION METHOD	IMPROVED OUTCOMES?
Lonsway, 1996	Sexual assault response	Recruits, Police Training Institute, University of Illinois, USA	Compared 1-hour course to 4-hour workshop and 4-hour integrated academy training	Quasi-experiment	Yes
Vodde, 2009	General academy training	Recruits, 2 New Jersey Regional Police Academies	Compared traditional pedagogic to revised andragogic basic training	Quasi-experiment	Yes
Wheller Et Al., 2013	Procedural justice	Officers, Greater Manchester Police, Canada	Compared classroom-based to 2 combinations of classroom-based and scenario-based learning	Randomized control trial	No
Adams Et Al., 2019	Child witness statements	Recruits, 3 U.K. Police Forces	Compared simulator game to face-to-face gaming	Randomized control trial	Yes
Koerner Et Al., 2020	Knife defense techniques	Recruits, Germany	Compared Linear (tactical) to Non-linear (decision-making) training	Quasi-experiment	Yes

4.2 EVALUATION METHODS

Regarding entry-level training programs for police recruits, a systematic review reveals that most police training evaluations use a quantitative approach (50%), followed by mixed methods (33%) and qualitative (17%) designs (McGinley et al., 2019). Further, this same study, which examined a total of 109 police training evaluations, found that half of all evaluations suffer from weak methodological rigor (50%), with only a small proportion using strong research designs (12%). Some of the strongest evidence available stems from evaluations using experimental research designs, including randomized controlled trials.

Some of the most rigorous police training evaluations have examined intervention programs focused on a variety of topics, but most have focused on procedural justice training (see, for example, Antrobus et al., 2019; Mazerolle et al., 2012; Murphy et al., 2014; Owens et al., 2018; Rosenbaum & Lawrence, 2017; Sahin et al., 2017; Wheller et al., 2013). Other rigorous police training evaluations have examined implicit bias training (Worden et al., 2020), de-escalation training (Engel, Corsaro, et al., 2020), social interaction training (Aremu, 2006; McLean et al., 2020), training to reduce police use of force and improve decision-making (Andersen & Gustafsberg, 2016), officer resilience training (Chitra & Karunanidhi, 2021; McCraty & Atkinson, 2012), and training to improve attitudes toward workplace diversity (Platz et al., 2017). While rigorous evaluations of police training are becoming more commonplace, the few existing teaching method evaluations do not yet allow us to draw conclusions about which methods are most effective for particular training topics.

4.3 TRAINING IMPACTS

Most of what we know about the impacts of police training stem from the studies cited in the previous sections. In general, the evidence suggests that training *can* change targeted police behaviors, justice-related outcomes, and police-public interactions. For example, procedural justice training for police recruits resulted in higher ratings of desired on-the-job behaviors by mentors (Antrobus et al., 2019). Training aimed at slowing down officer thought processes through supervisory intervention was shown to reduce officer use of force and potentially excessive discretionary arrests (Owens et al., 2018). Procedural justice training for officers conducting roadside random breath testing found that people stopped by trained officers were more likely to report changing their views on drinking and driving, as well as report higher levels of satisfaction and compliance (Mazerolle et al., 2012). Further, resilience training to improve officer self-awareness, attitude, interpersonal skills, and emotional management has been shown to reduce negative job-related conditions, including psychological stress (Chitra & Karunanidhi, 2021).

Not all evaluations of police training report anticipated positive effects or positive impacts on all expected outcomes (see La Vigne et al., 2019, for an example of disparate training outcomes across six U.S. cities). While the evaluation literature does not always offer reasons for mixed or negative results, some studies have found that negative training outcomes can be attributed to various situational factors, including implementation failure (MacQueen & Bradford, 2017), as well as the selection and performance of training instructors (Wolfe et al., 2020). Thus, while we know that police training can produce intended outcomes, we need more evaluations to identify how and why some police training practices are more effective than others. When police training programs produce intended outcomes, we must attribute the programs' success to both the curriculum and selected training method. However, when police training programs *fail* to produce intended outcomes, we cannot disentangle curriculum failures from training method failures without further experimentation.

4.4 GENERALIZABILITY

The generalizability of police training evaluations is limited for several reasons. First, existing knowledge of training outcomes is geographically biased. The police training methods evaluations identified in the current review were all conducted in the Global North. A systematic review of all recruit training evaluation studies found that more than half (61%) have been conducted in the U.S., followed in quantity by Australia (14%) and the U.K. and Canada (9% and 8% respectively) (McGinley et al., 2019). The geographic concentration of police training studies limits the generalizability of existing knowledge to places with different political structures, economies, and cultures.

As an example, Mazerolle's paper suggests that police training should familiarize officers with focused deterrence programs to address high-risk people. Focused deterrence, first developed and implemented in Boston, Massachusetts (USA), involves strategies to reduce repeat offending, particularly among those involved in group or gang violence. A meta-analysis of 24 focused deterrence strategy evaluations found moderate crime reduction effects (Braga et al.,

2018). All but one of the studies[7] was conducted in the United States. Yet, we know that the organizational structures and characteristics of street and organized crime gangs differ considerably across cultures and regions (see Ratcliffe, 2016; Ratcliffe et al., 2014). The degree to which a focused deterrence strategy could achieve similar crime reduction outcomes in other parts of the world, particularly countries outside of the Global North, is unknown.

Knowledge of police training outcomes is also largely derived from training evaluations conducted within larger police agencies. This is particularly true for training evaluations that use the most rigorous experimental research designs. Given that mid-sized and smaller police agencies lack the number of officers needed to detect significant statistical effects, especially when using randomized controlled trials, less is known about potential training impacts in these agencies.[8] There is an immediate need for replications within various contexts to determine training suitability across diverse agencies and cultures.

5.0 CONCLUSIONS AND RECOMMENDATIONS

In summary, more scientific work is needed to understand which training methods can best help police to acquire the knowledge and skills necessary to promote the rule of law and protect the population. Limited existing evidence that training methods can impact learning and training outcomes, suggesting an immediate need for more research in this area. I draw eight additional conclusions from the current review:

1. The overwhelming majority of police training curriculum does not focus on the core knowledge and skills (identified in Mazerolle's contribution) needed for police to promote the rule of law and protect the population.
2. The police education landscape has shifted substantially over the past two decades (see Cordner & Shain, 2011), but most police training is still delivered through traditional militaristic pedagogic-style instruction.
3. Traditional police training methods appear less effective in cultivating the skills needed for community engagement than adult-learning and problem-solving teaching methods (Murphy, 2017).
4. A survey of broader training evaluations reveals that training programs can change police behavior, justice outcomes, and perceptions of police legitimacy.
5. Training instructor characteristics and competencies influence officer learning receptivity and performance outcomes.
6. Few studies have focused on assessing the independent impact of teaching methods, but our available evidence suggests that teaching methods selected for curriculum delivery can directly affect officer learning.
7. The number of rigorous police training evaluations has increased over time, but the limited number of teaching method impact studies do not permit us to draw strong conclusions about which methods work best, are most appropriate in specific contexts, or most effectively convey information and skills associated with specific training topics.
8. Geographic evaluation bias greatly restricts the generalizability of known police training outcomes to the larger global context.

[7] The exception was an evaluation conducted in Glasgow, Scotland.

[8] This problem plagues fragmented systems, like local United States or Belgium police, but presents far few challenges for countries with centralized police agencies that provide local services across their nations.

I end this review with proposed directions for future data collection, research, and policy development that reinforce three fundamental conclusions: prevention is possible, all trainings are not equal, and training necessitates evaluation.

5.1 PREVENTION IS POSSIBLE

For police to obtain the core knowledge and skills needed to promote the rule of law and protect the population, police training curriculum must incorporate the principles of crime science. Knowledge of crime science principles will promote officer understanding that crime (1) is patterned/concentrated and (2) can be prevented. The idea that "prevention is possible," embraced as a part of a larger police vision/mission statement would represent a marked shift from customary reactive approaches and current police perspectives. For police to protect the population, officers must be able to develop effective crime reduction strategies that simultaneously increase perceptions of police legitimacy (see Weisburd, 2016). To do this, we must ensure that training supports problem solving and promotes the appropriate use of discretion (training goals #3 and #4 proposed in this paper).

Future data collection and research efforts should examine:

- The degree to which crime science has been incorporated into police training curriculum
- Ways to integrate crime science into existing trainings and how to best introduce concepts that do not align with existing curriculum
- Development of protocols to assess agency capacity to collect and analyze data, allowing for the development and evaluation of data-informed strategies
- The most effective methods for teaching crime science principles within various settings (e.g., academies, field, roll call, in-service)

5.2 ALL TRAININGS ARE NOT EQUAL

Training designs vary tremendously. Aspects of training that can influence officer learning and performance include curriculum content, teaching approaches, and instructor/learner characteristics and competencies. The impact of these training characteristics is highly context-dependent. Training is subject to potential political, economic, social/cultural, organizational, and individual barriers. To overcome these barriers, we must ensure that training is adaptable to a wide variety of contexts (training goal #5 proposed in this paper).

Future data collection and research efforts should examine:

- General teaching approaches and combinations of teaching mechanisms that effectively change behavior across contexts, including those identified in other disciplines (see Wheller & Morris, 2010)
- The establishment of protocols for the design and dissemination of trainings in new contexts

- Theory and framework development to help trainers identify and adapt to common training barriers
- Various mechanisms, including emerging technologies, to facilitate initial trainings and drive continuous learning

5.3 TRAINING NECESSITATES EVALUATION

Police agencies, in partnership with government, must develop mechanisms for continued assessment and advancement of officer training programs. Police training can best achieve its purpose when guided by strong theory, informed by current and rigorous evidence, and administered using highly effective instruction methods. Comprehensive training assessments can help to detect and limit iatrogenic effects, or negative unintended consequences. In short, our objective should be to prevent harmful training outcomes through the implementation of evidence-based training (training goals #1 and #2 proposed in this paper).

Future data collection and research efforts should examine:

- Systematic assessments of iatrogenic effects associated with current police training,
- Protocols for early identification of potential iatrogenic effects during training development and implementation
- Potential systems for continuous development and assessment of police training that provides officers with needed core knowledge and skills
- Platforms that could aid in timely dissemination of new trainings and assessment findings

6.0 REFERENCES

Adams, A., Hart, J., Iacovides, I., Beavers, S., Oliveira, M., & Magroudi, M. (2019). Co-created evaluation: Identifying how games support police learning. *International Journal of Human Computer Studies*, *132*, 34–44. https://doi.org/10.1016/j.ijhcs.2019.03.009

Andersen, J. P., & Gustafsberg, H. (2016). A training method to improve police use of force decision making: A randomized controlled trial. *SAGE Open*, *6*(2). https://doi.org/10.1177/2158244016638708

Anderson, E., & Burris, S. (2017). Policing and public health: Not quite the right analogy. *Policing and Society*, *27*(3), 300–313. https://doi.org/10.1080/10439463.2016.1231188

Antrobus, E., Thompson, I., & Ariel, B. (2019). Procedural justice training for police recruits: Results of a randomized controlled trial. *Journal of Experimental Criminology*, *15*(1), 29–53. https://doi.org/10.1007/s11292-018-9331-9

Aremu, A. O. (2006). The effect of two psychological intervention programmes on the improvement of interpersonal relationships of police officers in Osogbo, Nigeria. *Criminal Justice Studies*, *19*(2), 139–152. https://doi.org/10.1080/14786010600764518

Bayley, D. H. (2001). Democratizing the police abroad: What to do and how to do it. In *Issues in International Crime*. U.S. Department of Justice https://www.ojp.gov/pdffiles1/nij/188742.pdf

Bayley, D. H. (2005). *Changing the guard: Developing democratic police abroad.* Oxford University Press.

Beckett, K. (2016). The uses and abuses of police discretion: Toward harm reduction policing. *Harvard Law and Policy Review*, *10*(1), 77–100.

Belur, J., Agnew-Pauley, W., Mcginley, B., & Tompson, L. (2019). A systematic review of police recruit training programmes. *Policing*, *14*(1), 76–90. https://doi.org/10.1093/police/paz022

Birzer, M. L. (2003). The theory of andragogy applied to police training. *Policing*, *26*(1), 29–42. https://doi.org/10.1108/13639510310460288

Birzer, M. L., & Tannehill, R. (2001). A more effective training approach for contemporary policing. *Police Quarterly*, *4*(2), 233–252.

Blumberg, D. M., Schlosser, M. D., Papazoglou, K., Creighton, S., & Kaye, C. C. (2019). New directions in police academy training: A call to action. *International Journal of Environmental Research and Public Health*, *16*(24). https://doi.org/10.3390/ijerph16244941

Boivin, R., Faubert, C., Gendron, A., & Poulin, B. (2020). The 'us vs them' mentality: A comparison of police cadets at different stages of their training. *Police Practice and Research*, *21*(1), 49–61. https://doi.org/10.1080/15614263.2018.1555480

Bolger, P. C., & Walters, G. D. (2019). The relationship between police procedural justice, police legitimacy, and people's willingness to cooperate with law enforcement: A meta-analysis. *Journal of Criminal Justice*, *60*, 93–99. https://doi.org/10.1016/j.jcrimjus.2019.01.001

Bradford, D., & Pynes, J. E. (1999). Police academy training: Why hasn't it kept up with practice? *Police Quarterly*, *2*(3), 283–301. https://doi.org/10.1177/109861119900200302

Braga, A. A., Weisburd, D., & Turchan, B. (2018). Focused Deterrence Strategies and Crime Control: An Updated Systematic Review and Meta-Analysis of the Empirical Evidence. *Criminology and Public Policy*, *17*(1), 205–250. https://doi.org/10.1111/1745-9133.12353

Chappell, A. T., & Lanza-Kaduce, L. (2010). Police academy socialization: Understanding the

lessons learned in a paramilitary-bureaucratic organization. *Journal of Contemporary Ethnography*, *39*(2), 187–214. https://doi.org/10.1177/0891241609342230
Chitra, T., & Karunanidhi, S. (2021). The impact of resilience training on occupational stress, resilience, job satisfaction, and psychological well-being of female police officers. *Journal of Police and Criminal Psychology*, *36*(1), 8–23. https://doi.org/10.1007/s11896-018-9294-9
Cordner, G., & Shain, C. (2011). The changing landscape of police education and training. *Police Practice and Research*, *12*(4), 281–285. https://doi.org/10.1080/15614263.2011.587673
Council on Criminal Justice Task Force on Policing. (2021a). *Effectiveness of police training*. https://councilоncj.foleon.com/policing/assessing-the-evidence/iv-effectiveness-of-police-training/
Council on Criminal Justice Task Force on Policing. (2021b). *Implicit bias training*. https://councilоncj.foleon.com/policing/assessing-the-evidence/vii-implicit-bias/
De Schrijver, A., & Maesschalck, J. (2015). The development of moral reasoning skills in police recruits. *Policing*, *38*(1), 102–116. https://doi.org/10.1108/PIJPSM-09-2014-0091
Emsley, C. (2013). Peel's principles, police principles. In *The future of policing* (pp. 41–52). Routledge.
Engel, R. S., Corsaro, N., Isaza, G. T., & McManus, H. D. (2020). *Examining the impact of Integrating Communications, Assessment, and Tactics (ICAT) de-escalation training for the Louisville Metro Police Department: Initial findings.* https://www.theiacp.org/sites/default/files/Research Center/LMPD_ICAT Evaluation Initial Findings Report_FINAL 09212020.pdf
Engel, R. S., McManus, H. D., & Herold, T. D. (2020). Does de-escalation training work?: A systematic review and call for evidence in police use-of-force reform. *Criminology and Public Policy*, *19*(3), 721–759. https://doi.org/10.1111/1745-9133.12467
Epp, D. A., & Erhardt, M. (2020). The use and effectiveness of investigative police stops. *Politics, Groups, and Identities*, 1–14. https://doi.org/10.1080/21565503.2020.1724160
Gerspacher, N., Al-Rababah, M., Walker, J. B., & Wilson, N. L. (2019). *Community-oriented policing for CVE capacity: Adopting the ethos through enhanced training*. Hedayah.
Getty, R. M., Worrall, J. L., & Morris, R. G. (2016). How far from the tree does the apple fall? Field training officers, their trainees, and allegations of misconduct. *Crime and Delinquency*, *62*(6), 821–839. https://doi.org/10.1177/0011128714545829
Huey, L. (2018). *What do we know about in-service police training? Results of a failed systematic review*. *40*, 1–19. https://ir.lib.uwo.ca/sociologypubhttps://ir.lib.uwo.ca/sociologypub/40
Hundersmarck, S. (2009). Police recruit training: Facilitating learning between the academy and field training. *FBI Law Enforcement Bulletin*, *78*(8), 26–31. http://dx.doi.org/10.1016/j.jaci.2012.05.050
Knowles, M. (1990). *The adult learner: A neglected species*. Gulf Publishing Co.
Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy* (2nd ed.). Association Press.
Koerner, S., Staller, M. S., & Kecke, A. (2020). "There must be an ideal solution…"Assessing training methods of knife defense performance of police recruits. *Policing*, *44*(3), 483–497. https://doi.org/10.1108/PIJPSM-08-2020-0138
Kratzig, G. P. (2016). *Skill retention: A test of the effects of overlearning and skill retention*

interval on maintenance of infrequently used complex skills [Unpublished Doctoral Dissertation]. University of Regina.

La Vigne, N., Jannetta, J., Fontaine, J., Lawrence, D. S., & Esthappan, S. (2019). *The national initiative for building community trust and justice: Key process and outcome evaluation findings*. https://www.urban.org/sites/default/files/publication/100704/national_initiative_for_building_community_trust_and_justice_3.pdf

Lee, Y., Eck, J. E., O, S., & Martinez, N. N. (2017). How concentrated is crime at places? A systematic review from 1970 to 2015. *Crime Science*, *6*(1). https://doi.org/10.1186/s40163-017-0069-x

Lonsway, K. A. (1996). Police Training in Sexual Assault Response: Comparison of Approaches. In *UMI Dissertation*. University of Illinois at Urbana-Champaign.

Lum, C., Koper, C., Gill, C., Hibdon, J., & Telep, Cody, and L. R. (2016). *An evidence assessment of the recommendations of the president's task force on 21st century policing — Implementation and research priorities*. International Association of Chiefs of Police.

MacQueen, S., & Bradford, B. (2017). Where did it all go wrong? Implementation failure—and more—in a field experiment of procedural justice policing. *Journal of Experimental Criminology*, *13*(3), 321–345. https://doi.org/10.1007/s11292-016-9278-7

Martin, R. H. (2020). A Framework of U.S. Contemporary Police Training: Select Types of Basic Training and Purpose of Field, Inservice, and Specialized Training. *Journal of Education and Training Studies*, *8*(7), 1. https://doi.org/10.11114/jets.v8i7.4892

Martinez, N. N., Lee, Y., Eck, J. E., & O, S. (2017). Ravenous wolves revisited: A systematic review of offending concentration. *Crime Science*, *6*(1). https://doi.org/10.1186/s40163-017-0072-2

Mazerolle, L., Antrobus, E., Bennett, S., & Tyler, T. R. (2013). Shaping citizen perceptions of police legitimacy: A randomized field trial of procedural justice. *Criminology*, *51*(1), 33–63. https://doi.org/10.1111/j.1745-9125.2012.00289.x

Mazerolle, L., Bennett, S., Antrobus, E., & Eggins, E. (2012). Procedural justice, routine encounters and citizen perceptions of police: Main findings from the Queensland Community Engagement Trial (QCET). *Journal of Experimental Criminology*, *8*(4), 343–367. https://doi.org/10.1007/s11292-012-9160-1

Mazerolle, L., Bennett, S., Davis, J., Sargeant, E., & Manning, M. (2013). Legitimacy in Policing: A Systematic Review. *Campbell Systematic Reviews*, *9*(1). https://doi.org/10.4073/csr.2013.1

McCraty, R., & Atkinson, M. (2012). Resilience training program reduces physiological and psychological stress in police officers. *Global Advances in Health and Medicine*, *1*(5), 44–66. https://doi.org/10.7453/gahmj.2012.1.5.013

McGinley, B., Agnew-Pauley, W., Tompson, L., & Belur, J. (2019). Police recruit training programmes: A systematic map of research literature. *Policing*, *14*(1), 52–75. https://doi.org/10.1093/police/paz019

McLean, K., Wolfe, S. E., Rojek, J., Alpert, G. P., & Smith, M. R. (2020). Randomized controlled trial of social interaction police training. *Criminology and Public Policy*, *19*(3), 805–832. https://doi.org/10.1111/1745-9133.12506

Meares, T. L., & Neyroud, P. (2015). *Rightful policing*. U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.

Mugford, R., Corey, S., & Bennell, C. (2013). Improving police training from a cognitive load

perspective. *Policing*, *36*(2), 312–337. https://doi.org/10.1108/13639511311329723
Mukhalalati, B. A., & Taylor, A. (2019). Adult Learning Theories in Context: A Quick Guide for Healthcare Professional Educators. *Journal of Medical Education and Curricular Development*, *6*, 238212051984033. https://doi.org/10.1177/2382120519840332
Murphy, Kenneth. (2017). Community engagement: Considering adult-learning and problem-solving methodologies for police training. *European Police Science and Research Bulletin*, *16*, 87–97. https://bulletin.cepol.europa.eu/index.php/bulletin/article/view/246
Murphy, Kristina, Mazerolle, L., & Bennett, S. (2014). Promoting trust in police: Findings from a randomised experimental field trial of procedural justice policing. *Policing and Society*, *24*(4), 405–424. https://doi.org/10.1080/10439463.2013.862246
Neyroud, P. (2011). *Review of police leadership and training*. https://www.gov.uk/government/publications/review-of-police-leadership-and-training
O'Neill, J., O'Neill, D. A., Weed, K., Hartman, M. E., Spence, W., & Lewinski, W. J. (2019). Police academy training, performance, and learning. *Behavior Analysis in Practice*, *12*(2), 373–374. https://doi.org/10.1007/s40617-019-00332-x
O, S., Martinez, N. N., Lee, Y., & Eck, J. E. (2017). How concentrated is crime among victims? A systematic review from 1977 to 2014. *Crime Science*, *6*(1). https://doi.org/10.1186/s40163-017-0071-3
Ouellet, M., Hashimi, S., Gravel, J., & Papachristos, A. V. (2019). Network exposure and excessive use of force: Investigating the social transmission of police misconduct. *Criminology and Public Policy*, *18*(3), 675–704. https://doi.org/10.1111/1745-9133.12459
Owens, E., Weisburd, D., Amendola, K. L., & Alpert, G. P. (2018). Can you build a better cop?: Experimental evidence on supervision, training, and policing in the community. *Criminology and Public Policy*, *17*(1), 41–87. https://doi.org/10.1111/1745-9133.12337
Platz, D., Sargeant, E., & Strang, H. (2017). Effects of recruit training on police attitudes towards diversity: A randomised controlled trial of a values education programme. *Cambridge Journal of Evidence-Based Policing*, *1*(4), 263–279. https://doi.org/10.1007/s41887-017-0019-6
Plotkin, M., & Peckerman, T. (2017). *The Variability in Law Enforcement State Standards: A 42 State Survey on Mental Health and Crisis De-escalation Training*. https://csgjusticecenter.org/wp-content/uploads/2020/02/JC-LE-Survey.pdf
Ratcliffe, J. H. (2015). Towards an index for harm-focused policing. *Policing (Oxford)*, *9*(2), 164–182. https://doi.org/10.1093/police/pau032
Ratcliffe, J. H. (2016). Central American police perception of street gang characteristics. *Policing and Society*, *26*(3), 291–311. https://doi.org/10.1080/10439463.2014.942849
Ratcliffe, J. H., Strang, S. J., & Taylor, R. B. (2014). Assessing the success factors of organized crime groups: Intelligence challenges for strategic thinking. *Policing*, *37*(1), 206–227. https://doi.org/10.1108/PIJPSM-03-2012-0095
Reaves, B. A. (2016). State and local law enforcement training academies, 2013. In *Bulletin*. https://doi.org/10.4135/9781452218489.n32
Rosenbaum, D. P., & Lawrence, D. S. (2017). Teaching procedural justice and communication skills during police–community encounters: Results of a randomized control trial with police recruits. *Journal of Experimental Criminology*, *13*(3), 293–319. https://doi.org/10.1007/s11292-017-9293-3
Sahin, N., Braga, A. A., Apel, R., & Brunson, R. K. (2017). The impact of procedurally-just policing on citizen perceptions of police during traffic stops: The Adana randomized

controlled trial. *Journal of Quantitative Criminology*, *33*(4), 701–726. https://doi.org/10.1007/s10940-016-9308-7
Sherman, L. (1998). Ideas in American policing; Evidence based policing. In *Police Foundation*. https://www.policefoundation.org/wp-content/uploads/2015/06/Sherman-1998-Evidence-Based-Policing.pdf
Sherman, L. W. (2007). The power few: Experimental criminology and the reduction of harm. *Journal of Experimental Criminology*, *3*(4), 299–321. https://doi.org/10.1007/s11292-007-9044-y
Sierra-Arévalo, M. (2021). American policing and the danger imperative. *Law and Society Review*, *55*(1), 70–103. https://doi.org/10.1111/lasr.12526
Sklansky, D. A. (2008). *Democracy and the police*. Stanford University Press.
Sparrow, M. K. (2008). *The character of harms: Operational challenges in control*. Cambridge University Press.
Spencer, K. B., Charbonneau, A. K., & Glaser, J. (2016). Implicit Bias and Policing. *Social and Personality Psychology Compass*, *10*(1), 50–63. https://doi.org/10.1111/spc3.12210
Sunshine, J., & Tyler, T. R. (2003). The role of procedural justice and legitimacy in shaping public support for policing. *Law and Society Review*, *37*(3), 513–548. https://doi.org/10.1111/1540-5893.3703002
Tankebe, J. (2020). Unintended Negative Outcomes of Counter-Terrorism Policing: Procedural (in)Justice and Perceived Risk of Recruitment into Terrorism. In C. F. Weisburd D., Savona E., Hasisi B. (Ed.), *(eds) Understanding Recruitment to Organized Crime and Terrorism*. Springer, Cham.
Telep, C. W. (2016). Expanding the scope of evidence-based policing. *Criminology and Public Policy*, *15*(1), 243–252. https://doi.org/10.1111/1745-9133.12188
Tyler, T. R. (2003). Procedural justice, legitimacy, and the effective rule of law. *Crime and Justice*, *30*, 283–357. https://doi.org/10.1086/652233
Tyler, T. R., & Fagan, J. (2010). Legitimacy and cooperation: Why do people help the police fight crime in their communities? *Race, Ethnicity, and Policing: New and Essential Readings*, 84–117. https://digitalcommons.law.yale.edu/fss_papers/3037/
Vander Kooi, G. P., & Palmer, L. B. (2014). Problem-based learning for police academy students: Comparison of those receiving such instruction with those in traditional programs. *Journal of Criminal Justice Education*, *25*(2), 175–195. https://doi.org/10.1080/10511253.2014.882368
Vodde, R. F. (2009). *Andragogical instruction for effective police training*. Cambria Press.
Vodde, R. F. (2012). Changing paradigms in police training: Transitioning from a traditional to an andragogical model. In M. R. Haberfeld, C. A. Clarke, & D. L. Sheehan (Eds.), *Police organization and training: Innovations in reserach and practice* (pp. 27–44). Springer.
Walters, G. D., & Bolger, P. C. (2019). Procedural justice perceptions, legitimacy beliefs, and compliance with the law: a meta-analysis. *Journal of Experimental Criminology*, *15*(3), 341–372. https://doi.org/10.1007/s11292-018-9338-2
Weisburd, D. (2015). The law of crime concentration and the criminology of place. *Criminology*, *53*(2), 133–157. https://doi.org/10.1111/1745-9125.12070
Weisburd, D. (2016). Does hot spots policing inevitably lead to unfair and abusive police practices, or can we maximize both fairness and effectiveness in the new proactive policing? *University of Chicago Legal Forum*, *2016*, 661–690.
Werth, E. P. (2011). Scenario training in police academies: Developing students' higher-level

thinking skills. *Police Practice and Research*, *12*(4), 325–340. https://doi.org/10.1080/15614263.2011.563970

Wheller, L., & Morris, J. (2010). *What Works in Training and Behaviour change REA. October*, 1–23.

Wheller, L., Quinton, P., Fildes, A., & Mills, A. (2013). *The Greater Manchester Police procedural justice training experiment*. https://whatworks.college.police.uk/Research/Documents/GMP_Technical_Report_Final.pdf

White, D. (2006). A conceptual analysis of the hidden curriculum of police training in England and Wales. *Policing and Society*, *16*(4), 386–404. https://doi.org/10.1080/10439460600968164

Wolfe, S., Rojek, J., McLean, K., & Alpert, G. (2020). Social interaction training to reduce police use of force. *Annals of the American Academy of Political and Social Science*, *687*(1), 124–145. https://doi.org/10.1177/0002716219887366

Wood, G., Tyler, T. R., & Papachristos, A. V. (2020). Procedural justice training reduces police use of force and complaints against officers. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(18), 9815–9821. https://doi.org/10.1073/pnas.1920671117

Worden, R. E., Mclean, S. J., Engel, R. S., Cochran, H., Corsaro, N., Reynolds, D., Najdowski, C. J., & Isaza, G. T. (2020). *The impacts of implicit bias awareness training in the NYPD*. https://www1.nyc.gov/assets/nypd/downloads/pdf/analysis_and_planning/impacts-of-implicit-bias-awareness-training-in- the-nypd.pdf

Yang, C. W., Yen, Z. S., McGowan, J. E., Chen, H. C., Chiang, W. C., Mancini, M. E., Soar, J., Lai, M. S., & Ma, M. H. M. (2012). A systematic review of retention of adult advanced life support knowledge and skills in healthcare providers. *Resuscitation*, *83*(9), 1055–1060. https://doi.org/10.1016/j.resuscitation.2012.02.027