

# A MULTIDISCIPLINARY APPROACH TO IMPROVING POLICE INTERACTIONS WITH BLACK CIVILIANS

SIMONE DRAKE,<sup>\*</sup> KATRINA LEE,<sup>†</sup> KEVIN PASSINO,<sup>‡</sup> & HUGO  
GONZALEZ VILLASANTI<sup>§</sup>

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- I. INTRODUCTION
- II. HISTORICAL OVERVIEW
  - A. *Race and Policing*
  - B. *Police Training*
- III. PROJECT DESIGN
  - A. *Informed by a Multidisciplinary Team*
  - B. *Software Development*
- IV. FUTURE DIRECTIONS
- V. CONCLUSION

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<sup>\*</sup> Simone Drake is the Hazel C. Youngberg Trustees Distinguished Professor in the Department of English and holds a courtesy appointment at The Ohio State University Moritz College of Law.

<sup>†</sup> Katrina Lee is the John C. Elam/Vorys Sater Professor in Law and the Director of the Program on Dispute Resolution at The Ohio State University Moritz College of Law.

<sup>‡</sup> Kevin Passino is a professor in the Department of Electrical and Computer Engineering at The Ohio State University.

<sup>§</sup> Hugo Gonzalez Villasanti is an Assistant Professor in Mechanical Engineering at the University of Michigan. He was formerly a postdoctoral scholar at the Crane Center for Early Childhood Research and Policy at the College of Education and Human Ecology at The Ohio State University.

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## Abstract

*Over-use of force by law enforcement officers in the United States persists, along with a resulting state of crisis in Black communities. Massive protests in 2020–2021 calling for racial justice and for law enforcement reform have seemingly not been effective in turning the page on disproportionate use of force in interactions with Black civilians. Meanwhile, as protests and calls for legislative action and policy change continue, police training continues. Studies show that traditional Diversity, Equity, and Inclusion (DEI) training practices produce resentment and resistance, specifically in the context of law enforcement. The Authors—scholars of law, critical race and gender studies, and engineering—have taken a multidisciplinary-team problem-solving approach to the crisis, with a focus on police training. The Authors launched a project, funded by a grant from The Ohio State University’s Seed Fund for Racial Justice, that seeks to intervene in traditional DEI training at the Columbus Division of Police. With the aim of developing an innovative software program that augments in-person police training related to DEI, the project’s methodology includes using real-life policing scenarios, software design, site visits, and engagement by students in the “Antiracist Technology” engineering course at The Ohio State University. The project reflects a collaborative focus on negotiation and critical race and gender studies.*

*The Authors seek to explore how technology can enhance in-person instructional training related to DEI and cultural competency while simultaneously reducing resistance to and resentment of DEI training. Ultimately, the goal is to use technology, together with research on structural and institutional systems of oppression, to improve relations between law enforcement and Black civilians. This Article will first describe the problem the Authors’ project seeks to address and its multidisciplinary problem-solving approach. It will then provide a critical overview of the research this project builds from and outline the project methodology. Finally, the Authors share about related research.*

I. INTRODUCTION

The persistent over-use of force by law enforcement officers against Black civilians in the United States has resulted in a state of crisis.<sup>1</sup> The murder of George Floyd by Minneapolis police officers on May 25, 2020 catalyzed calls for racial justice and for law enforcement reform, yet those calls seemingly have not been effective in turning the page on disproportionate use of force by law enforcement officers in interactions with Black civilians.<sup>2</sup> Meanwhile, police departments continue to engage in training ostensibly focused on diversity, equity, and inclusion (DEI).<sup>3</sup> But their effectiveness is questionable, with studies showing conventional DEI training practices produce resentment and resistance.<sup>4</sup>

Against this backdrop lies an opportunity for imagining innovative social transformation through an interdisciplinary lens. A common phenomenon among Nobel Prize laureates is their tendency to be “creative polymaths,” or individuals who “purposely integrate formal and informal expertise from widely varied disciplines to yield new and useful ideas and practices.”<sup>5</sup> That observation suggests that solving complex social problems necessitates drawing on varied disciplines.

The research project discussed in this Article proceeds from the notion that interdisciplinary research offers opportunities for solving complex social problems that might not otherwise be resolved. The scholars leading the project<sup>6</sup> work in research fields including critical race and gender studies; engineering; and law—specifically, dispute resolution. This Article shares the design and initial phase of an interdisciplinary research project focused on law enforcement officer training. The project’s primary goal is the creation of a software program that assists in reducing officer use-of-force and enhancing de-escalation strategies, particularly with Black civilians. A secondary goal is

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<sup>1</sup> See *infra*, Sec. II.

<sup>2</sup> See *infra*, Sec. II.

<sup>3</sup> See *infra*, Sec. II.

<sup>4</sup> See *infra*, Sec. II.

<sup>5</sup> Robert Root-Bernstein & Michele Root-Bernstein, *Nobel Prizes Most Often Go to Researchers Who Defy Specialization—Winners Are Creative Thinkers Who Synthesize Innovations from Varied Fields and Even Hobbies*, THE CONVERSATION (Oct. 3, 2022, 8:07 AM), <https://theconversation.com/nobel-prizes-most-often-go-to-researchers-who-defy-specialization-winners-are-creative-thinkers-who-synthesize-innovations-from-varied-fields-and-even-hobbies-186193> [<https://perma.cc/XA8E-NZVM>].

<sup>6</sup> Authors Simone Drake, Katrina Lee, Kevin Passino, and Hugo Gonzalez Villasanti.

to contribute empirical data concerning DEI education in police training, which is under-studied.<sup>7</sup>

This collaboration centers technology as a tool for grappling with a national police culture that has tendencies to lack cultural and racial sensitivity awareness and useful communication and negotiation skills.<sup>8</sup> This problem is perhaps most pronounced when police engage with Black communities, and particularly Black men and Black boys, contributing to overuse of force.<sup>9</sup> Law enforcement overuse of force with Black civilians is so widespread that researchers and public policy institutes have issued statements attesting to the adverse health outcomes of Black families and communities resulting from police overuse of force and racial bias.<sup>10</sup>

Using common scenario-based police–civilian interactions where racial and cultural sensitivity can play a critical role in outcomes, the project’s designers aim to assist law enforcement officers in learning to engage with racially marginalized civilians in a manner that is respectful and conscious of potential bias and privilege. This approach flows from the Authors’ hypothesis that technology interventions may offer a more neutral training approach that will reduce or eliminate feelings of judgment by trainees, as well as a not-

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<sup>7</sup> Wesley G. Skogan et al., *Training Police for Procedural Justice*, 11 J. EXPERIMENTAL CRIMINOLOGY 319 (2014).

<sup>8</sup> See Rob Voigt et al., *Language from Police Body Camera Footage Shows Racial Disparities in Officer Respect*, 114 PROC. OF NAT’L ACAD. OF SCI. OF U.S. OF AM. 6521, 6525–26 (2017); Rod K. Brunson, “Police Don’t Like Black People”: African-American Young Men’s Accumulated Police Experiences, 6 CRIMINOLOGY & PUB. POL’Y 71, 81–82 (2007).

<sup>9</sup> See Roland G. Fryer Jr., *An Empirical Analysis of Racial Differences in Police Use of Force*, 127 J. POL. ECON. 1210, 1253 (2019); Jocelyn R. Smith Lee & Michael A. Robinson, “That’s My Number One Fear in Life. It’s the Police”: Examining Young Black Men’s Exposures to Trauma and Loss Resulting from Police Violence and Police Killings, 45 J. BLACK PSYCH. 143, 145–46 (2019); Frank Edwards et al., *Risk of Being Killed by Police Use of Force in the United States by Age, Race–Ethnicity, and Sex*, 116 PROC. OF NAT’L ACAD. OF SCI. OF U.S. OF AM. 16793, 16794–97 (2019). See generally Magnus Lofstrom et al., *Racial Disparities in Law Enforcement Stops*, PUB. POL’Y INST. CAL. (Oct. 2021), <https://www.ppic.org/?show-pdf=true&docraptor=true&url=https://www.ppic.org/publication/racial-disparities-in-law-enforcement-stops/> [<https://perma.cc/2JB6-GA7F>].

<sup>10</sup> See Council on Minority Mental Health & Health Disparities, *Position Statement on Police Brutality and Black Males*, AM. PSYCHIATRIC ASS’N (2018), <https://www.psychiatry.org/File%20Library/About-APA/Organization-Documents-Policies/Policies/Position-Police-Brutality-and-Black-Males.pdf> [<https://perma.cc/M8LE-KQN9>]; Sirry Alang et al., *Police Brutality and Black Health: Setting the Agenda for Public Health Scholars*, 107 AM. J. PUB. HEALTH 662, 662–63 (2017).

## A MULTIDISCIPLINARY APPROACH

uncommon perspective that human-led, workplace DEI training is often deemed irrelevant and ineffective by employees.<sup>11</sup>

One primary focus of the project is increasing self-awareness about bias and privilege prior to and leading up to police encounters with individuals. The process of developing and increasing self-awareness would involve a series of technology-aided self-assessments, interactive exercises, and debrief and discussions. By using technology to bear some of the burden of training, the researchers hope to offer a neutral mode of instruction to help law enforcement officers gain knowledge that will assist them in engaging with diverse civilian populations, as well as increase awareness of ways in which their knowledge of cultural differences might have room to grow.

A focus on pre-encounter development of self-awareness concerning these issues will provide the foundation for another primary focus: enhancing negotiations skills used during encounters with civilians. Those skills include engaging in difficult conversations, building trust, using empathy, listening, perspective-taking, and gathering information and feedback.<sup>12</sup> A hope is that this research will help inform about the extent to which software training paired with in-person instruction helps make difficult conversations less personal in a way that allows officers to be reflective on the issues and how they can make things better—rather than adopting a defensive posture.

This Article proceeds as follows: Section II identifies the problem addressed, providing background about police overuse of force in Black communities and the state of current DEI and race-related police training. Section III describes the design of the software development project, including its multidisciplinary nature, an overview of the areas informing the study, and the software development methodology. Section IV summarizes and looks to present and possible future work. Section V briefly concludes.

## II. HISTORICAL OVERVIEW OF THE PROBLEM

### A. *Race and Policing*

Due to the inextricable relationship between the birth of modern law enforcement during the early nineteenth century and the pre-existing slave patrols established in the eighteenth century, it is impossible to separate the concept of policing in the United States from a system—slavery—designed to

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<sup>11</sup> See Robert Livingston, *How to Promote Racial Equity in the Workplace*, HARV. BUS. REV. (Sept.–Oct. 2020), <https://hbr.org/2020/09/how-to-promote-racial-equity-in-the-workplace> [<https://perma.cc/53RP-NQEK>]; Frank Dobbin & Alexandra Kalev, *Why Diversity Programs Fail*, HARV. BUS. REV. (July–Aug. 2016), <https://hbr.org/2016/07/why-diversity-programs-fail> [<https://perma.cc/WHS4-TVW6>].

<sup>12</sup> See *infra*, Sec. III.

dehumanize and control Africa-descended human beings.<sup>13</sup> After the police killing of Michael Brown in Ferguson, Missouri in 2014, a social movement scrutinizing racial disparities in police use-of-force emerged: the movement for Black lives known as Black Lives Matter. The May 25, 2020 death of George Floyd resulting from a Minneapolis police officer kneeling on Floyd's neck for nine minutes and twenty-nine seconds<sup>14</sup> (whilst three other officers stood observing without intervening)<sup>15</sup> and the March 13, 2020 death of Breonna Taylor who was shot and killed by police officers in Louisville, Kentucky when they entered her apartment<sup>16</sup> catalyzed a global protest movement that called for police reform and created a more mainstream platform for a police "abolitionist" movement.<sup>17</sup>

Like the U.S. legal system has roots in the English Common Law system, the concept and practice of U.S. policing has roots in English policing.<sup>18</sup> Those roots, however, are not a simple linear route across the Atlantic. The U.S. has its own "*peculiar institution*" of law enforcement that has a history stained by slavery.<sup>19</sup> Beginning as early as the mid-1600s, through implementing punishments for interracial reproduction between indentured white and Africans, and highlighted by events like Bacon's Rebellion in 1676, through policy and legislation, the American British colonies began a process that would strip indentured and enslaved Africans of

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<sup>13</sup> See Ben Brucato, *Policing Race and Racing Police: The Origin of US Police in Slave Patrols*, 47 SOC. JUST. 115, 133 (2021).

<sup>14</sup> Eric Levenson, *Former Officer Knelt on George Floyd for 9 minutes and 29 Seconds—Not the Infamous 8:46*, CNN (Mar. 30, 2021, 6:27 AM), <https://www.cnn.com/2021/03/29/us/george-floyd-timing-929-846/index.html> [https://perma.cc/E75D-WDTY].

<sup>15</sup> See Julia Jones & Christina Maxouris, *3 Former Minneapolis Police Officers Found Guilty of Violating George Floyd's Civil Rights*, CNN (Feb. 24, 2022, 8:51 PM), <https://www.cnn.com/2022/02/24/us/george-floyd-federal-civil-rights-trial-jury-thursday/index.html> [https://perma.cc/D4KN-NBSZ].

<sup>16</sup> See Richard A. Oppel Jr. et al., *What to Know About Breonna Taylor's Death*, N.Y. TIMES (Mar. 9, 2023), <https://www.nytimes.com/article/breonna-taylor-police.html>.

<sup>17</sup> See MARIAME KABA & ANDREA RITCHIE, *NO MORE POLICE: A CASE FOR ABOLITION* (2022); see also TRYON P. WOODS, *PANDEMIC POLICE POWER, PUBLIC HEALTH AND THE ABOLITION QUESTION* (2022).

<sup>18</sup> Connie Hassett-Walker, *How You Start Is How You Finish? The Slave Patrol and Jim Crow Origins of Policing*, ABA (Jan. 11, 2021), [https://www.americanbar.org/groups/crsj/publications/human\\_rights\\_magazine\\_home/civil-rights-reimagining-policing/how-you-start-is-how-you-finish/](https://www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/civil-rights-reimagining-policing/how-you-start-is-how-you-finish/) [https://perma.cc/YAV4-UGZC].

<sup>19</sup> Historian Kenneth M. Stampp coined the term "peculiar institution" in his 1956 monograph *The Peculiar Institution: Slavery in the Ante-Bellum South*, a study in the discipline, control, and exploitation of the U.S. slave system.

## A MULTIDISCIPLINARY APPROACH

personhood.<sup>20</sup> Slave patrols worked to prevent slave insurrections and “crimes” against white people perpetrated by enslaved Africans. After emancipation and the passage of the Thirteenth, Fourteenth, and Fifteenth Amendments, Black Codes were instituted to control and infringe upon Black citizens’ civil and human rights. The 1896 U.S. Supreme Court holding in *Plessy v. Ferguson* legalized Jim Crow laws in Southern states. Law enforcement officers would play central roles—both officially as sheriffs, highway patrol, and police officers and unofficially as bystanders and members—of white supremacist organizations.<sup>21</sup>

After a decade of the entire world watching police beating and turning German Shepherds on peaceful protesters and resistance to both de jure and de facto segregation, Congress passed the Civil Rights Act of 1964.<sup>22</sup> The nation erupted in violence that summer. Many protests and uprisings were instigated by police violence; some notables include the 1964 Harlem uprising in the aftermath of a police officer killing fifteen-year-old James Powell<sup>23</sup>; the 1965 police murder of twenty-six-year-old Jimmie Lee Jackson in Selma, Alabama and the subsequent police assaults on peaceful protesters on what became known as Bloody Sunday<sup>24</sup>; and the violent arrest of twenty-one-year-old Marquette Frye that catalyzed the Watts Uprising in 1965.<sup>25</sup> The Civil Rights Act of 1964 has yet to deliver reliable protection against racial discrimination and, in the context of policing and Black communities, that failure has had grave consequences.

Despite the global protest and demand for police accountability after the murder of George Floyd, the United States has failed to implement any federal legislation to protect Black communities from disparate police use-of-

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<sup>20</sup> DAVID R. ROEDIGER, *HOW RACE SURVIVED U.S. HISTORY: FROM SETTLEMENT AND SLAVERY TO THE OBAMA PHENOMENON* 5–6 (2008).

<sup>21</sup> See Walter F. White, *I Investigate Lynchings*, NAT’L HUMAN. CTR. (Jan. 1929), <https://nationalhumanitiescenter.org/pds/maai3/segregation/text2/investigatelynchings.pdf> [<https://perma.cc/M7K3-FDZ9>]. See generally Ida B. Wells-Barnett, *The Red Record: Tabulated Statistics and Alleged Causes of Lynching in the United States*, PROJECT GUTENBERG (Feb. 8, 2005), <https://www.gutenberg.org/files/14977/14977-h/14977-h.htm> [<https://perma.cc/62B9-G56P>] (historical accounts of white lynch mobs and racial violence).

<sup>22</sup> See generally Title IV of the Civil Rights Act of 1964, 42 U.S.C. §2000d et seq.

<sup>23</sup> *New York Race Riots*, C.R. DIGIT. LIBR., [https://crdl.usg.edu/events/ny\\_race\\_riots](https://crdl.usg.edu/events/ny_race_riots) [<https://perma.cc/LCB5-5HVY>] (last visited Sept. 22, 2023).

<sup>24</sup> *Bloody Sunday: Civil Rights Activists Brutally Attacked in Selma*, EJI, <https://calendar.eji.org/racial-injustice/mar/07> [<https://perma.cc/7MLM-958Y>] (last visited Sept. 20, 2023).

<sup>25</sup> *Watts Rebellion (Los Angeles)*, MARTIN LUTHER KING JR. RSCH. AND EDUC. INST., <https://kinginstitute.stanford.edu/encyclopedia/watts-rebellion-los-angeles> [<https://perma.cc/VF6F-JD2J>] (last visited Feb. 1, 2023).

force. The George Floyd Justice in Policing Act of 2021 never reached President Joe Biden's desk.<sup>26</sup> President Biden, however, signed an historic Executive Order on May 25, 2022, to promote accountability, raise standards, improve data transparency and oversight of new technologies, and reform the broader criminal justice system.<sup>27</sup> It is too soon to determine what measurable change has been fostered by this effort, particularly given the executive order only governs federal officers<sup>28</sup>—a group that has not been at the forefront of police discrimination cases.

### B. *Police Training*

The lack of federal mandates for state, local, and tribal police departments means that training is not uniform or consistent across departments. Moreover, the factors affecting policy decisionmaking within non-federal police departments is not always data and research-informed. This means that training and standards policies can vary widely. And yet, research on police training in the specific context of cultural competence and practices for reducing conflict and aggression between officers and Black civilians has been limited.

In Wesley G. Skogan, Maarten Van Craen, and Cari Hennessy's study on "Training Police for Procedural Justice," they found little data on "the short- or long-term effects associated with police training of any type."<sup>29</sup> Their study also found that the trainers reported that the module focused on "race and policing in historical context . . . proved to be the second hardest 'sell' in the curriculum, following only having to convince officers that 'legitimacy' should be one of their personal concerns."<sup>30</sup> The modules focusing on treating citizens fairly and citizens' rights to exercise their voices were well-received by officers.<sup>31</sup>

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<sup>26</sup> The George Floyd Justice in Policing Act of 2021 was passed by the United States House of Representatives on February 24, 2021, but Republican opposition within the Senate resulted in the bill failing in September 2021. *See* George Floyd Justice in Policing Act, H.R. 1280, 117th Cong. (2021).

<sup>27</sup> Joseph R. Biden Jr., *Executive Order on Advancing Effective, Accountable Policing and Criminal Justice Practices to Enhance Public Trust and Public Safety*, WHITE HOUSE (May 25, 2022), <https://www.whitehouse.gov/briefing-room/presidential-actions/2022/05/25/executive-order-on-advancing-effective-accountable-policing-and-criminal-justice-practices-to-enhance-public-trust-and-public-safety/> [https://perma.cc/8K78-WGLM].

<sup>28</sup> *Id.*

<sup>29</sup> Wesley G. Skogan et al., *Training Police for Procedural Justice*, 11 J. EXPERIMENTAL CRIMINOLOGY 320, 320 (2014).

<sup>30</sup> *Id.* at 322.

<sup>31</sup> *Id.*



## A MULTIDISCIPLINARY APPROACH

The Skogan, Van Craen, and Hennessy study provides useful insight for this project, because the results of the training bring to light the myth of colorblind justice; when the training became racialized, with select historical content presented, resentment and resistance occurred. Robert Livingston proposes that the resentful and defensive response Skogan's trainers received is a result of not first raising awareness that there is a problem. Livingstone developed a diversity, equity, and training model called PRESS, a sequential process for training: "(1) Problem awareness, (2) Root-cause analysis, (3) Empathy, or level of concern about the problem and the people it afflicts, (4) Strategies for addressing the problem, and (5) Sacrifice, or willingness to invest the time, energy, and resources necessary for strategy implementation."<sup>32</sup> Livingstone provides data to support the logic of his model, but he provides no empirical data to demonstrate successful outcomes from using his model.

The Authors' project's research design is aimed at mitigating the resistance and resentment racial context can produce. A hope is the virtual, fictional realm provided by the envisioned software training will reduce defensive attitudes.

### III. PROJECT DESIGN

#### A. *Informed by a Multidisciplinary Team*

Multidisciplinary problem solving is not a new idea in academia. There are certain disciplines and academic units that are frequently populated with scholars trained in various fields of study. Public health, geography, and public affairs colleges and departments, for example, hire faculty who hold doctorates in sociology, economics, statistics, history, psychology, and law. However, some academic and professional units, like chemistry, English, philosophy, engineering, and social work, rarely hire faculty who have not been awarded doctorates in fields other than the one the unit is named for, with the possible exception of faculty who hold dual appointments in two different departments.

Given this structure and practice in academia, an expansive, unexplored realm of possibility exists for multidisciplinary problem solving. For example, an opportunity for a collaboration among engineering, English, and law and dispute resolution academics—the types of academics who worked on the project described in this Article—to combat police violence,

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<sup>32</sup> Robert Livingston, *How to Promote Racial Equity in the Workplace*, HARV. BUS. REV., Sept.–Oct. 2020, <https://hbr.org/2020/09/how-to-promote-racial-equity-in-the-workplace> [<https://perma.cc/6CDV-QY96>].

and specifically race-based police violence, might not have readily developed in the not-so-distant past.<sup>33</sup> This project draws from disciplines like English and engineering that, until recently, were not traditionally associated with addressing policing practices and training.

In some ways, this project can be viewed as flowing from the modern-era Silicon Valley practice of hiring humanities scholars—not to develop code but to help with design and what a philosopher named Andrew Taggart describes as “problematizing the world.”<sup>34</sup> Similarly, the subfield of Humanitarian Engineering occupies a small but growing presence in engineering. One of the Authors, Kevin Passino, works at the forefront of that movement. The mission of the university’s Humanitarian Engineering program is described as follows:

Humanitarian Engineering at Ohio State aims to educate students on the application of science and engineering to address complex societal challenges with an emphasis on collaborating with communities to achieve their desired vision of well-being through a curriculum grounded in proven theories of sustainable development and applied engineering and socio-cultural learning experiences.<sup>35</sup>

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<sup>33</sup> The dispute resolution field in law, however, has embraced interdisciplinary approaches. See Carrie Menkel-Meadow, *From Legal Disputes to Conflict Resolution and Human Problem Solving: Legal Dispute Resolution in a Multidisciplinary Context*, 54 J. LEGAL EDUC. 7 (2004); Michal Alberstein, *The Jurisprudence of Mediation: Between Formalism, Feminism and Identity Conversations*, 11 CARDOZO J. CONFLICT RESOL. 1 (2009); Ross Hyams & Denise Sadique, *The Value of Incidental Learning in a Multidisciplinary Setting*, 20 INT’L J. CLINICAL LEGAL EDUC. 439 (2014); Donald R. Philbin, Jr., *The One Minute Manager Prepares for Mediation: A Multidisciplinary Approach to Negotiation Preparation*, 13 HARV. NEGOT. L. REV. 249 (2008); Roy J. Lewicki, *Teaching Negotiation and Dispute Resolution in Colleges of Business: The State of the Practice*, 13 NEGOT. J. 253 (1997).

<sup>34</sup> Michael J. Coren, *Silicon Valley Executives Are Hiring Philosophers to Teach Them to Question Everything*, QUARTZ (Apr. 18, 2017), <https://qz.com/956682/philosopher-andrew-taggart-is-helping-silicon-valley-executives-define-success/> [<https://perma.cc/23HD-L7ZX>].

<sup>35</sup> *Humanitarian Engineering*, THE OHIO STATE UNIV. COLL. OF ENG’G, <https://global.engineering.osu.edu/humanitarian-engineering-overview> [<https://perma.cc/89GP-LJ3Q>] (last visited Jan. 27, 2023) [hereinafter *Humanitarian Engineering*, OSU].

## A MULTIDISCIPLINARY APPROACH

Similar programs exist at universities like Oregon State University,<sup>36</sup> University of Texas at Austin<sup>37</sup>, Villanova University,<sup>38</sup> Colorado School of Mines,<sup>39</sup> and Purdue University<sup>40</sup> among increasingly more humanitarian-focused programs in the United States, the Netherlands,<sup>41</sup> England,<sup>42</sup> and Australia.<sup>43</sup> These programs tend to produce their multidisciplinary approach through the inclusion of social scientific inquiry and methodologies. The humanitarian engineering program at Ohio State is distinctive in its recent inclusion of the humanities, pushing “humanitarian” to have meaning even beyond collaborating with communities.<sup>44</sup>

This multidisciplinary project is informed by the humanities and engineering as much as it is informed by dispute resolution and negotiation theories. For example, take the foundational concept that understanding the interests behind someone’s stated positions is different than merely hearing what the other person *says* about what they want.<sup>45</sup> While it may not always be possible to identify someone’s underlying interests—that is, their motivations, their core desires, their needs at heart—simply understanding that the person who is talking may initially reveal only their position and not their

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<sup>36</sup> *Humanitarian Engineering*, OR. STATE UNIV., <https://engineering.oregonstate.edu/humanitarian-engineering> [https://perma.cc/6NQS-M6YB] (last visited Aug. 6, 2023).

<sup>37</sup> *Humanitarian Engineering*, UNIV. OF TEX. AT AUSTIN COCKRELL SCH. OF ENG’G, <https://cockrell.utexas.edu/academics/undergraduate-education/humanitarian-engineering-program> [https://perma.cc/C6BZ-J4ZA] (last visited Aug. 6, 2023).

<sup>38</sup> *Center for Humanitarian Engineering and Development*, VILL. UNIV. COLL. OF ENG’G, <https://www1.villanova.edu/university/engineering/faculty-research/humanitarian-engineering-international-development.html> [https://perma.cc/8FSV-5CZZ] (last visited Aug. 6, 2023).

<sup>39</sup> *Humanitarian Engineering*, COLO. SCH. OF MINES, <https://humanitarian.mines.edu> [https://perma.cc/KUU8-SVGA] (last visited Aug. 6, 2023).

<sup>40</sup> *Humanitarian Engineering*, PURDUE UNIV. SCH. OF ENG’G EDUC., <https://engineering.purdue.edu/ENE/Academics/Undergrad/MDE/PlansofStudy/humanitarian-engineering> [https://perma.cc/Z86P-PAHM] (last visited Aug. 6, 2023).

<sup>41</sup> *Humanitarian Engineering*, UNIV. OF TWENTE, <https://www.utwente.nl/en/humanitarian-engineering/> [https://perma.cc/W78A-29KP] (last visited Aug. 6, 2023).

<sup>42</sup> *What is Humanitarian Engineering*, WARWICK SCH. OF ENG’G, <https://warwick.ac.uk/fac/sci/eng/postgraduate/humanitarianengineering/about/descriptio n/> (last visited Aug. 6, 2023).

<sup>43</sup> *What is Humanitarian Engineering?*, UNIV. OF NEW SOUTH WALES-SYDNEY, <https://www.news.futurestudents.unsw.edu.au/what-humanitarian-engineering> [https://perma.cc/NZD4-5VQ4] (last visited Aug. 6, 2023).

<sup>44</sup> See *Humanitarian Engineering*, OSU, *supra* note 35.

<sup>45</sup> See ROGER FISHER, WILLIAM URY, & BRUCE PATTON, *GETTING TO YES* 42–57 (Bruce Parron ed., 3d ed. 2011).

interests can be helpful to inform communication strategies and approaches.<sup>46</sup> For instance, someone may report that a group of individuals is being disruptive and should be removed from their store in a majority-white suburb, but their underlying interest may be to preserve the patronage of and maintain a positive reputation among a certain group of clientele.

Relatedly, negotiation can benefit from an understanding of a distinction between perspective-taking and empathy skills, on one hand, and assertiveness skills, on the other. Mnookin, Peppet, and Tulumello describe perspective-taking as “trying to see the world through the other negotiator’s eyes.”<sup>47</sup> They describe empathizing in the negative—that is, as *not* meaning “agreeing with or even necessarily liking” the other person in the conversation.<sup>48</sup> Assertiveness, by contrast, is the “ability to express and advocate one’s own needs, interests, and perspectives.”<sup>49</sup>

Grounding for the Authors’ project can also be found in literature on client-centered negotiations. This literature counsels that clients and their stories should be viewed in their entirety, including their values and interests—rather than as the focus of a legal issue-spotting exercise—and that clients don’t always understand what they want.<sup>50</sup> The client-centered approach “urges lawyers to unlearn the professional habit of ‘issue-spotting’ their clients and to approach their clients as whole persons who are more than the sum of their legal interests.”<sup>51</sup> The lawyer is urged to clarify client values through active listening techniques.<sup>52</sup> This can be a tricky endeavor, however, since clients don’t always know what they want. A skilled lawyer, it has been suggested, “will neither substitute her judgment for that of her client, nor will she turn a blind eye to the very real possibility that her client is mistaken about what he really wants.”<sup>53</sup>

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<sup>46</sup> *Id.*

<sup>47</sup> MNOOKIN ET AL., *BEYOND WINNING: NEGOTIATING TO CREATE VALUE IN DEALS AND DISPUTES* 47 (2000). They encourage the use of a communication technique they call the “empathy loop.” *Id.* at 63.

<sup>48</sup> *Id.* at 47.

<sup>49</sup> *Id.*

<sup>50</sup> See Katherine R. Kruse, *Beyond Cardboard Clients in Legal Ethics*, 23 *GEO. J. LEGAL ETHICS* 103 (2010).

<sup>51</sup> See *id.* at 127.

<sup>52</sup> *Id.* at 133.

<sup>53</sup> Chris Guthrie & David Sally, *The Impact of the Impact Bias on Negotiation*, 87 *MARQ. L. REV.* 817, 828 (2004).

## A MULTIDISCIPLINARY APPROACH

Active listening and empathy skills have indeed been incorporated in law enforcement training.<sup>54</sup> For example, an FBI Law Enforcement Bulletin from 1997 discusses a path to “nonviolent problem-solving alternatives”:

When listened to by others, individuals . . . tend to become better problem solvers, growing less defensive and oppositional and more accepting of other points of view. Subjects who are met with an empathetic ear also become less fearful of being criticized and grow more inclined to adopt a realistic appraisal of their own position. . . . By applying active listening skills, negotiators demonstrate that they are not a threat to the subject and that their goal is to help . . . When negotiators demonstrate empathy and understanding, they build rapport, which, in turn, enables them to influence the subject’s actions by providing nonviolent problem-solving alternatives.<sup>55</sup>

The history of race and policing and of police training, together with dispute resolution and negotiation concepts and theories, helped shape the methodology and beginning stages of software development described in the next section.

### B. *Software Development*

With a problem-solving approach informed by interdisciplinary collaboration, the Authors aim to create training and simulation materials, including a software program, for use in local police training. The technology component may hold the potential benefit of producing significant useable data regarding the effects of training on policing—as there are very few studies on the effects of training—and informing police training design, particularly with respect to race and procedural justice.<sup>56</sup> The engineering team devoted to this project sought to develop software for simulated and officer-controllable learning scenarios. As an example, after conversations with the Columbus Division of Police, the team developed a representative training scenario preliminarily labeled “biased assess and detain.”<sup>57</sup>

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<sup>54</sup> See, e.g., Gary W. Noesner & Mike Webster, *Crisis Intervention: Using Active Listening Skills in Negotiations*, FED. BUREAU OF INVESTIGATION L. ENF’T BULL., Aug. 1997, at 13; BRIAN D. FITCH, LAW ENFORCEMENT INTERPERSONAL COMMUNICATION AND CONFLICT MANAGEMENT: THE IMPACT MODEL (2016).

<sup>55</sup> Noesner and Webster, *supra* note 54, at 15–19.

<sup>56</sup> Skogan et al., *supra* note 29, at 320.

<sup>57</sup> The engineering team also developed a “biased selection” scenario that could be applicable, for instance, to recruitment and hiring of a diverse force.

In this “biased assess and detain” scenario set in Bicentennial Park in Columbus, Ohio, there is a group of young Black people and a separate group of young white people both gathered in different parts of the park at the same time. There are approximately ten people in each of the two groups. Two police officers observe both groups from their car on an adjacent street. The officers assess if something should be done using their assessments of each group’s individuals (e.g., race/ethnicity and gender), evidence of illicit behavior (e.g., transactions, or indications there might be violence such as yelling and pushing), and context (e.g., what is expected behavior in a park, such as sitting around chatting or playing a sport).

The officers are considering whether to go talk with and question either group. Upon approaching any group, they will have engagement choices from neutral verbal through a scale of actions potentially leading to use-of-force and detention.

The officers’ sequential decision-making is modeled as two “classification problems with linear decision lines.”<sup>58</sup> In the first, the officers observe both groups, form suspicions, assess if these are sufficient to go question either group, then possibly approach a group for questioning. For these decisions, the suspicions and threshold for going to question a group can be biased.

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<sup>58</sup> See KEVIN M. PASSINO, HUMANITARIAN ENGINEERING: ADVANCING TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT 3–357 (3d ed. 2016) [hereinafter PASSINO, HUMANITARIAN ENGINEERING].

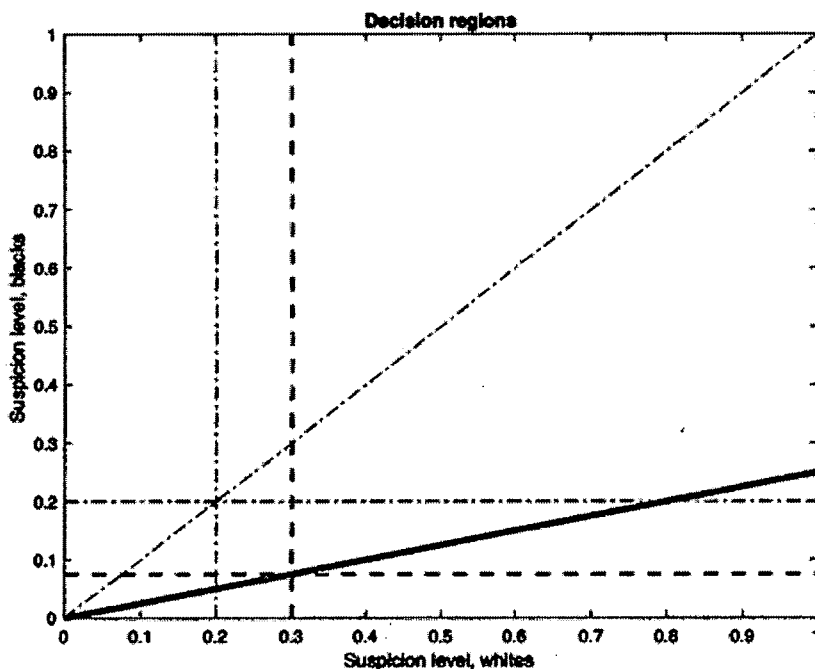


Figure 1: Investigate/no-investigate decision regions for two youth groups in a park (in Matlab, a language for computation).<sup>59</sup>

Consider Figure 1, above. The diagonal dash-dot black line represents when the officers weigh suspicions of each group equally, assuming they are seeing the same behaviors/activities. The horizontal black dash-dot line represents the threshold for when there is enough suspicious activity to justify going to question a group. Notice that this corresponds to the non-biased case as the vertical black dash-dot line is at the same value, so they will decide to approach either group once the same amount of suspicion is reached. The thick diagonal solid line represents the biased case, where the bias is against Black people; here, the officers can have less suspicion than for the white group but decide to go question the Black group. Also, notice that the suspicion threshold for deciding to approach the Black group (horizontal dashed line) is lower than

<sup>59</sup> The possible impact of bias on the development of this model of bias in decision-making is acknowledged and should be explored. This model was developed by author Passino and underlying coding and work is on file with his lab.

that of the white group (vertical dashed line). This means that the “decision region” for approaching the Black group is significantly larger than for the white group. This will lead to more frequent questioning of Black youth, even with low amounts of suspicion, and less frequent questioning of white youth, even with higher amounts of suspicion.

That scenario represents only a part of what would be presented to police in training in the course of using the software. In training, repeated scenarios would be presented, with officers making choices that will help them see the relationship between bias and the quality of the outcomes. To move the project forward to software use, a number of steps would be required, including:

- (i) Taking steps to understand the user population;
- (ii) Specifying the performance objectives needed to meet success—in other words, learning outcomes for officers;
- (iii) Constructing “front-end” (what the user sees on the screen) and “back-end” (the code underneath running algorithms or interfacing, like the Matlab code that implements Figure 1), including graphical user interface, coded scenarios, learning/gamification algorithms, and data gathering;
- (iv) pre-release software testing;
- (v) pilot software test with officers;
- (vi) full scale deployment; and
- (vii) monitoring and bug fixes.

The engineering team is focused on developing a web-based application as it will allow officers to use either a smart phone, tablet, or laptop to use the training software. To ensure ease of back-end algorithm development, the engineering team is using Matlab, which can implement the web-based app and front-end software. Data will be gathered by the software so officer learning can be quantified (in terms of keystrokes, time duration between strokes, swipes, etc.), assessed (compared to other officers, for example), and displayed to appropriate parties.

#### IV. FUTURE DIRECTIONS

This project has inspired other work. Following are a few ways in which the Authors hope to do work or have done work flowing from this project.



## A MULTIDISCIPLINARY APPROACH

*A funded project: "Improving Internal Police Negotiation and Communication Tools to Improve Police-Civilian Interaction."* This project, funded with a grant from the American Arbitration Association-International Centre for Dispute Resolution Foundation and led by authors Lee and Drake, seeks to improve police-civilian relations and reduce race-based overuse of force by addressing structural issues within law enforcement. The project proceeds from the notion that, before officers can produce desirable racial justice outcomes with civilians, internal communicative dynamics need remediation. It builds from the multidisciplinary project described in this Article and leverages OSU's Program on Dispute Resolution's expertise on dispute systems design, dispute resolution, race equity, and collaborative processes. The project plan consists of: designing and distributing a Qualtrics survey to employees at the Columbus Police Division, designing and conducting focus groups for current and retired employees from marginalized groups, conducting one-on-one interviews with current and retired employees from marginalized groups, interviewing the police chief's executive command team, and designing and piloting training and "train the trainer" modules based on information gathered from the survey, focus groups, and interviews. Through this work, the team hopes to help create a workplace where officers from marginalized groups feel comfortable and included and feel they could recruit new officers from marginalized groups to a safe workplace.

A hallmark of this approach is that, unlike reform interventions focused on civilian-police conflict resolution through public forums, it addresses the root of the problem rather than its symptoms. The underlying logic is: if there is internal conflict that silences and does emotional and/or mental harm to marginalized officers, then officers inflicting such harm on each other cannot be expected to be capable of participating in productive dialogue and effectively resolve disputes with civilians from marginalized groups. This reform-from-within approach works to shift perspectives on acceptable and civil handling of disputes and ideological differences among officers. The training will be designed to educate officers on cultural and social differences in order to mitigate workplace hostilities that negatively affect both officers and civilians from marginalized groups.

*Antiracist technology engineering course at The Ohio State University.* Author Passino teaches a course at OSU titled "Antiracist Technology" which integrates topics concerning racism, implicit bias, systemic racism, social justice, antiracism, engineering, and technology. The goal is to spark approaches to the development of antiracist technologies.<sup>60</sup>

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<sup>60</sup> Kevin Passino, *Antiracist Technology*, THE OHIO STATE UNIV. COLL. OF ENG'G, <https://ece.osu.edu/antiracist-technology> [<https://perma.cc/3JNH-UH52>] (last visited Jan. 27, 2023).

Combating implicit bias is a central goal of the work, as bias is a foundational concept in the development of the Bicentennial Park example and the decision-making strategy captured in Section III. Author Drake was an invited discussion leader for the class. She centered her discussion on the possibilities of racial sensitivity training software. Through course engagement, the Authors' project may lead directly or indirectly to the development of other antiracist technologies.

*Future study and exploration of antiracist technologies.* For those focused on developing antiracist technologies, the number of possibly fruitful future directions seems unlimited. They include the following:

First, more can be learned from developing additional scenarios where bias may enter the decision-making process, resulting in non-optimal or misguided decisions. For example, imagine a scenario targeted to unbiased selection of individuals for hiring in a police department.

Second, there is a need for a full exploration of modeling and testing of learning strategies that can reduce or eliminate bias in police training, inevitably implicating the way that humans learn/unlearn biases, and the effectiveness of approaches to learning such as reinforcement and supervised learning.<sup>61</sup>

Third, there is a need for an evaluation of implementation approaches, including examining a laptop-based app compared to a phone-based app that could be used by an officer on a phone in the field during "down time." The challenge here is not primarily software design, as "web-based apps" exist that can implement the police training on an officer's laptop or on an app on their phone. Rather, the challenge is to see if a laptop or a phone is used more effectively in police training to assess reduction of implicit biases, increase retention of what is learned, and improve overall decision-making quality. To do this assessment, in each case (laptop, phone, or both), there is a need to have a set of officers use the software, then test police performance for bias reduction, retention of information, and validity of officer decisions. The unpredictability of humans makes each of these tasks very difficult and statistical methods would have to be used to assess officer (and officer groups') learning performance.<sup>62</sup>

## V. CONCLUSION

This Article describes the beginning stages of an antiracist technology project. The Authors wish to continue this work and explore ways in which defensiveness reactions among police officers to bias and cultural competency

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<sup>61</sup> See generally PASSINO, HUMANITARIAN ENGINEERING, *supra* note 58.

<sup>62</sup> *Id.* at 275–398.

## **A MULTIDISCIPLINARY APPROACH**

training can be reduced through integration of technology. Through a multidisciplinary approach, by using technology to bear some of the burden of antiracist training for law enforcement officers, the researchers envision offering a much-needed neutral mode of instruction. Following further exploration and development, the goal would be for officers to have access to training technology that assists them in engaging with diverse civilian populations in a manner that considers their own potential bias and privilege, as well as in what ways their knowledge of cultural differences might be limited and have capacity to grow.

