Item # 59(3)

Proposed Amendments & Backups

ADDITIONAL MATERIAL
Regular Meeting
OCTOBER 6, 2020

SUBMITTED AT THE REQUEST OF

COMMISSIONER BARBARA SHARIEF

Dr. Barbara Sharief – Commissioner – District 8

Additional Material for Police and Criminal Justice Review Board – October 6, 2020 Meeting

Items attached:

1. Proposed ordinance amendments.
2. Yokum, et al., "A randomized control trial evaluating the effects of police body-worn cameras." Proceedings of the National Academy of Sciences of the United States of America, May 21, 2019. www.pnas.org/cgi/doi/10.1073/pnas.1814773116
3. Campaign Zero - 10 Steps.
4. Scrivener, E., "Controlling Police Use of Excessing Force: The Role of the Police Psychologist." National Institute of Justice Research in Brief, October 1994.
5. Mahbubani, R., "Officers already get training to deal with biases they may not know they have, but there's no evidence it actually works." Insider.com, June 16, 2020. www.insider.com/police-defensive-deescalation-techniques-implicit-bias-training-2020-6
6. Wood, et al., "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, May 5, 2020. www.pnas.org/cgi/doi/10.1073/pnas.1920671117
7. Fagan, J. and Campbell, A., "Race and Reasonableness in Police Killings." Boston University Law Review, May 18, 2020, Vol. 100, p. 951.

ORDINANCE NO. 2020-

AN ORDINANCE OF THE BOARD OF COUNTY COMMISSIONERS OF BROWARD COUNTY, FLORIDA, CREATING A POLICE AND CRIMINAL JUSTICE REVIEW BOARD; CREATING SECTION 18-7 OF THE BROWARD COUNTY CODE OF ORDINANCES ("CODE"); AND PROVIDING FOR SEVERABILITY, INCLUSION IN THE CODE, AND AN EFFECTIVE DATE.

(Sponsored by Mayor Dale V.C. Holness)

WHEREAS, on May 25, 2020, George Perry Floyd, Jr., was killed when a Minneapolis police officer knelt on his neck for approximately eight (8) minutes, despite Mr. Floyd repeatedly informing the officer–more than twenty (20) times–that he was unable to breathe;

WHEREAS, the death of George Floyd was witnessed by multiple onlookers who were prevented from intervening, and video of the tragedy was recorded by multiple persons including by police officers on their own body cameras;

WHEREAS, the injustice of George Floyd's death has sparked national and international outrage and fueled demand for better oversight of police use of force and misconduct;

WHEREAS, the authority of Broward County (the "County") to independently investigate specific incidents of police misconduct or use of force for disciplinary purposes is statutorily limited in some respects; however, nothing in State law prohibits the County from investigating general trends, practices, and patterns in policing, including with regard to the use of force; and

WHEREAS, the Board of County Commissioners of Broward County, Florida (the "Board"), finds that creation of an independent Police and Criminal Justice Review Board

to gather and publish information on trends, practices, and patterns in policing, including regarding the use of force, and to bring forward advice and insights to inform law enforcement policymaking, is appropriate at this time,

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF BROWARD COUNTY, FLORIDA:

Section 1. Section 18-7 of the Broward County Code of Ordinances is hereby created to read as follows:

[Underlining omitted]

Sec. 18-7. Broward County Police and Criminal Justice Review Board

(a) Definitions.

The following terms and phases, when used in this article, shall have the meaning ascribed to them in this section, except where the context clearly indicates a different meaning. Words used in the present tense shall include the future, and the singular number includes the plural, and the plural, the singular.

County Commission means the Board of County Commissioners of Broward County, Florida.

Police agencies means the Broward Sheriff's Office, including both law enforcement and correctional functions, and municipal police departments, however denominated, within the geographic boundaries of Broward County.

Review Board means the Broward County Police and Criminal Justice Review Board created by this section.

(b) *Creation of Police and Criminal Justice Review Board.* The County Commission hereby creates and establishes a Broward County Police and Criminal Justice Review Board.

(c) *Review Board membership.*

(1) Composition and selection.

~~a.~~ The Review Board shall ~~comprise~~ include ~~sixteen~~ nineteen (16~~9~~) voting members appointed by the County Commission after nomination in the following manner:

~~1.~~a. Nine (9) members nominated by County Commissioners, with each County Commissioner nominating one (1) member;

~~2.~~b. One (1) member nominated by the president of the Broward County Bar Association;

~~3.~~c. One (1) member nominated by the president of the Broward County Hispanic Bar Association;

~~4.~~d. One (1) member nominated by the president of the T.J. Reddick Bar Association;

~~5.~~e. One (1) member nominated by the Broward County Public Defender;

~~6.~~f. One (1) member nominated by the Broward County State Attorney;

~~7.~~g. One (1) member, who must be a member in good standing of The Florida Bar, nominated by the Broward County branch of the National Association for the Advancement of Colored People ("NAACP"); ~~and~~

~~8.~~h. One (1) member of the clergy nominated by a clergy organization or organization(s) representing a broad range of denominations and faith groups; ~~from a religious institution or house of worship whose membership is substantially comprised of individuals disproportionally impacted by improper police tactics and the criminal justice system, nominated by the Mayor of Broward County~~.

i. One (1) member, who must be a Florida-licensed mental health professional, nominated by the chief executive officer of the Broward Behavioral Health Coalition, Inc.;

j. One (1) member, who must be a sworn law enforcement officer of a municipal police agency, nominated by the Broward County Chiefs of Police Association; and

k. One (1) member nominated by the Sheriff of Broward County.

~~a. In addition, the following persons shall serve as *ex officio* nonvoting members and may participate in the Review Board's discussions:~~

~~1. The president of the Broward County Chiefs of Police Association, or a designee thereof; and~~

~~2. The Sheriff of Broward County, or a designee thereof.~~

(2) Qualifications. Voting members must be residents of Broward County. In selecting persons for nomination as voting members, County Commissioners shall consider, in addition to any other criteria they deem appropriate, the prospective nominee's personal experience with, or

professional or academic study of, criminal justice, police misconduct, use of force, or over-policing.

(3) Training. Each voting member shall attend training arranged by the County, which will include, at a minimum, an overview of policing and the criminal justice system in Broward County, one (1) ride-along with a local law enforcement agency, and training addressing racial inequity and implicit bias.

(4) Terms of appointment.

a. Review Board members shall serve in accordance with Section 1-233, Broward County Code of Ordinances ("Code"), except as otherwise provided in this section.

b. Members shall not be compensated for their service on the Review Board.

c. The term for each voting member shall be four (4) years from the date of appointment.

d. Upon the expiration of a term, a Review Board member shall continue to serve until a successor is appointed.

e. Any member may be removed from the Review Board pursuant to Sections 1-233 or 1-234 of the Code. Additionally, by majority vote of the County Commission, any member may be removed from the Review Board for misconduct, incompetence, neglect of duty, at the request of a County Commissioner, or upon recommendation of the Review Board.

f. Any member who no longer satisfies the requirements of the appointed position, including the residency requirement, shall automatically cease to be a member, and the position shall be declared vacant.

(d) *Review Board organization.*

(1) The meetings, quorum, and attendance requirements of the Review Board shall be as set forth in Section 1-233 of the Code, except as otherwise provided in this section.

(2) The Review Board shall elect a chair and such other officers as it deems necessary for purposes of managing its activities. Each officer shall serve for one (1) year or until their successor is chosen, whichever occurs later.

(3) The Review Board may establish procedural rules as needed to carry out its business in an orderly manner.

(4) The Review Board shall establish a meeting schedule, and shall meet no fewer than four (4) times per year.

(e) *Staff support.* The County Administrator or designee shall appoint a Review Board Administrator to serve as the Review Board's primary staff support, and to supervise such other staff as the County Administrator may provide. The Review Board Administrator shall report to the County Administrator or designee.

(f) *Functions.* The Review Board shall publish data compilations and reports and make recommendations regarding policy to the County Commission on the subjects of police use of force, police misconduct, and such other matters pertaining to bias in the criminal justice system as the Review Board determines appropriate and its resources permit. The Review Board Administrator and appropriate staff as designated by the

County Administrator shall be tasked with providing research, statistical, and other administrative support for the Review Board. The Review Board Administrator shall bear primary responsibility for gathering and analyzing data, drafting reports, and providing general administrative support for the Review Board. The Review Board shall be responsible for determining what policy recommendations, if any, to make to the County Commission, including based upon the data obtained and analyses conducted by the Review Board Administrator.

(1) The Review Board Administrator and staff shall compile data as requested by the Review Board. Such data shall include information contained in databases and reports from police agencies concerning police use of force and allegations of police misconduct, including but not limited to completed internal investigations. Such data may also include information regarding arrests from each police agency and data regarding bail and sentencing from Florida's 17th Judicial Circuit or other applicable sources, to the extent data is available. At the Review Board's direction, the Review Board Administrator may compile additional data relevant to the Review Board's objectives.

(2) The Review Board Administrator shall make publicly available, including by publication on the County website, statistical data compiled from the police agencies and other sources. At least once per month, such statistical data shall be sent to the police agencies.

(3) At least once per year, the Review Board shall publish a report summarizing the preceding year's data and analyzing any trends or patterns observed.

These reports may describe specific incidents for the purpose of illustrating systemic problems.

(4) The Review Board shall study and report on any specific topics within the fields of policing and criminal justice as the County Commission shall from time to time direct.

(g) *Objectives.* The objectives of the Review Board are to:

(1) ~~i~~Identify and report on systemic issues of policing, including but not limited to:

~~(1)~~ a. Patterns of police misconduct, use of force, misuse of position, over-policing, arrest rates, bail terms, or sentencing that may indicate disparities based on race or other factors; and

~~(2)~~ b. Repeated incidents of misconduct or improper use of force within the same police agency, agency subunit, or geographical area.

(2) Develop best practices and community standards for policing and criminal justice, including but not limited to de-escalation tactics and techniques, use of force, and the integration of mental health and crisis teams with law enforcement, that can be submitted to the County Commission as possible recommendations to police and criminal justice agencies.

The Review Board is not tasked with investigation of specific incidents of alleged police misconduct or misuse of force.

(h) *Complaints.* The Review Board and the Review Board Administrator may assist members of the public in determining how to make a complaint to a specific law enforcement agency and may request a copy of the response from the particular agency. Any complaint received by the Review Board pertaining to a law enforcement or

correctional officer shall be provided within five (5) business days after receipt to the employing agency of the officer pursuant to Section 112.533(1)(b), Florida Statutes.

(i) *Sunset*. Section 18-7 shall automatically sunset on December 31, 2025, unless reauthorized by the County Commission.

Section 2. Severability.

If any portion of this Ordinance is determined by any court to be invalid, the invalid portion will be stricken, and such striking will not affect the validity of the remainder of this Ordinance. If any court determines that this Ordinance, in whole or in part, cannot be legally applied to any individual, group, entity, property, or circumstance, such determination will not affect the applicability of this Ordinance to any other individual, group, entity, property, or circumstance.

Section 3. Inclusion in the Broward County Code of Ordinances.

It is the intention of the Board of County Commissioners that the provisions of this Ordinance become part of the Broward County Code of Ordinances as of the effective date. The sections of this Ordinance may be renumbered or relettered and the word "ordinance" may be changed to "section," "article," or such other appropriate word or phrase to the extent necessary in order to accomplish such intention.

Section 4. Effective Date.

This Ordinance is effective as of the date provided by law.

ENACTED

FILED WITH THE DEPARTMENT OF STATE

EFFECTIVE

Approved as to form and legal sufficiency:
Andrew J. Meyers, County Attorney

By */s/ Scott Andron* 08/27/2020
Scott Andron (date)
Assistant County Attorney

By */s/ Adam M. Katzman* 08/27/2020
Adam M. Katzman (date)
Senior Assistant County Attorney

SA/jc
Police and Criminal Justice Review Board
08/27/2020
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Coding: Words in ~~struck-through~~ type are deletions from existing text. Words in underscored type are additions.

A randomized control trial evaluating the effects of police body-worn cameras

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Edited by Susan A. Murphy, Harvard University, Cambridge, MA, and approved March 21, 2019 (received for review August 28, 2018)

Police body-worn cameras (BWCs) have been widely promoted as a technological mechanism to improve policing and the perceived legitimacy of police and legal institutions, yet evidence of their effectiveness is limited. To estimate the effects of BWCs, we conducted a randomized controlled trial involving 2,224 Metropolitan Police Department officers in Washington, DC. Here we show that BWCs have very small and statistically insignificant effects on police use of force and civilian complaints, as well as other policing activities and judicial outcomes. These results suggest we should recalibrate our expectations of BWCs' ability to induce large-scale behavioral changes in policing, particularly in contexts similar to Washington, DC.

body-worn cameras | field experiments | policing

Police body-worn camera (BWC) programs are rapidly spreading across the United States. In 2015, the US Department of Justice awarded over $23 million in funding to support the implementation of BWC programs throughout the country (1), and a nationwide survey found that 95% of large police departments either have already implemented or intend to implement a BWC program (2). Much of the expansion has been motivated by a series of high-profile, officer-involved shootings, many of which were captured in bystander video and shared across social media. Stakeholders such as the American Civil Liberties Union, Campaign Zero, and Black Lives Matter have urged the police to equip BWCs as a technological solution to improve policing, or at least to document police practices and civilian behavior to resolve disputes (3, 4).

The widespread support for BWCs is due, in large part, to their anticipated effects on behavior. Both officers and civilians on the street may comport themselves differently if under the watchful lens of a camera. A wide range of research, dating back to the classic experiments at Hawthorne Works (5), has suggested that people act differently when they believe they are being watched, from increasing work productivity and charitable giving (6–9) to encouraging honesty (10), promoting adherence to recycling rules (11), stimulating voter turnout (12), and reducing theft (13). Across these settings, monitoring appears to shift behavior into alignment with socially acceptable conduct.

In the policing context, cameras are expected to encourage officer adherence to departmental protocols and deter police from engaging in unprofessional behavior or misconduct, especially unjustified use of force (14). Similarly, civilians interacting with a BWC-equipped officer may be less likely to engage in inappropriate or combative behavior. The underlying social or psychological mechanisms linking BWCs and behavior could include greater self-awareness, heightened threat of being caught, or a combination of the two. Whatever the exact mechanisms, commentators sometimes allude to a so-called "civilizing effect," wherein BWCs are predicted to calm all parties involved and reduce the likelihood that violence occurs (15). By capturing the police–civilian interaction, the cameras are also expected to have evidentiary value, both for internal affairs and criminal investigations (15, 16).

The existing evidence on whether BWCs have the anticipated effects on policing outcomes remains relatively limited (17–19). Several observational studies have evaluated BWCs by comparing the behavior of officers before and after the introduction of BWCs into the police department (20, 21). Other studies compared officers who happened to wear BWCs to those without (15, 22, 23). The causal inferences drawn in those studies depend on strong assumptions about whether, after statistical adjustments are made, the treatment is independent of potential outcomes. In particular, we would need to believe that, after conditioning on a set of pretreatment covariates, BWCs were as if randomly assigned.

A small number of randomized controlled trials (RCTs) of BWCs have been conducted, with mixed results. In a series of RCTs conducted across several sites in the United Kingdom and the United States, BWCs appeared to increase police use of force at some sites and decrease it at others (24, 25). Cameras appeared to decrease complaints in some experiments but not others (16, 25). Further trials found no detectable treatment versus control differences on measured outcomes (26). The extant set of RCTs has typically been limited by either small sample sizes or shift-level random assignments that introduce the potential for within-officer spillover (14, 27).

Methods

We collaborated with the Metropolitan Police Department of the District of Columbia (MPD) to design and implement an RCT to evaluate the effects of BWCs citywide. Specifically, as part of MPD's deployment of BWCs to its police force, approximately half of all full duty patrol and station

Significance

Police departments are adopting body-worn cameras in hopes of improving civilian–police interactions. In a large-scale field experiment (2,224 officers of the Metropolitan Police Department in Washington, DC), we randomly assigned officers to receive cameras or not. We tracked subsequent police behavior for a minimum of 7 mo using administrative data. Our results indicate that cameras did not meaningfully affect police behavior on a range of outcomes, including complaints and use of force. We conclude that the effects of cameras are likely smaller than many have hoped.

Author contributions: D.Y., A.R., and A.C. designed research, performed research, analyzed data, and wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission.

Data deposition: The cleaned dataset sufficient for reproducing the difference-in-means estimates of the treatment effects have been deposited in the Open Science Framework, https://osf.io/p6vuh/.

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officers were randomly assigned to wear BWCs, while the other half remained without BWCs. With 2,224 MPD members participating in the trial, this study is the largest randomized evaluation of BWCs conducted to date. Our project was deemed "not human subjects research" by the Yale University IRB (protocol no. 2000020390), as all study activities were carried out by MPD.

The primary outcomes of interest were documented uses of force and civilian complaints, although we also measure a variety of additional policing activities and judicial outcomes. All outcomes were measured using administrative data. Before obtaining outcome data, we developed a detailed write-up of the methodology and planned statistical analyses (a preanalysis plan) and publicly shared it on the Open Science Framework. The preanalysis plan is included in *SI Appendix*.

Our study encompassed the entire department and included geographic coverage of the entire city. We identified eligible officers within each of the seven police districts (as well as several specialized units) based on the following criteria: The officer was on active, full duty administrative status and did not have a scheduled leave of absence during the study period, held a rank of sergeant or below, and was assigned to patrol duties in a patrol district or to a nonadministrative role at a police station. Eligible officers within each district or special unit were then randomly assigned to one of two groups: (*i*) no BWC (control) or (*ii*) with BWC (treatment). Specifically, treatment entails assignment of an eligible participant to wear and use a BWC in accordance with MPD policy. MPD General Order SPT-302.13 specifies that "[m]embers, including primary, secondary, and assisting members, shall start their BWC recordings as soon as a call is initiated via radio or communication from OUC [Office of Unified Communications] on their mobile data computer (MDC), or at the beginning of any self-initiated police action." The general order enumerates the range of events for which officers are required to activate their BWCs; this list is included in *SI Appendix*.

Randomization was implemented using a block-randomized assignment procedure. This approach, which uses pretreatment information to group officers into blocks before randomly assigning a fixed number of cameras to officers in each block, increases the statistical power of the experimental design and enforces treatment-versus-control balance on the covariates according to which blocking occurs. We applied a two-level blocking approach: The "major" blocks were the seven police districts and three special units, and the minor blocks were constructed using a clustering algorithm based on the background characteristics of the officers (28). Based on the eligibility requirements noted above, our sample consisted of 2,224 MPD members, with 1,035 members assigned to the control group and 1,189 members assigned to the treatment group.

As anticipated in our preanalysis plan, some officers who were assigned cameras did not install or use them, and some officers who were not assigned cameras nevertheless obtained them. We estimate two compliance measures: the number of videos uploaded to the video database by treatment officers and the average length of the videos in minutes, as compared with control officers. If officers complied with the randomization protocol, we would expect that officers assigned BWCs would make vastly more videos per year, as well as have a longer average length of videos, than their counterparts in the control group. On average, treatment officers uploaded about 665 videos annually (compared with 14 videos uploaded among control officers). The average video recorded by a treatment officer was over 11 min long, while the average video recorded by a control officer was just 0.8 min long. For both manipulation check measures, the treatment assignment is both substantively and statistically significant ($p < 0.001$). We conclude that compliance with the study protocol was high.

Following best practices in settings encountering two-sided noncompliance, we conducted all of our analyses according to the original random assignment (29). Our experiment thus recovers estimates of the effect of being assigned to a BWC on a variety of outcomes (the intention-to-treat effect).

Measurement Strategy. We assessed the effect of BWCs on four families of outcome measures: police use of force, civilian complaints, policing activity, and judicial outcomes.

i) Police use of force was based on officers' self-reported use of force (in accordance with MPD policy). It included a count of all use of force incidents as well as measures of serious uses of force (as defined by MPD policy), nonserious uses of force, and use of force incidents by the race of the subject of force.

ii) Civilians can file complaints in two ways: with MPD itself or with the independent Office of Police Complaints. Our measure was the total number of complaints associated with an officer from both sources. We also disaggregated the complaints by disposition: sustained, not sustained, or unresolved due to insufficient facts.

iii) The policing activity category included traffic tickets and warnings issued, reports taken from particular types of calls for service, arrests on specific charges (e.g., disorderly conduct, traffic violations, assaults against a police officer), and injuries sustained by officers in the line of duty. We used these measures to evaluate the effects of BWCs on officer discretion and activity, as well as on civilian behavior.

iv) Finally, we examined the effects of BWCs on judicial outcomes, measured by whether MPD arrest charges are prosecuted by the US Attorney's Office (USAO) or the Office of the Attorney General (OAG) and the disposition of those charges. Our examination of this set of outcomes was constrained by limitations in the available data. Namely, we did not have access to the full datasets managed by the USAO, OAG, and the courts. We instead had access to a subset of these data available to MPD, which captures only the initial charges on which an individual was arrested. A consequence is that we were unable to track court outcomes for any changes to those initial charges. As this limitation applies to both control and treatment groups, however, we were still able to conduct a preliminary analysis on the evidentiary value of BWCs.

Due to logistical constraints, MPD deployed cameras on a district-by-district basis over the course of 11 mo. Officers in two of the seven police districts received cameras in late June 2015, with the deployment to the remaining districts taking place from March to May 2016. By integrating randomization directly into the BWC deployment process, we were able to conduct this study at marginally low cost to MPD.

To address the staggered deployment process, the data collection period varies for each police district, based on the start date of BWC deployment in that district. All outcomes were obtained at the officer level and translated into yearly rates. These rates were calculated from the date that the cameras were first deployed in each district. We calculate these rates before and after the intervention based on a window of 212 d, because 212 is the number of days between deployment and the end of the study period for the district that was the last to receive cameras. The pretreatment and posttreatment periods are of the same length for all districts; the pretreatment measurements come from the same 212-d window (in the previous year) as the posttreatment measurements, to account for seasonality in policing and desensitization to the treatment over time.

Because all of our outcomes are unconditional event counts translated into yearly event rates per 1,000 offices, our measurement procedure avoids the posttreatment bias that would be associated with measuring various conditional quantities. For example, we might want to measure the fraction of an officer's civilian interactions that include use of force, but, since the officer–citizen interaction is posttreatment, we cannot condition on it without the risk of bias.

Estimation Strategy. We use two estimators of the average treatment effects: (*i*) difference-in-means with inverse probability weights to account for differential probabilities of assignment by block and (*ii*) regression of outcome on treatment assignment with controls for pretreatment characteristics and inverse probability weights. Specifically, we control for the pretreatment value of the outcome (e.g., past use of force), pretreatment covariates for the officer, and indicators for each major block. Eq. **1** provides the exact specification, as preregistered before the realization of outcomes.

$$Y_{POST} = \beta_0 + \beta_1 Z + \beta_2 Y_{PRE} + \beta_3 Block + \beta_4 X + \epsilon, \quad [1]$$

where Z is the treatment indicator (officer assigned camera or not); Y_{PRE} is the pretreatment value of the outcome under study; *Block* is a vector of indicator variables for an officer's home district or special unit; X is a vector of pretreatment covariates that includes race, gender, and length of service; and ϵ is the error term. We estimate Eq. **1** using weighted least squares regression with inverse probability weights, which are calculated as the inverse of the probability of each unit being in its observed condition (29). We use HC2 robust standard errors for variance estimation (30). We conduct our primary analysis among officers in the seven districts of DC (n = 1,922). We exclude officers in special units from this analysis, as policing activities and camera use patterns may differ between these units and the district officers. We conduct this analysis at the officer level, and report results as a yearly rate per 1,000 officers. Our analyses were conducted by two independent statistical teams, to help avoid coding errors and as a check of convergence in results.

Data Availablity. The cleaned dataset sufficient for reproducing the difference-in-means estimates of the treatment effects will be made

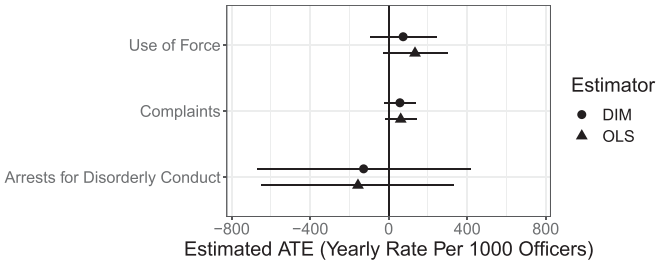

Fig. 1. Average difference (with 95% confidence interval) between BWC and non-BWC groups, per 1,000 officers over a year for police use of force, complaints filed against officers, and arrests for disorderly conduct. We show findings from both our difference-in-means (DIM) estimator and ordinary least-squares (OLS) regression including pretreatment covariates.

available at the Open Science Framework at https://osf.io/p6vuh/. We are unable to make public the raw data from which the cleaned dataset was produced, due to privacy concerns of both officers and civilians. We are also unable to release the officer-level covariate information that we use to estimate the covariate adjusted models, as these data would uniquely identify individual officers.

Results

Across each of the four outcome categories, our analyses consistently point to a null result: The average treatment effect estimate on all measured outcomes was very small, and no estimate rose to statistical significance at conventional levels. Because our study has a large enough sample size to detect small effect sizes, these failures to reject the null are unlikely to be due to insufficient statistical power. Fig. 1 plots the estimated average treatment effect (as a yearly rate per 1,000 officers) of BWCs on police use of force, civilian complaints, and officer discretion (as measured by arrests for disorderly conduct). Our best guess is that cameras caused an increase of 74 (SE = 87) uses of force per 1,000 officers, per year. This estimate is not statistically significantly different from zero. The effects on complaints (57 per 1,000 officers per year, SE = 41) and arrests for disorderly conduct (−128 per 1,000 officers per year, SE = 277) were also nonsignificant. Effect estimates on court appearances, judicial outcomes, domestic violence calls, and other measures of police behavior (all null) are included in *SI Appendix*.

Discussion

We consider here a few possible explanations for our null findings. First and most obviously, it is possible the null finding needs no explanation: The devices, in fact, have no effect on behavior. Perhaps neither the officer nor civilian involved in an interaction are actually aware of or affected by the camera, either due to attention being diverted elsewhere or desensitization over time to the presence of the cameras.

Second, Washington, DC may be different from other places in important ways. Perhaps BWCs have no effect in the nation's capital, but they do in other municipalities. We are sympathetic to this possibility, but we also note that, as BWCs were randomly assigned within each of the seven police districts, we conducted the equivalent of seven mini-experiments. Despite substantial district-to-district heterogeneity in baseline outcomes, we observe small, insignificant effects in all seven districts.

A third explanation for the null findings considers the possibility that other factors are masking the true effect of the BWCs: The cameras do affect the measured outcomes, but these effects are being hidden by interference across units, or spillovers from treated to control officers. Approximately one-third of calls were responded to by control officers only, one-third by treatment officers only, and the last third by a mix of treatment and control officers. This distribution of calls indicates that control officers were frequently performing their duties without cameras nearby. As a check of whether the introduction of cameras affected both treatment and control officers, we examined time trends for documented uses of force and civilian complaints before and after cameras were deployed (analysis presented in *SI Appendix*). We observed no differences in precamera versus postcamera outcomes for either group.

Finally, the true effect of BWCs may be masked by the widespread presence of nonpolice cameras (e.g., civilians' cell phones). Civilians regularly record encounters with MPD members with their own cameras, and closed caption television (CCTV) is widespread. Perhaps the BWCs do not change behavior at the margin, simply because there is no more room to have an effect. To explore this possibility (we note that this analysis was not preregistered), we examined the effect of treatment on use of force at night, when exposure to nonpolice cameras is lower. We also found no effect of cameras on this alternative dependent variable.

Other researchers have suggested that BWCs may fail to affect results because of nonadherence: Officers, for a variety of reasons, may not use their assigned cameras according to departmental policy (15, 22, 26). Officers may fail to activate the camera, for example. We have no indication that nonadherence was a widespread problem in our experiment. For 98% of the days in 2016, MPD averaged at least one video (and often many more) per call for service associated with a treatment officer. Further, even for the 2% of days in 2016 in which the number of videos uploaded was less than the number of incidents for which we would expect them, the difference is minimal, with 96% average adherence based on our measure. That said, effects may depend on the level of discretion officers are given to activate the cameras, although evaluation of that possibility will have to await further experiments.

We acknowledge that BWCs may have had effects that are not measurable with administrative data. For example, it may be the case that there were uses of force that were previously going unreported, and those have now dropped with the introduction of BWCs. However, because our data do not capture unreported uses of force, we are unable to detect this kind of change. As a matter of speculation, however, we find it implausible that we would measure very small effects on reported outcomes but that the true average effect on unreported outcomes is large.

In summary, we measured the average effects of BWCs on documented uses of force and civilian complaints as well as a variety of additional policing activities and judicial outcomes. Our sample size was unusually large, enhancing our ability to detect differences, should they exist. In addition, our comparison groups were constructed from an individual-level officer randomization scheme, which avoids several problems of inference present in other methodologies used to date. We are unable to detect any statistically significant effects. As such, our experiment suggests that we should recalibrate our expectations of BWCs as a technological solution to many policing difficulties.

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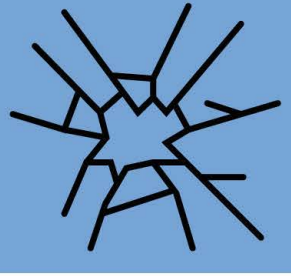

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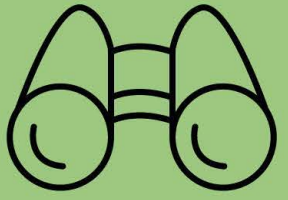
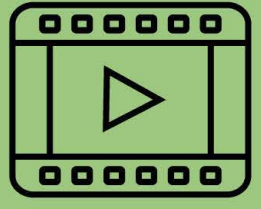


3 LIMIT USE OF FORCE

4 INDEPENDENTLY INVESTIGATE & PROSECUTE

5 COMMUNITY REPRESENTATION

6 BODY CAMS / FILM THE POLICE



7 TRAINING

8 END FOR-PROFIT POLICING

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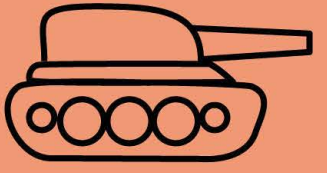

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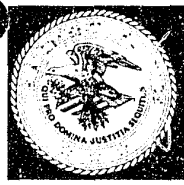

National Institute of Justice
Research in Brief

Jeremy Travis, Director

October 1994

Controlling Police Use of Excessive Force: The Role of the Police Psychologist

by Ellen M. Scrivner, Ph.D.

Police departments have used the services of psychologists for more than two decades. In the 1980's, police psychology began to be recognized as a distinct field, with psychologists' activities expanding beyond screening job applicants to include a broader range of psychological support services. These included counseling to help officers cope with the unique stresses inherent in police work, training in human relations and general stress management, debriefing after traumatic incidents, and such operational interventions as forensic hypnosis and assistance in negotiations with hostage holders or barricaded persons. Psychological support services for officers who used lethal force were more prevalent than interventions for managing nonlethal, excessive force.

Control of excessive force by police officers is a major challenge for the departments they work for, and it will be increasingly important to the success of community policing initiatives. In two of the most recent examples, excessive force triggered riots in Los Angeles and has been associated with charges of police corruption in New York City. In controlling the problem, the police psychologist can play a key role. This Research in Brief discusses that role and presents ways in which psychologists

Issues and Findings

Discussed in the Brief: The role of police psychologists in identifying officers at risk for excessive force and in preventing its use; the factors that contribute to use of excessive force.

Key issues: Police psychologists were surveyed to examine the types of services they provide and how those services are used to counter police use of excessive force. The psychologists were also asked to characterize the types of officers who abuse force and to suggest psychology-based intervention strategies that could help police managers reduce excessive force. Of particular interest is whether police departments should rely almost exclusively on preemployment screening to identify violence-prone candidates.

Key findings:

♦ Psychologists' services consist of counseling and evaluation more than training and monitoring of police behavior. Counseling is more likely to be a response to excessive force incidents than a preventive step.

♦ Not one but several distinct profiles were created on the basis of the psychologists' descriptions of officers at risk. The multiplicity of profiles belies the popular stereotype of a few "bad apples" being responsible for most excessive force incidents.

♦ For periodically evaluating incumbents, psychologists supported using methods other than routine psychological tests. They recommend increasing behavioral monitoring and providing better training.

♦ Excessive force needs to be considered a result not only of individual personality traits but also of organizational influences. It is symptomatic of a systemwide problem that implicates administrative policies as well as such human resource components as selection, training, and supervision.

♦ Current screening methods to evaluate police candidates are limited almost exclusively to psychological tests and preemployment clinical interviews.

New screening technologies could enable psychologists to examine such areas as a candidate's decisionmaking and problem-solving abilities and quality of interaction with others. These dimensions are important for resolving situations without using excessive force and are particularly relevant to hiring officers who will work in community policing.

Target audience: Police officials and administrators, police psychologists, private security firms' staff, researchers.

can identify officers at risk and create remedial interventions, both at the individual level and the department level, to prevent the use of excessive force.

This article summarizes one of the studies sponsored by the National Institute of Justice as part of a Justice Department effort to identify additional means to control police use of force.[1] The beating of Rodney King that precipitated the Los Angeles riots was the event that prompted the Justice Department initiative. On the basis of input from psychologists working in police departments in the Nation's largest cities, profiles of officers who abuse force were developed. The study also identified the functions of psychologists that had relevance to officers' mental health, specifically their use of excessive force, and presented their recommendations on how best to predict, remedy, and prevent excessive force.

The highly experienced police psychologists interviewed for the study had worked a long time either as salaried employees or as consultants to police departments. One out of four were on police command staffs, a measure of the extent to which police psychological services had become established in law enforcement agencies.

A shift in police department focus

Attention by researchers and psychologists to police use of nonlethal excessive force represented a change in emphasis. For the first two decades in which police departments employed psychologists (see box, "History of Police Psychological Services"), the use of lethal force was the prime concern. Shootings by police were traumatic incidents that created strong emotional reactions from the officers who did the shooting. The need to provide psychological support for these officers was clear. Departments gradually recognized the need to provide such services immediately following these incidents.

That same level of concern did not generally carry over to the use of nonlethal excessive force. Officers who used excessive force in making arrests or handling prisoners might be evaluated for their fitness for duty, but psychological support services were not widely available.

Over the past few years, however, greater attention has been given to the issue. Recent research has identified multiple determinants of the use of excessive force, raising questions about whether police departments should rely exclusively on preemployment screening to identify violence-prone candidates and predict future officer performance. In fact, two reports that followed the Rodney King beating—the 1991 report of the Independent Commission To Study the Los Angeles Police Department and the 1992 Los Angeles County Sheriff's Report by James G. Kolt and staff—questioned the effectiveness of existing psychological screening to predict propensity for violence.

Profiles of violence-prone officers

Psychologists interviewed in the NIJ survey were asked about the characteristics of officers who had been referred to them because of the use of excessive force. Their answers did not support the conventional view that a few "bad apples" are responsible for most excessive force complaints. Rather, their answers were used to construct five distinct profiles of different types of officers, only one of which resembled the "bad apple" characterization.

The data used to create the five profiles constitute human resource information that can be used to shape policy. Not only do the profiles offer an etiology of excessive force and provide insight into its complexity, but they also support the

History of Police Psychological Services

Psychologists began to work with police agencies in the late 1960's, following urban riots in several major cities. The 1968 National Advisory Commission On Civil Disorder Report called for screening methods that would improve the quality of the police officers hired. These recommendations, and the availability of discretionary funds through the Law Enforcement Assistance Administration, encouraged police departments to seek the expertise of psychologists to help them select emotionally stable candidates with personal characteristics suitable for police work.

Thus, one of the first police psychology functions involved preemployment screening of applicants, using psychological tests and assessments, a fairly traditional responsibility for psychologists but one that was new to police. Later, clinical services were requested and, by 1980, psychologists were not only screening applicants but also counseling officers on how to cope with the stress of policing.

Psychologists brought new sets of skills to police agencies in areas such as critical incident response for police shootings, hostage or barricade negotiation, criminal profiling, and forensic hypnosis. They also offered training in how to manage the personal stress unique to law enforcement.

The use of police psychologists' services continued to grow. By the latter part of the 1980's, according to one survey, a substantial proportion of police agencies were using these services. Psychologists were screening police recruits, counseling officers for job-related stress and personal and family problems, and conducting training in human relations.

Currently, although preemployment screening and counseling still command a major share of police psychologists' attention, several departments have adopted a broader role for psychologists, using their services for consultation on policy and planning.

notion that excessive force is not just a problem of individuals but may also reflect organizational deficiencies. These profiles are presented in the following sections in ascending order of frequency, along with possible interventions.

Officers with personality disorders that place them at chronic risk. These officers have pervasive and enduring personality traits (in contrast to characteristics acquired on the job) that are manifested in antisocial, narcissistic, paranoid, or abusive tendencies. These conditions interfere with judgment and interactions with others, particularly when officers perceive challenges or threats to their authority. Such officers generally lack empathy for others. The number who fit this profile is the smallest of all the high-risk groups.

These characteristics, which tend to persist through life but may be intensified by police work, may not be apparent at preemployment screening. Individuals who exhibit these personality patterns generally do not learn from experience or accept responsibility for their behavior, so they are at greater risk for repeated citizen complaints. As a consequence, they may appear to be the sole source of problems in police departments.

Officers whose previous job-related experience places them at risk. Traumatic situations such as justifiable police shootings put some officers at risk for abuse of force, but for reasons totally different from those of the first group. These officers are not unsocialized, egocentric, or violent. In fact, personality factors appear to have less to do with their vulnerability to excessive force than the emotional "baggage" they have accumulated from involvement in previous incidents. Typically, these officers verge on burnout and have become isolated from their squads. Because of their perceived need to conceal symptoms, some time elapses before their problems come to others' attention. When this happens, the event is often an excessive force situation in which the officer has lost control.

In contrast to the chronic at-risk group, officers in this group are amenable to critical-incident debriefing, but to be fully effective, the interventions need to be applied soon after involvement in the incident. Studies recommend training and psychological debriefings, with followup, to minimize the development of symptoms.

Officers who have problems at early stages in their police careers. The third group profiled consists of young and inexperienced officers, frequently seen as "hotdogs," "badge happy," "macho," or generally immature. In contrast to other inexperienced officers, individuals in this group are characterized as highly impressionable and impulsive, with low tolerance for frustration. They nonetheless bring positive attributes to their work and could outgrow these tendencies and learn with experience. Unfortunately, the positive qualities can deteriorate early in their careers if field training officers and first line supervisors do not work to provide them with a full range of responses to patrol encounters.

These inexperienced officers were described as needing strong supervision and highly structured field training, preferably under a field training officer with considerable street experience. Because they are strongly influenced by the police culture, such new recruits are more apt to change their behavior if their mentors show them how to maintain a professional demeanor in their dealings with citizens.

Officers who develop inappropriate patrol styles. Individuals who fit this profile combine a dominant command presence with a heavy-handed policing style; they are particularly sensitive to challenge and provocation. They use force to show they are in charge; as their beliefs about how police work is conducted become more rigid, this behavior becomes the norm.

In contrast to the chronic risk group, the behavior of officers in this group is acquired on the job and can be changed. The longer the patterns continue, however, the more difficult they are to change. As the officers become invested in police power and control, they see little reason to change. Officers in this group are often labeled "dinosaurs" in a changing police world marked by greater accountability to citizens and by adoption of the community policing model.

If these officers do not receive strong supervision and training early in their careers, or if they are detailed to a special unit with minimal supervision, their style may be reinforced. They may perceive that the organization sanctions their behavior. This group would be more responsive to peer program or situation-based interventions in contrast to traditional individual counseling. Making them part of the solution, rather than part of the problem, may be central to changing their behavior.

Officers with personal problems. The final risk profile was made up of officers who have experienced serious personal problems, such as separation, divorce, or even perceived loss of status, that destabilized their job functioning. In general, officers with personal problems do not use excessive force, but those who do may have elected police work for all the wrong reasons. In contrast to their peers, they seem to have a more tenuous sense of self-worth and higher levels of anxiety that are well masked. Some may have functioned reasonably well until changes occurred in their personal situation. These changes undermine confidence and make it more difficult to deal with fear, animosity, and emotionally charged patrol situations.

Before they resort to excessive force, these officers usually exhibit patrol behavior that is erratic and that signals the possibility they will lose control in a confrontation. This group, the most frequently seen by psychologists because of excessive-force problems, can be identified by supervisors who have been properly trained to observe and respond to precursors of problem behavior. Their

greater numbers should encourage departments to develop early warning systems to help supervisors detect "marker behaviors" signifying that problems are brewing. These officers benefit from individual counseling, but earlier referrals to psychologists can enhance the benefit and prevent their personal situations from spilling over into their jobs.

Steps in prevention

Because the profiles reveal different reasons for the use of excessive force, police departments need to develop a system of interventions targeted to different groups of officers and at different phases of their careers. The types of profiles also reveal that individual personality characteristics are only one aspect of excessive force and that risk for this behavior is intensified by other experiences. Some of those experiences implicate the organizational practices of the police departments in which the officers work. To the extent this is true, it indicates the need for remedial intervention at the department level as well as the individual level.

Preemployment screening. The first step in prevention logically entails not hiring officers who would present a problem. Such deselection is the aim of preemployment screening, a function in which the police psychologist has a role. Of the psychologists who perform preemployment screening, almost all rely on fairly traditional assessment tools—psychological tests and clinical interviews. By contrast, they make limited use of more innovative approaches.

There are sound reasons for using the traditional screening tools. They are valid and reliable measurements, and because they are standardized they can serve as the foundation for data bases useful for further analysis. But because the tools are used to prevent problem behaviors, including use of excessive force, screening has become psychopathology-driven. It is focused on identifying the characteristics of "bad" officers, and as a result, less is known about the characteristics of "good" officers or about how career experiences mitigate or reinforce these characteristics.

Although information about potential psychopathology is essential to making employment decisions for highly sensitive jobs, this focus has dictated the use of a single model, one that screens out. Reliance on this model makes innovation more difficult. The psychologists interviewed made limited use of other screening approaches—risk assessment models, situational testing, or job simulations—even though these approaches could incorporate a wider range of information for making decisions about the best candidates for police officers.

Innovation on the horizon. Opportunities for developing new screening techniques that may be better able to predict violence are arising for reasons that have nothing to do with excessive force. In particular, recent developments related to the Americans With Disabilities Act will change screening procedures. According to EEOC enforcement guidance issued in May 1994, some tests administered before a position is offered are now allowable only *after* a conditional job offer has been made. Tests that might detect mental impairment or disorder are included in this category.

As a result of the ADA-driven changes, "preoffer" testing could undergo substantial change, from which will emerge new screening technologies and analytic methods. These will be used to measure how prospective police officers are likely to interact with people under stressful conditions, make decisions, and solve problems consistent with community policing practices. Automated assessment systems, interactive video testing, assessment centers, job simulations, and role playing exercises all hold promise for meeting these goals.

Testing incumbent officers. The psychologists were divided on the use of psychological tests to routinely evaluate incumbent officers for a propensity toward violence. Overall, they supported alternatives to testing because the evidence is still not conclusive that all officers at risk for excessive force could be identified. Although significant strides have been made in methods to predict behavior, psychologists are mindful that human behavior is complex; they are cautious in claiming the accuracy of scientific prediction.

Thus, recommended alternatives to testing need to be considered. At the level of the individual, these alternatives should include increased attention to the availability of counseling and support for it.

Innovations in Excessive Force Training

Some of the psychologists interviewed in the study have developed training models that take into account how people function under adverse conditions and in highly charged situations. Components of these models include:

- Cultural sensitivity and diversity.
- Intervention by fellow officers to stop the use of excessive force.
- The interaction of human perception and threat assessment.
- Decisionmaking under highly charged conditions.
- Psychological methods of situation control.
- Patrol deescalation and defusing techniques that not only teach a tactical response but also respond to the fear stimulated by confrontations.
- Anger management programs that use self-assessment and self-management techniques for providing individual feedback to officers on how variable levels of legitimate anger influence judgment.
- Training in verbal control and communication, including conflict resolution.

At the level of the department, alternatives should include increased attention to management strategies to improve training, monitoring, and screening.

Training

Some of the training described by the psychologists interviewed represents innovative and promising trends. The models are based on principles of adult learning that require class participation, using such techniques as patrol simulations and role playing. They emphasize the development of nonphysical skills as well as physical ones in a community policing environment that assumes frequent interaction between citizens and police. (See box, "Innovations in Excessive Force Training.")

For a majority of the psychologists, the excessive force training they offered was in the context of stress management only. To be sure, stress management training is important; it would be difficult to argue that police work in general, and use-of-force confrontations in particular, are not stressful. However, framing excessive force as a stress issue raises several questions, among them whether the notion is supported by research and whether the approach encourages the perception that stress justifies the use of excessive force.

Stress management training in police departments has not been evaluated systematically, and this raises an additional concern. Beyond anecdotal evidence and limited research data, there is little to indicate how stress consistently affects general police performance. A more viable training focus would reflect departmental policy statements that clarify the tolerance limits for use of force and perceive excessive force as a patrol risk that needs to be managed through a range of specialized skills.

First line supervisors received less instruction on excessive force than did recruits. Yet the psychologists indicated that first line supervisors have greater influence on officers prone to excessive force than other police personnel. Police departments may need to shift the emphasis in supervisor training to one that incorporates larger behavioral issues in order to improve the management of excessive force. This level of supervisory training could also incorporate instruction on early warning behavioral monitoring.

Monitoring

Monitoring of officers' behavior to detect precursors of excessive force was the function used least often by psychologists. (See box, "What Police Psychologists Do.") Although a majority of the police departments represented in the study sample used some form of monitoring, 58 percent did not include the psychologists in these efforts. Computer tracking of complaints appeared to be the most prevalent form of early warning. However, while computer tracking may provide useful management information, it is not as helpful in changing behavior because the behavior is relatively well developed by the time it is flagged by the computer.

Monitoring of police behavior can serve other purposes in addition to early identification and intervention. It can involve a sustained level of contact between supervisor and officer to reinforce policy and training on excessive force. Because it involves supervisors, monitoring can provide valuable information to help police managers evaluate the effectiveness of their policies. Thus it can change the behavior of the organization overall in addition to that of the individual officer.

The evidence showing the current emphasis on referrals to counseling and on fitness evaluations provides further support for increasing the monitoring function. The need for earlier interventions, which monitoring would provide, parallels the metaphor of "broken windows," which in a community are signs of deterioration viewed as forerunners of more serious criminal problems. The metaphor could be applied to human behavior within the police organization. Police managers should pay attention to the signals of deterioration in officer behavior, the behavioral equivalent of "broken windows," *before* it results in excessive force complaints.

What Police Psychologists Do

The survey on which this study is based revealed that psychologists' functions in police agencies fell into the categories of evaluation (preemployment screening and fitness for duty), monitoring of police behavior, training, and counseling. The breakdown is as follows:

- 77 percent provided counseling services.
- 71 percent conducted preemployment screening.
- 54 percent conducted training classes.
- 52 percent conducted evaluations of fitness for duty.
- 42 percent monitored officers' behavior.

The psychologists were also asked what types of functions they directed specifically toward the use of excessive force. Counseling, noted above as the intervention used most often, was also used to respond to excessive force more frequently than were other functions:

- 79 percent counseled officers charged with excessive force.
- 51 percent covered excessive force in stress management training.
- 25 percent conducted training specific to excessive force.
- 23 percent monitored behavior for signs of excessive force.

Of particular significance is the limited amount of training specifically directed to excessive force and the low level of monitoring.

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Rethinking the role of police psychologists

The study findings indicate the lack of a coherent strategy to systematically integrate the functions performed by psychologists that are relevant to the use of excessive force. Police departments do not appear to use psychologists as a consistent resource; rather, they use them on an "as needed" basis and as protection against liability from charges of negligence. There should be a greater emphasis on involving the police psychologist in a proactive approach to managing human resources. Screening out potential violators, counseling problem officers, and evaluating them for fitness to perform their duties are critical activities, but there is a strong need for ongoing prevention activities that lead to early identification of problems and timely intervention.

Within this context, the prevalence of excessive force needs to be considered as symptomatic of a systemwide problem that implicates administrative policies as well as key elements of the human resource system: selection, training, and supervision. These services should be integrated into a structure that maximizes the impact on the individual officer and on the department overall.

Simply using a new screening test or trying a new training program will only continue the piecemeal approach. It will not achieve the balance needed in the structure between predicting excessive force and managing it. A more balanced approach encourages attending to the front end of the system (selection) while building in safeguards throughout (monitoring, training, and supervision).

Ellen M. Scrivner, Ph.D., was a Visiting Fellow at the National Institute of Justice. The second phase of her research, now under way, consists of case studies that demonstrate how police departments, working with psychologists, have established model programs to improve their capacity to respond to officers at risk for excessive force. The report of this study will be available through NIJ.

Note

[1]The full report of the research discussed in this Research in Brief, *The Role of Police Psychology in Controlling Excessive Force*, can be obtained from the National Criminal Justice Reference Service (NCJRS), Box 6000, Rockville, MD 20850 (800–851–3420). Ask for NCJ 146206.

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Officers already get training to deal with biases they may not know they have, but there's no evidence it actually works

Rhea Mahbubani
Jun 16, 2020, 12:04 PM

Seattle police officers hold batons as they form a line in front of the department's headquarters during a protest on June 3 calling for a 50% defunding of the department. Reuters

A common tactic for addressing racism at organizations is implicit-bias training, but studies have found that the program doesn't change people's behaviors.

Today's police departments were born out of slave patrols, so fear and otherness have long played a role in law enforcement.

Experts told Insider that police training wrongly prioritizes use-of-force techniques over de-escalation tactics and that police forces should recruit more widely and emphasize community relations.

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In his final moments, on May 25, a handcuffed George Floyd pleaded for breath and called out to his deceased mother while three Minneapolis policemen pinned him to the road, their knees digging into his neck and back.

This gut-wrenching visual was captured on camera and horrified millions of people, sending shockwaves around the globe that sparked an uprising for justice, a racial reckoning, and an intervention for police practices.

officers. The goal of the training is to get people to confront their underlying prejudices and change the way they do their jobs.

So if police officers were out on patrol and spotted someone acting suspiciously, the training would hopefully kick in and give them the "introspective capability" to reexamine their perceptions and

reactions, Jacinta Gau, associate professor of criminal justice at the University of Central Florida, told Insider. It's a technique that's been implemented in trainings in police departments and across corporate America.

The only problem? Evidence says it doesn't work.

Studies have found that implicit-bias training doesn't change people's behaviors

Gau said that while the effectiveness of existing implicit-bias training programs was still largely unknown, she's skeptical that a few hours of training is enough to "magically dissipate" biases that have developed over people's lifetimes.

changes in police behavior, because biases and stereotypes are so ingrained in people's minds that it is not realistic to think a single training would result in significant reductions in bias," Gau said.

A New York Police Department officer sprays protesters in Brooklyn on May 30.
REUTERS/Eduardo Munoz

"Even if there are positive impacts on officers' attitudes, that still does not automatically translate into changes in behavior," she added.

question."

Dave Bicking, the vice president of Communities United Against Police Brutality, believes implicit-bias training is a toothless strategy for reform. He's labeled it an "unscientific fraud."

"It's something that looks nice, something that makes it look like a police department is doing what it needs to do — and at the same time, it's not actually going to threaten any entrenched interests or cause any significant change in policing," Bicking told Insider.

Bicking said the training workshops served as a "propaganda function" that lets "police officers off the hook," because we all have implicit biases.

Police officers deploy tear gas at protestors at Orlando's City Hall on June 2. Joe Burbank/Orlando Sentinel/Tribune News Service via Getty Images

The CUAPB presented testimony to the US Commission on Civil

"Currently, research indicates that implicit bias training can be extremely effective in the short-term, however the issue is that it does not have lasting effects," the report said.

This was echoed by a 2017 meta-analysis of 492 studies that found that reducing implicit bias did not alter people's behavior. "Our findings suggest that changes in implicit measures are possible, but those changes do not necessarily translate into changes in explicit measures or behavior," the authors of the analysis wrote.

In 2016, the Harvard Business Review explored diversity programs and anti-bias trainings and concluded that "while people are easily taught to respond correctly to a questionnaire about bias, they soon forget the right answers."

"The positive effects of diversity training rarely last beyond a day or two," the report said, "and a number of studies suggest that it can activate bias or spark a backlash."

'There are 2 things that the police do really, really well in this country: They detain, and they use force'

Lorenzo Boyd, the director of the Center for Advanced Policing at the University of New Haven, said that implicit-bias training is not top of mind when officers respond to alleged threats because their reactions stem from warrior training.

"Police self-identify as warriors," he said. "The thinking is 'We've got to find the bad guy, we've got to fight evil,' as opposed to 'We're supposed to serve the community, and we're supposed to help people.'"

They've tasked themselves with prioritizing law enforcement, Boyd said, even though that's only one part of their jobs — alongside administrative tasks, providing services to the communities where they work, conducting investigations, and responding to emergency calls.

Officers at the Washington State Criminal Justice Training Commission training facility in Burien taking part in a class on the use of batons. Associated Press

The issue lies in police training. Defensive techniques — including firearms, deadly force, pursuit, hand-to-hand combat, Tasers, high-risk stops, and arrest and control — are emphasized over de-escalation techniques, Boyd said.

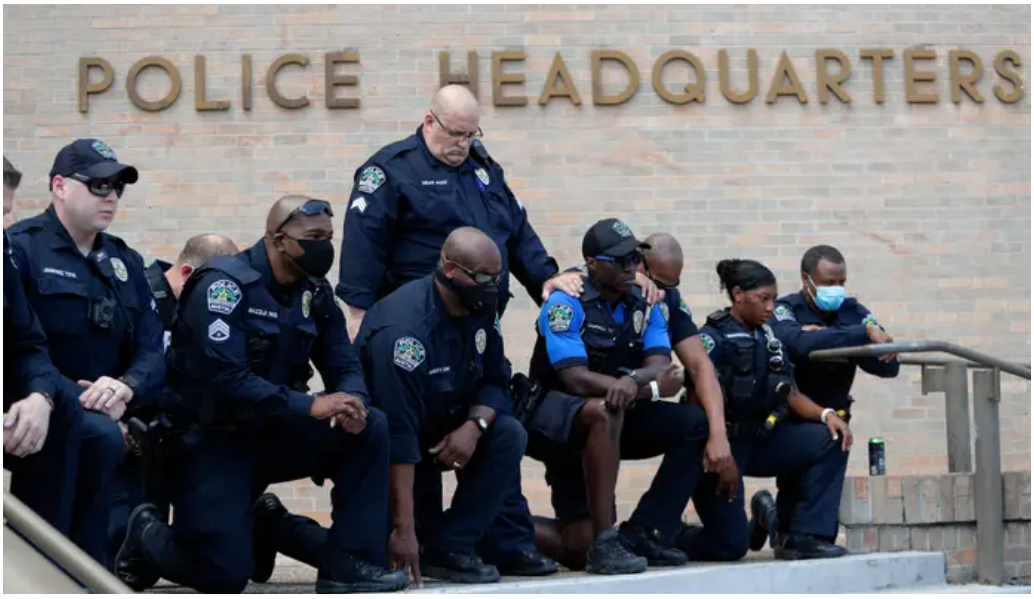
And 34 states don't even require in-service de-escalation training, according to Apex Officer, a company that provides virtual-reality training technology to law enforcement, military, and first responders.

That's why police officers "revert back to what's natural for them" in the face of potential danger, said Boyd, who worked for Massachusetts' Suffolk County Sheriff's Department for 14 years.

"When police are in a stressful situation and the adrenaline is going, they rely on muscle memory, they rely on what they train on the most," he added. "If you're spending 300 hours on police tactics and

Boyd likened the situation to learning how to cook a certain dish one time and then not hearing about it until a few months later when you're suddenly asked to cook it. Chances are, he said, you won't be able to recall the recipe.

"Every quarter, police receive in-service training on physical restraint and how to use a gun," he said. "So there are two things that the police do really, really well in this country: They detain, and they use force. Those are the things that they train on the most."



Police officers in Austin, Texas, kneel in solidarity with protesters on June 6. Eric Gay/AP

Gau said that "high-liability topics," such as use of force, can seriously harm suspects and "are obviously a very big deal." It's appropriate to expect proficiency in those areas because "we certainly want our

However, "the lack of attention to de-escalation, non-escalation, and verbal persuasion tactics leaves officers inadequately equipped to effectively diffuse a tense situation," she said. "They might not know or not know very well how to handle a suspect who is getting agitated and how to calm that person down and prevent a use-of-force situation from ever happening."

Police prejudice against Black people goes back hundreds of years

Boyd said that fear and otherness also play a large role in policing.

"We're training the police that citizens are potentially the enemy," Boyd said. "It's the 'us versus them' scenario. That's why police have moved away from their policing and guardian roles into their law-enforcement and warrior roles."

Bicking agreed.

"Warrior training is particularly corrosive because it teaches officers that everybody is a threat," he said. "Of course, if you look at everybody as a threat until you find out otherwise, you're more likely

people who you see as a threat."

A Black Lives Matter protest. Cooper Neill / Stringer / Getty Images

That narrative continues to play out in Minneapolis and its suburbs.

The New York Times found last week that nearly 60% of the city's police officers' use-of-force incidents targeted Black citizens, though they make up only 20% of the population.

Training may not be enough

In Gau's view, training is essential, but "we cannot train our way out

She suggested that police departments recruit from their local communities and make efforts to include people of color and minority communities in that group.

"Cadet programs can get teens involved in the department and start them on the path toward eventually becoming sworn officers," Gau said. "Establishing relationships with Black clergy can be a productive way for police to improve their image as well, and possibly reach out to Black youth."

She added: "Officers should seize every opportunity to engage with community members of color in a positive way, whether that means the agency formalizes a foot-patrol program or whether it means an officer decides to take a daily coffee break in a local café owned by a businessperson of color."

NYPD officers. TIMOTHY A. CLARY/AFP via Getty Images

Building relationships and trust and having meaningful conversations can help both the police and the public, she said.

Gau proposed that police agencies change their beat assignments to ensure that experienced officers are taking the most difficult assignments instead of handing them to rookies.

"It is common for new officers to be assigned to the most challenging neighborhoods (frequently on night shifts), which means the least-experienced officers are handling extremely delicate situations," she wrote in an email. "Agencies that use this assignment method should switch to a more methodical strategy that would result in experienced officers with demonstrated interpersonal skills working these areas."

Ultimately, Gau said, the way police are trained sends "a subtle message about priorities."

"It communicates to recruits what a police agency values and what their fellow officers are going to value," she said. "And what we want is an incentive structure that rewards officers for avoiding fights, not just for winning fights."

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could be damaging for the communities they're supposed to serve and protect.

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Procedural justice training reduces police use of force and complaints against officers

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Existing research shows that distrust of the police is widespread and consequential for public safety. However, there is a shortage of interventions that demonstrably reduce negative police interactions with the communities they serve. A training program in Chicago attempted to encourage 8,480 officers to adopt procedural justice policing strategies. These strategies emphasize respect, neutrality, and transparency in the exercise of authority, while providing opportunities for civilians to explain their side of events. We find that training reduced complaints against the police by 10.0% and reduced the use of force against civilians by 6.4% over 2 y. These findings affirm the feasibility of changing the command and control style of policing which has been associated with popular distrust and the use of force, through a broad training program built around the concept of procedurally just policing.

procedural justice | policing | misconduct | complaints | force

The August 9, 2014 police shooting of unarmed civilian Michael Brown in Ferguson, MO, gained national prominence by highlighting police use of excessive force. What was unusual about this event was not that it happened, since the level of police shootings has been more or less constant for years (1), but the scale of publicity it drew to the use of force in American policing. Such shootings are only the highly visible top of a spectrum of perceived police abuses of authority, beginning with asserting dominance via demeaning, disrespectful, and harassing treatment and escalating to involve the use of clubs, tasers, and, in some cases, guns. The justifiability of any particular instance of the use of force can be debated, but there have been a number of suggestions that the police in America today overuse command and control techniques, which emphasize dominance via the threat or use of force, and that better strategies for managing interactions with the public in ways which build public trust and deescalate hostility and conflict need to be identified and incorporated into American policing (2–6).

The case for developing new strategies for policing is articulated in President Obama's Task Force on 21st Century Policing report (7). This report argues that popular legitimacy should be the first pillar of contemporary policing. It has led to efforts to identify ways to implement this agenda by the International Association of Chiefs of Police (8) and by the US Department of Justice (9). This examination of the research literature suggests that a promising strategy for building popular legitimacy is procedural justice policing, a model of policing which emphasizes listening and responding to people in the community, explaining police policies and practices in interactions with civilians, and treating the public with dignity, courtesy, and respect (10). The procedural justice model is built around developing consensus and cooperation with the community. A variety of research of the police suggests that procedural justice policing can build popular legitimacy and heighten willing deference and cooperation (2, 11, 12).

As with any policing reform effort, a key issue is the feasibility of implementing this change in policing culture. In this case, the question is whether police officers can be trained to adopt a new style of policing and, if so trained, whether they will change their behavior in ways that diminish the number of interactions in which civilians experience what they feel is disrespectful treatment (13) or the unjustified use of force by the police. Translating from evidence-informed policies to the adoption of new policing strategies has long been a major challenge in American policing. One common tactic is officer retraining. Indeed, saying that a problem is being addressed by retraining is a common leadership response to crises. Unfortunately, such retraining efforts often go unevaluated (14), and it is unclear if an actual change in on-the-job officer behavior has occurred.

This study evaluates a major effort to implement officer retraining in procedurally just policing practices by the Chicago Police Department (CPD). The CPD created a 1-d Procedural Justice training program for their training academy and then assigned the vast majority of serving officers to participate in that training. The training program emphasized the importance of voice, neutrality, respect, and trustworthiness in policing actions. Officers were encouraged to provide opportunities for civilians to state and explain their case before making a decision, apply consistent and explicable rules-based decision-making, treat civilians with dignity and respect their status as community members, and demonstrate willingness to act in the interests of the community and with responsiveness to civilians' concerns.

Significance

Police misconduct and use of force have come under increasing scrutiny and public attention. The procedural justice model of policing, which emphasizes transparency, explaining policing actions, and responding to community concerns, has been identified as a strategy for decreasing the number of interactions in which civilians experience disrespectful treatment or the unjustified use of force. This paper evaluates whether a large-scale implementation of procedural justice training in the Chicago Police Department reduced complaints against police and the use of force against civilians. By showing that training reduced complaints and the use of force, this research indicates that officer retraining in procedural justice is a viable strategy for decreasing harmful policing practices and building popular legitimacy.

Author contributions: G.W., T.R.T., and A.V.P. designed research; G.W. performed research; G.W. analyzed data; and G.W., T.R.T., and A.V.P. wrote the paper.

The authors declare no competing interest.

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Data deposition: Data and code for reproducing the analyses presented in this paper are available on GitHub, https://github.com/george-wood/procedural_justice.

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The rollout of the training program created an opportunity to test the impact of training upon police behavior as reflected in complaints about the police and mandatory use of force reports. The procedural justice training syllabus highlights the importance of interpersonal aspects of policing interactions and provides officers with detailed templates for approaching civilians in ways that are respectful and minimize conflict, which should reduce the frequency of interactions in which civilians feel that they have been treated with discourtesy or disrespect. The training syllabus also emphasizes behavioral models that avoid force escalation and instead gain compliance through nonforceful approaches, reducing the likelihood that officers will rely on the use of force in civilian interactions.

The key question is whether police training can change police behavior. Several efforts to evaluate procedural justice training provide tentative evidence that it can. Skogan et al. (15) found that participation in the Chicago training program studied here increased police officers' expressed support for using procedural justice strategies in the community. Rosenbaum and Lawrence (16) found that procedural justice training changed cadet behavior during scenarios involving interactions with people in the community. Antrobus et al. (17) found similar positive effects of procedural justice training on officer attitudes and on-the-job behavior in a sample of Australian police officers. And Owens et al. (18) found that procedural justice training led to lower levels of use of force against people in the community among a group of Seattle police officers.

While each of these studies supports the value of procedural justice training, they have important limits. Only two consider behavior in the community, and both of these use small samples (16, 18). Further, Owens et al. (18) focus upon one-on-one training by a supervisor for officers engaging in civilian encounters in small geographic areas, or "hot spots," with high crime rates. None of these studies speaks to the key policy question: Can a police department change the nature of officer behavior across a large number of officers using a training program that can realistically be implemented? In the current study, the intervention was possible because officers were only taken out of the community for one training day. Without a viable training model, the call for strategies that involve building popular legitimacy must look at other avenues besides training to change police behavior. At this time, there is not strong evidence that training can influence general police behavior in the field.

Results

We evaluated the rollout of procedural justice training in the CPD to conduct a broad assessment of changes in officer field behavior. Beginning in January 2012 and continuing through March 2016, the CPD assigned 8,480 officers to a 1-d training session on procedurally just policing strategies. A further 138 officers were trained after March 2016, when the evaluation period ended. In the training session, officers were introduced to the various ideas associated with procedural justice and its implementation in their everyday work. See *SI Appendix* for the training syllabus and an overview of the training implementation.

The rollout of training constitutes a staggered adoption design where, instead of units being assigned to a treatment arm and a control arm at a fixed point in time, all officers are assigned to training, but the date on which training is undertaken varies. Once trained, officers remain in the trained condition thereafter. Fig. 1 shows the staggered adoption of training. Following a pilot training session in month 13, the rollout occurred in two phases, from months 18 to 34 and 41 to 63. *SI Appendix* contains further details on the staggered adoption of training and a graphical summary of the training rollout. To evaluate the effects of training on officer behavior, we combined information about when officers participated in training with records of complaints regarding officer conduct, settlement payouts following civil litigation, and mandatory officer-filed use of force reports.

To estimate the effect of training on these outcomes, we clustered officers according to the date on which they participated in procedural justice training. For the 8,618 officers nested in the $N = 327$ training clusters, we obtained data on all complaints received and all mandatory use of force reports filed in each of the $T = 63$ mo from January 2011 to March 2016. We obtained data on whether complaints were sustained or resulted in a settlement payout for the $T = 58$ mo from January 2011 to October

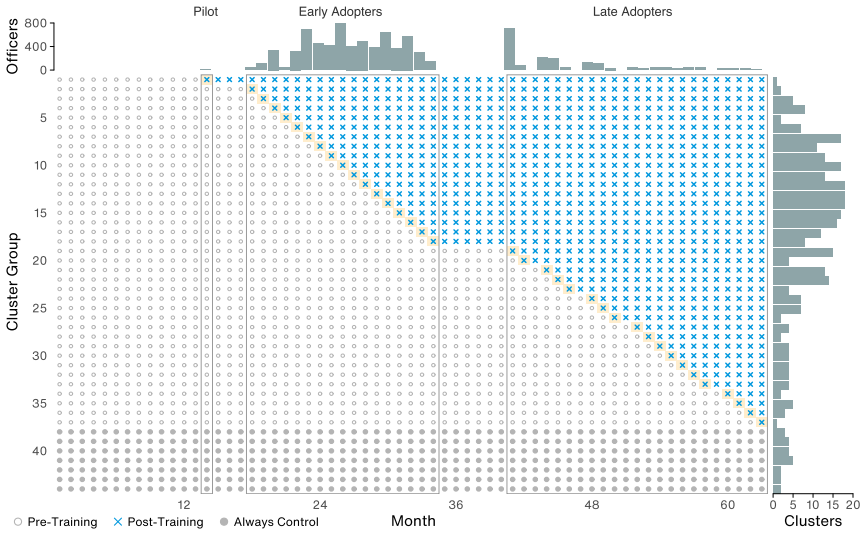

Fig. 1. The staggered adoption of procedural justice training in the CPD; 8,480 officers were trained in 305 clusters across 49 mo. Once trained, clusters shift from the pretraining to posttraining condition. The rollout consisted of an initial pilot training program in month 14, followed by a first training phase from months 18 to 34, a 6-mo period in which no training occurred, and a second training phase from months 41 to 63. The study period ends at month 63, the last month for which outcome data are available, such that the 22 clusters trained after month 63 remain in the control condition throughout. The frequency of officers trained per month is shown in the top margin. In this visualization, we grouped clusters by the month in which they were trained. The frequency of clusters per training month is shown in the right margin.

2015. In the resulting time series cross-sectional data, Y_{it}, we consider inference on the training effect as a problem of counterfactual estimation in which we seek to ascertain what the posttraining observations would have been under the counterfactual scenario in which the cluster had not been trained. By leveraging variation in the timing of training due to the staggered adoption, we draw on the full observed data to establish the counterfactual: Within each cluster, the pretraining observations inform the posttraining counterfactual estimates; within each month, clusters in the pretraining condition act as controls for clusters in the posttraining condition. For complaints and use of force, the 22 clusters containing 138 officers trained after March 2016 remain in the control condition throughout the evaluation (Fig. 1). For sustained and settled complaints, 33 clusters containing 244 officers trained after October 2015 remain in the always-control condition. If training reduced police misconduct and use of force, then we would expect the observed frequency $Y_{it}(1)$ of complaints, sustained or settled complaints, and force reports for trained clusters to be lower in the posttraining periods than the counterfactual estimates $Y_{it}(0)$.

We estimate the training effects using an interactive fixed effects (IFE) model (19). We present estimates of the average treatment effect on the treated (ATT) per 100 officers per month as well as the cumulative ATT, which represents the total change in complaints, sustained or settled complaints, or use of force in the 24 mo following training. Details on the IFE model are provided in *Materials and Methods*.

The results of our evaluation indicate that procedural justice training was successful in reducing police misconduct as measured by the frequency of complaints filed against officers. Table 1 reports that training reduced the frequency of complaints received by −11.6 (95% CI: −15.60, −7.45; SE = 2.09; $P < 0.001$) per 100 officers in the 24 mo following training. A total of 6,577 complaints were filed against trained officers in the 24 mo after training. We estimate that 7,309 complaints would have been filed without training, a 10.0% reduction equivalent to approximately 732 fewer complaints. During the posttraining period, the CPD received 3.49 complaints per 100 officers per month compared to 4.03 that would have been received in the absence of training. Fig. 2 shows that the observed count and counterfactual count of complaints closely match in the pretraining period before diverging after training is introduced, indicating a valid counterfactual basis for estimating the training effect.

A key indicator that procedural justice training reduced misconduct is that it reduced the number of complaints that trained officers received. However, it is important to recognize that complaints reflect civilian assessments regarding the inappropriateness of police behavior. These assessments may or may not align with legally or procedurally inappropriate police behavior. Fortunately, we also have records on whether a complaint was sustained or resulted in a settlement payout (20). In Chicago, complaints are investigated by either the Independent Police Review Authority or the CPD's Bureau of Internal Affairs, which recommend whether complaints should be sustained, before a final decision is issued following CPD review. Similarly, prior to settling a case and paying damages, there is an independent evaluation of the merit of a complaint. Although there are obstacles to pursuing a settlement and racial disparities in the dispositional outcomes of complaints (21), and the investigation of complaints is often forestalled by the absence of a signed affidavit, sustained or settled complaints reflect police behavior that has been demonstrated to violate legally or procedurally justified conduct.

We estimate that training reduced the frequency of sustained or settled complaints by −1.67 (95% CI: −2.81, −0.40; SE = 0.61; $P = 0.008$) per 100 officers in the 24 mo following training. Among posttraining officers, 573 complaints were sustained or resulted in a settlement related to misconduct, with settlement payouts totaling $22.9 million. Without training, we estimate there would have been an additional 105 sustained or settled complaints, a reduction of 0.07 per 100 officers per month. This corresponds to a 15.5% reduction from 0.39 to 0.32 sustained or settled complaints per 100 officers per month.

The procedural justice training program was also effective in reducing the frequency with which officers resorted to using force in civilian interactions. Table 1 reports that training reduced mandatory use of force reports by −7.45 (95% CI: −12.40, −3.37; SE = 2.33; $P = 0.002$) per 100 officers in the 24 mo after training. During this 2-y period, officers reported using force in 7,116 incidents ranging in severity from a takedown to a firearm discharge (*SI Appendix*). We estimate that, in the absence of training, there would have been 486 additional uses of force totaling 7,602. This 6.4% reduction in force corresponds to a rate of 3.77 per 100 officers per month in the posttraining period, down 0.40 from the 4.17 expected under the counterfactual of no training. Fig. 2 shows a similar average observed and counterfactual use of force in the pretraining period, again diverging only after training was introduced. In *SI Appendix*, we report that procedural justice training reduced use of force actions with weapons, but did not cause a decline in either force mitigation efforts or control tactics, indicating that procedural justice training may have deterred officers from the escalation of force.

To test whether the estimated effect of training may be affected by time-varying confounding, we carried out placebo tests in which we artificially introduced training 3 mo before each cluster was, in fact, trained (22). We then estimated the placebo training effect in the 3 mo prior to training. As the clusters had not yet undergone training, there should be no evidence for a training effect in this 3-mo placebo period. If there is evidence for a placebo effect, the estimated counterfactual may not be an adequate comparison for the observed outcomes after training. Fig. 3 shows that the complaints, sustained or settled complaints, and use of force models pass the placebo test, indicating that the estimated counterfactual provides a valid basis for identifying the training effect. The P values for the placebo ATT in the 3 mo before training was, in fact, introduced are $P = 0.254$, $P = 0.818$, and $P = 0.115$ for complaints, sustained or settled complaints, and force, respectively. We also find no evidence for a placebo effect in the period 5 mo before the true onset of training.

Lastly, Fig. 4 shows that the effect of procedural justice training was durable, reducing complaints and use of force

Table 1. Average effect of training on complaints received, sustained or settled complaints, and mandatory reports of use of force

	Complaints	Sustained	Force
Cumulative ATT	−11.60	−1.67	−7.45
SE	2.09	0.61	2.33
95% CI	−15.60, −7.45	−2.81, −0.40	−12.40, −3.37
P	<0.001	0.008	0.002
Cluster fixed effects	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes
Officers	8,618	8,618	8,618
Months	63	58	63
Clusters	328	328	328
Treated clusters	306	295	306
Always-control clusters	22	33	22
Observations	20,664	19,204	20,664

The cumulative ATT represents the average reduction after 24 mo per 100 trained officers. The 95% CIs are computed using 2,000 block bootstrap runs at the cluster level.

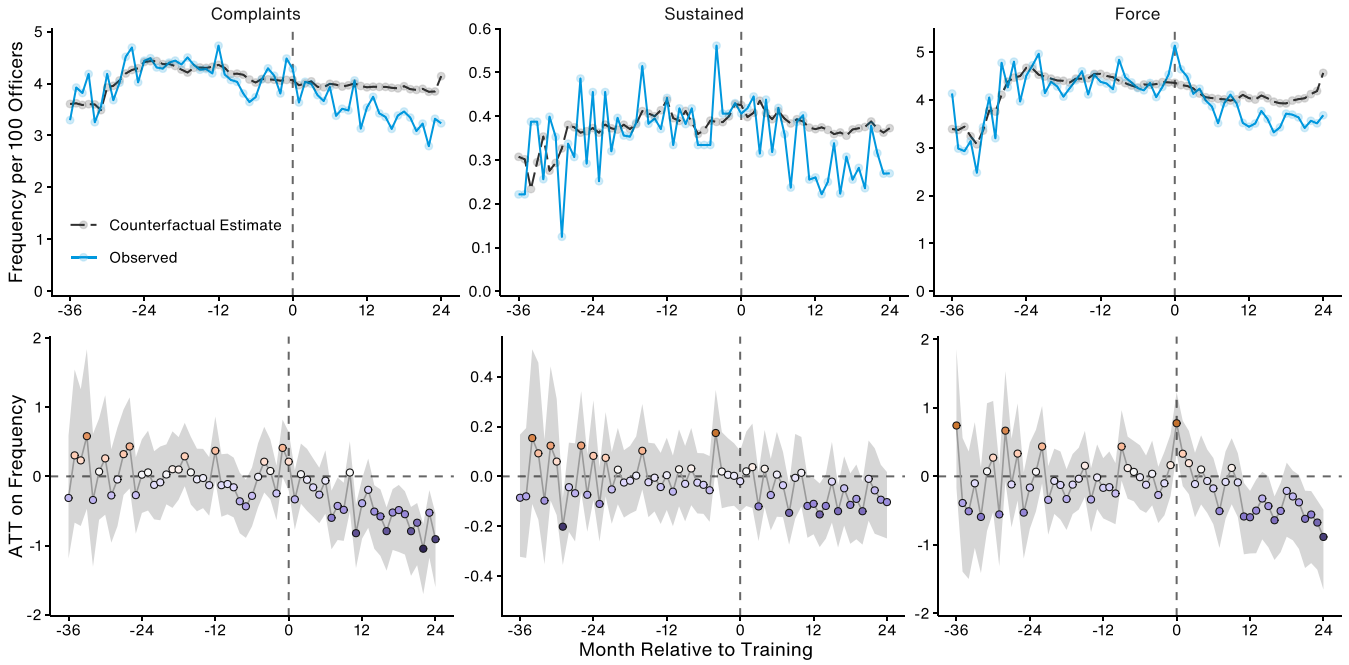

Fig. 2. (*Top*) Observed and counterfactual estimates of complaints, sustained or settled complaints, and use of force per 100 officers per month. Months are recalibrated to be relative to the onset of training. (*Bottom*) The ATT for each month is the estimated counterfactual frequency subtracted from the observed frequency in that month. Monthly ATT estimates are colored according to their value relative to zero. The 95% CIs are computed using 2,000 block bootstrap runs at the cluster level.

throughout the 24 mo following training. The cumulative ATT is monotonically decreasing for all three outcomes in the model including all trained and control clusters. The durability of the effect on complaints and use of force indicates that procedural justice can elicit a behavioral shift beyond the days and weeks following training.

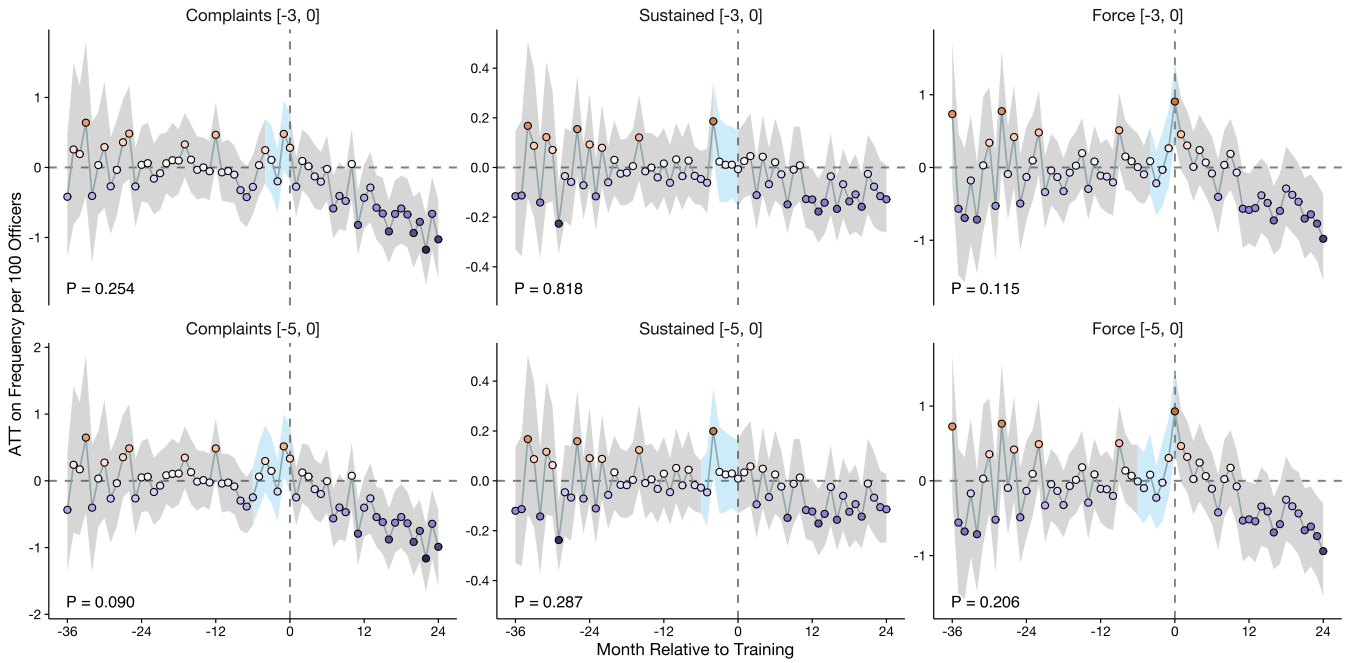

Fig. 3. Placebo tests for the effect of training on complaints, sustained or settled complaints, and use of force. In the placebo tests, the training is artificially introduced before the observed onset of training. The placebo ATT is estimated for the period between the artificial onset and the true onset, denoted by the blue region. The *P* value for the placebo ATT is shown. (*Top*) Training is artificially introduced 3 mo before the true onset, and the placebo ATT is calculated for the period −3 mo to 0 mo. (*Bottom*) Training is artificially introduced 5 mo before the true onset, and the ATT is calculated for the period −5 mo to 0 mo. For all outcomes, we find no evidence for an effect of training in the placebo period, and the models pass the placebo test. The 95% CIs and *P* values are computed using 2,000 block bootstraps at the cluster level. The uncertainty for the placebo ATT is larger than the ATT in the full data because the placebo tests are informed by fewer observations in the pretraining condition.

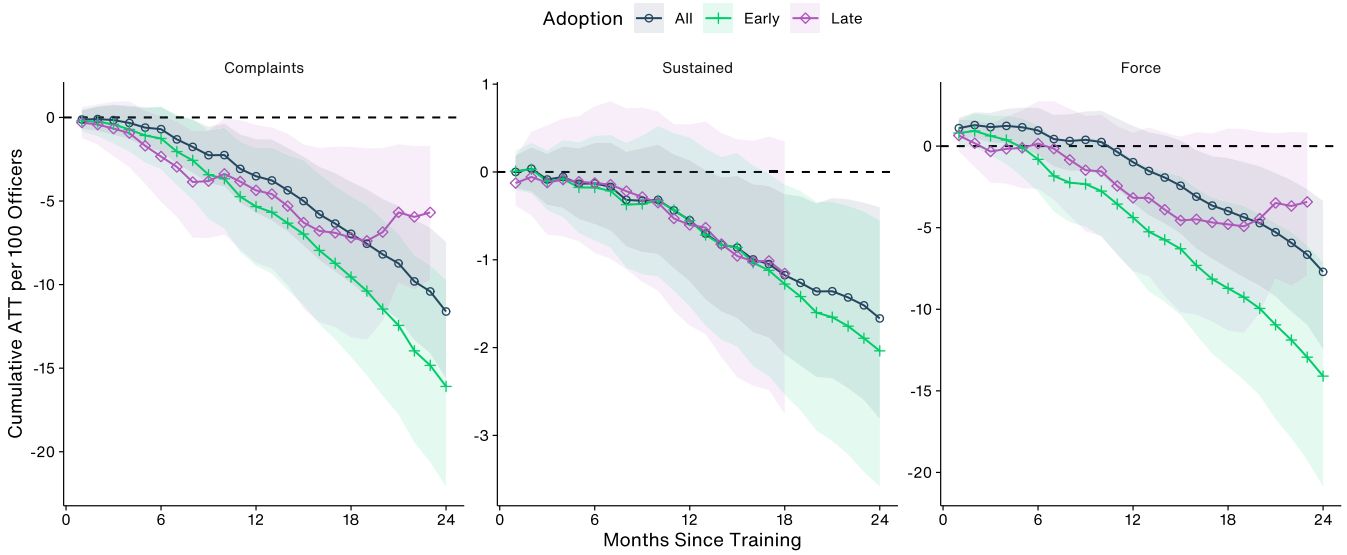

Fig. 4. Cumulative ATT per 100 officers in the 24 mo after training by adoption time. The cumulative ATT represents the total reduction in each outcome in the months since the onset of training. Early adopters are those officers trained in the first training phase, encompassing the first 17 mo of the rollout. Late adopters were trained in the second phase from months 41 to 63. The study period ends in month 63 for complaints and use of force and month 58 for sustained and settled complaints. Consequently, the cumulative ATT for late adopters extends for a maximum of 23 mo after training for complaints and use of force and 18 mo for sustained and settled complaints.

However, Fig. 2 shows that the ATT on complaints and use of force is heterogenous over time, with the average effect per 100 officers increasing in magnitude as the time since training grows longer. The reduction in complaints and force is most pronounced after 12 mo to 24 mo has passed since training. Importantly, the number of months that we observe clusters after training varies according to the adoption time of each cluster. Whereas early adopters are observed for at least 24 mo, late adopters are observed for between 1 mo and 23 mo, depending on when they were trained. Early adopters therefore make up a larger share of trained clusters in the 12 mo to 24 mo after training. The larger effect in this period suggests that training had a more pronounced effect on early adopters.

To examine heterogeneity in the training effect by adoption time, we estimated separate IFE models for early adoption clusters and late adoption clusters, retaining the always-control clusters in both models. Fig. 1 shows the early and late adoption periods. Fig. 4 shows that the effect was more pronounced on early adoption clusters. After 18 mo, early adopters had 9.54 fewer complaints, 1.28 fewer sustained and settled complaints, and 8.72 fewer uses of force per 100 officers compared to 6.04, 0.74, and 4.51 for late adopters, respectively. While the effect of training is durable, it caused a larger shift in behavior among officers trained early in the rollout. The complaints and use of force results are consistent across IFE and matrix completion (23) estimators; see *SI Appendix*.

Discussion

The force-based command and control model which is the dominant policing model in American policing is concerned with obtaining compliance through the threat or use of dominance and, if needed, coercion (24). This model has long been associated with public perceptions of mistreatment ranging from demeaning treatment to the excessive use of force. Recent discussions about policing emphasize the virtues of a new model of policing based upon procedural justice (2). Research points to desirable benefits from this type of policing, including heightened popular legitimacy, increased acceptance of police authority, and greater public cooperation with the police (15–18).

While empirical research findings suggest that the procedural justice model is preferable to the currently dominant command and control approach in terms of building public trust and promoting compliance and cooperation, its widespread adoption requires the identification of effective implementation models.

This study demonstrates the viability of one such model based upon officer training. The results indicate that training changes actual police behavior in desired ways while officers are in the field. Our findings are bolstered by the three separate outcome measures, which include complaints against police officers, complaints that were sustained or resulted in a settlement payout, and mandatory use of force reports filed by officers. Training reduced complaints against police, reduced demonstrated violations of legal or procedural rules, and reduced the frequency with which officers resorted to the use of force during interactions with civilians.

Importantly, the impact of training on complaints and use of force is durable, lasting at least 2 y. The staggered adoption of training enabled us to estimate the heterogeneity of the training effect by adoption time. The effect of training on late adopters was attenuated, suggesting there may be spillover effects in the rollout of training. That is, early adopters may have encouraged the take-up of procedural justice principles among late adopters prior to the latter group undertaking training, resulting in that training having a smaller effect at the time of delivery.

We anticipate that an evaluation of officer compliance with procedural justice methods in police–civilian interactions will be important for understanding the types of policing behaviors that were adopted and avoided to reduce complaints and the use of force. Further studies may also analyze the possibility of downstream effects associated with officer retraining, such as heightened top-down scrutiny, which may be important mechanisms for reducing misconduct and the use of force.

These results support efforts to change the culture of policing by demonstrating that realistic levels of training can produce substantial changes in police behavior on the streets.

Materials and Methods

Outcome Data. Outcome data consist of 19,994 complaint records and 21,303 use of force reports, each of which are routinely collected by the CPD. A total of 1,699 of the complaints were sustained or resulted in a settlement payout. The complaints and use of force data cover the period from January 2011 to March 2016. The sustained and settled data cover the period January 2011 to October 2015. Each complaint record identifies the officer named in the complaint, the date of the incident, and the type of officer action that led to the complaint. The use of force reports, known as Tactical Response Reports (TRR) within the CPD, identify the officer filing the report, the date of the incident, and the type of force used. For any officer using force, it is mandatory to file a TRR under departmental policy. We report the count per officer and distribution of types of complaint and force used in *SI Appendix*.

The routine collection of these data means that our measurements of officer behavior are distinct from and blind to the training program. However, it is important to note that our measurements do not necessarily account for the full range of potential officer misconduct or use of force. Previous work suggests that many people who believe they were mistreated by the police do not file a complaint (25), and the process of filing a complaint can be costly and complicated (26). Although it is departmental policy to file a TRR if force is used, there is no guarantee that officers will comply in all cases.

The outcome data were obtained through Freedom of Information Act (FOIA) requests by the Invisible Institute (http://invisible.institute). The outcome data have been released publicly and are available at https://github.com/invinst/chicago-police-data.

Training and Roster Data. Training data were provided by the CPD. The training data contain the last name, first name, middle initial, scrambled employee number, and date of training for each of the 8,618 officers in the study. The outcome data contain a unique identifier for each outcome. We matched the training data to the outcome data using CPD roster data. The CPD roster data include officer last name, first name, and the unique identifier used in the outcome data. Employee numbers are protected under FOIA and could not be obtained. The training data contained 10,411 unique officers. From these, 10,285 could be matched to exactly one unique identifier; 23 (0.22%) did not have a name match in the roster data; and 103 (0.99%) could not be matched to exactly one officer in the roster data. The nonunique matches are due to name duplication where, for example, there are two or more officers named John Smith in the roster data and we could not determine which of these received training on a particular date. The 23 officers that did not have a name match in the roster data and 103 officers who could not be uniquely matched were excluded from the analysis.

Training continued beyond the study period when the curriculum was revised and retitled "A Tactical Mindset: Police Legitimacy and Procedural Justice." Due to insufficient follow-up data, we could not evaluate the effects of this second, revised training module in the present study.

Data Exclusions. In addition to exclusion due to incomplete name matching, we excluded 1,667 officers who were appointed to the CPD during the study period. One source of information underlying the counterfactual estimator, detailed below, is the frequency of each outcome in the months before the onset of training. Excluding new officers ensures that there exists at least 12 mo of pretraining control observations against which to benchmark the training effect; 94% of the excluded officers underwent training within 6 mo of appointment, which is the typical period an officer spends in the CPD Recruit Academy. As such, the appointment exclusion means that our estimates do not provide evidence on the effects of training new officers, but rather the effects of retraining serving officers. Our evaluation includes the remaining 8,618 officers who were retrained.

Statistical Analysis. We clustered officers by the date on which they were trained. We then aggregated all complaints, sustained or settled complaints, and use of force reports by cluster in each month from January 2011 to March 2016, forming time series cross-sectional data. Our dependent variable is the frequency of complaints, sustained or settled complaints, or use of force reports per cluster-month. Each outcome is represented by a distinct outcome matrix Y_{it} containing these frequencies, with $N = 328$ rows corresponding to clusters of officers and $T = 63$ columns corresponding to months.

Each cluster has a training indicator in each month, which is $D = 1$ if the cluster has been trained or $D = 0$ if the cluster has not yet undergone training. Once a cluster has transitioned from $D = 0$ to $D = 1$ upon training, the cluster remains in the trained condition thereafter. The training condition for each cluster is represented by a matrix D_{it}, which has the same dimension as the outcome matrix Y_{it}. The study period ends before the last 22 clusters are trained which therefore remain in the $D = 0$ condition throughout. These always-control clusters ensure there are observations in the untrained condition in the latter months of the evaluation period.

To assess the training effect, for each outcome, we estimated a counterfactual matrix $Y_{it}(0)$ in which the elements are estimated counts under the scenario in which training had not taken place. To estimate the counterfactual matrix for each outcome, we used an IFE model (19, 27, 28). The IFE model is given by

$$Y_{it} = a_i + \lambda_i' f_t + e_{it}, \quad [1]$$

where Y_{it} are the observed outcomes, such as the count of complaints received, for each cluster i in each month t, α_i is an intercept, f_t is a vector of factors representing the rollout of training, λ_i is vector of factor loadings which represent unobserved characteristics of the officer clusters and which allow for heterogenous training effects across clusters, and e_{it} are cluster-specific errors (29). Through the interaction of the factors and factor loadings, the IFE estimator leverages observed patterns in counts within cluster over time and the patterns between clusters within time periods. Through f_t, the estimator incorporates information on the known structure of the training rollout. The number of factors is selected using a cross-validation procedure. By conditioning on the factors and factor loadings, the IFE estimator relaxes the assumption of parallel trends required by alternative models such as difference-in-differences (19).

The IFE estimator produces a counterfactual matrix $Y_{it}(0)$ which we subtract from the observed matrix $Y_{it}(1)$. The ATT is the mean difference between $Y_{it}(0)$ and $Y_{it}(1)$ in posttreatment months. Descriptively, this is the mean count of complaints per cluster-month that would have been received in the counterfactual condition in which training did not occur subtracted from the mean that we, in fact, observed in the posttraining period. We rescale the ATT to provide the effect per 100 officers per month rather than per cluster-month. For the cumulative ATT, we calculate the sum of the ATT over the 24 mo following the onset of training. A total of 575 officers ended employment at CPD between undertaking training and the end of the study period. We accounted for this source of attrition by updating the number of officers per cluster in each month. In *SI Appendix*, we show that the estimated effects are comparable if these 575 officers are excluded from the study. Standard errors and confidence intervals are computed using 2,000 block bootstraps at the cluster level (19).

To test for time-varying confounding in the pretraining trends in complaints and use of force, we conducted a set of placebo tests following the procedure introduced in Liu et al. (22). In the placebo tests, training is artificially introduced prematurely for each trained cluster. We run two separate tests with training introduced 3 mo early and then 5 mo early. In the absence of time-varying confounding, which is required for identifying the effect of training, there should be no discernible effect of training in the 3- or 5-mo placebo period before the training was, in fact, introduced. The placebo ATT is calculated using the IFE model following the procedure above. We interpret a large P value as evidence against an effect of training in the placebo period.

Data Availability. Data and code for reproducing the analyses presented in this paper are available on GitHub, https://github.com/george-wood/procedural_justice.

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RACE AND REASONABLENESS IN POLICE KILLINGS

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ABSTRACT

Police officers in the United States have killed over 1000 civilians each year since 2013. The constitutional landscape that regulates these encounters defaults to the judgments of the reasonable police officer at the time of a civilian encounter based on the officer's assessment of whether threats to their safety or the safety of others requires deadly force. As many of these killings have begun to occur under similar circumstances, scholars have renewed a contentious debate on whether police disproportionately use deadly force against African Americans and other nonwhite civilians and whether such killings reflect racial bias. We analyze data on 3933 killings to examine this intersection of race and reasonableness in police killings. First, we describe the objective circumstances and interactions of police killings and map those event characteristics to the elements of reasonableness articulated in case law. Second, we assess whether inherently vague constitutional regulation of lethal force is applied differently by officers depending on the civilian's race, giving rise to a disproportionate rate of deaths among racial and ethnic minority groups. We then assess the prospects for remediation of racialized police killings by testing the effects of an existing evidence-based training curricula designed to reduce police use of deadly force towards persons experiencing mental illness.

We find that, across several circumstances of police killings and their objective reasonableness, Black suspects are more than twice as likely to be killed by police than are persons of other racial or ethnic groups; even when there are no other obvious circumstances during the encounter that would make the use of deadly force reasonable. Police killings of Latinx civilians are higher compared to whites and other racial or ethnic groups in some but not all circumstances. We find no evidence that enhanced police training focused on mental health crises can reduce the incidence of fatal police shootings of persons in mental health crisis or racial and ethnic disparities generally in police

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killings. Our findings suggest that the standards in constitutional case law fail to anticipate the circumstances of fatal police shootings and are therefore seemingly irrelevant in preventing racial disparities in police fatal police shootings. In light of this constitutional landscape, we argue that the ineffectiveness of enhanced police training to reduce shootings overall and racial disparity within these shootings may reflect the absence of race-specific components in their curricula. We suggest that the addition of training components that specifically address the role of race in officers' perceptions of risk and their decision-making in potentially dangerous interactions with citizens may remediate both the incidence of police shootings and their apparent racial and ethnic disparity.

CONTENTS

INTRODUCTION

Saheed Vassell was well known in his rapidly gentrifying community of Crown Heights, Brooklyn.[1] He was the broom handler for a local barbershop and a fixture on the block, where his eccentricities and public drinking generated both fear and sympathy from local residents and neighborhood police.[2] Local patrol officers from the 71st Precinct, who were part of the New York Police Department ("NYPD") Neighborhood Policing program,[3] knew him well; they were often seen chatting him up and occasionally brought him Jamaican food.[4] They were also well aware of his recurring episodes of mental illness.[5] When Vassell was killed by officers from a different command within the same precinct, he had not been taking medication for his bipolar condition.[6]

On the day he was shot and killed, Vassell was seen waving a pipe that a passerby said looked like a gun.[7] One witness reported that he was "pointing something at people that looks like a gun and he's popping it as if . . . he's pulling the trigger."[8] A few 911 callers said he was poking people with the object.[9] But the local residents, including Vassell's ex-girlfriend, saw no danger in his erratic behavior.[10] People who knew Vassell said that he sometimes pointed objects at people while pretending the objects were guns but that he had no history of violence toward his neighbors or anyone else.[11]

But the 911 callers—some of whom may have been newcomers to the changing neighborhood—may not have known that Vassell's actions were not

[1] Benjamin Mueller, Jan Ransom & Luis Ferré-Sadurní, *Locals Knew He Was Mentally Ill. Officers Who Shot Him Didn't.*, N.Y. TIMES, Apr. 6, 2018, at A1.

[2] *Id.*

[3] WILLIAM J. BRATTON, N.Y.C. POLICE DEP'T, THE NYPD PLAN OF ACTION AND THE NEIGHBORHOOD POLICING PLAN: A REALISTIC FRAMEWORK FOR CONNECTING POLICE AND COMMUNITIES 1-2 (2015), http://home.nyc.gov/html/nypd/html/home/POA/pdf/Plan-of-Action.pdf [https://perma.cc/WJ59-UXGP].

[4] Mueller, Ransom & Ferré-Sadurní, *supra* note 1, at A1. Police officers also gave Vassell 120 summonses over the years. *Id.*

[5] *Id.*

[6] Thomas Tracy, *Family of Bipolar Brooklyn Man Shot Dead by Police Prepares to Sue City*, N.Y. DAILY NEWS (May 31, 2018, 3:30 PM), https://www.nydailynews.com/new-york/brooklyn/ny-metro-saheed-vassell-family-sues-nypd-over-cop-shooting-20180531-story.html [https://perma.cc/M2MX-5Z7V].

[7] *See* Mueller, Ransom & Ferré-Sadurní, *supra* note 1, at A1.

[8] Tracy, *supra* note 6.

[9] Mueller, Ransom & Ferré-Sadurní, *supra* note 1, at A1.

[10] *See* Doreen St. Félix, *On the Street in Brooklyn the Morning After the Police Shooting of Saheed Vassell*, NEW YORKER (Apr. 5, 2018), https://www.newyorker.com/news/dispatch/on-the-street-in-brooklyn-the-morning-after-the-police-shooting-of-saheed-vassell.

[11] *See* Mueller, Ransom & Ferré-Sadurní, *supra* note 1, at A1.

dangerous.[12] When the 911 calls came in, the neighborhood patrol officers were patrolling elsewhere. In their place, three plainclothes officers and one uniformed officer from the Strategic Response Group—an anticrime unit in the same NYPD precinct as the Neighborhood Policing officers—responded to the calls.[13] Because the responding officers were dispatched to an intersection instead of a specific address, they had no way of knowing that there had been multiple calls at that address about a person experiencing a mental health crisis.[14] As soon as they drove up to the spot where Vassell was standing, the responding officers said that Vassell took a "shooting stance" and pointed the pipe at them.[15] They fired ten shots within seconds of arriving at the scene, striking and killing Vassell.[16] The object in his hands turned out to be a piece of a discarded welding torch.[17]

The particulars of Saheed Vassell's death highlight the recurring dynamics that contribute to many of the nearly 1000 police killings of civilians that take place in the United States each year.[18] Some decedents, like Vassell, have chronic mental health problems and may be in the midst of an acute crisis that, to strangers, manifests as behavior that is either erratic or frightening during their fatal encounter with police. Some of these decedents, like Dwayne Jeune,[19] were both armed and in a mental health crisis.[20]

[12] *See* St. Félix, *supra* note 10 (noting that neighbor "wondered aloud . . . if a person unfamiliar with the mores of the community had called the police").

[13] Mueller, Ransom & Ferré-Sadurní, *supra* note 1, at A1.

[14] *Id.*

[15] *Id.*

[16] *See id.*

[17] *See* Tracy, *supra* note 6 (depicting metal rod Vassell was holding).

[18] *See Fatal Force*, WASH. POST, https://www.washingtonpost.com/graphics/investigations/police-shootings-database/ (last updated Apr. 14, 2020) [hereinafter *Washington Post Database*] (compiling data on fatal police shootings).

[19] Jeune was shot by police officers in his apartment after his mother called police to say he was acting erratically but not violently. *See* Sean Piccoli & Ashley Southall, *Officer Fatally Shoots 'Disturbed' Man*, N.Y. TIMES, Aug. 1, 2017, at A19. Officers had been to the apartment on previous occasions to respond to mental health crises, but when they entered the apartment this time, police reported that Jeune confronted them with a carving knife. After nonlethal force from a stun gun failed to subdue Jeune, the officers shot and killed him. According to Chief of Patrol Terence A. Monahan, the entire incident "unraveled in seconds." *Id.*

[20] Some publications and training materials use the term "emotionally disturbed" to refer to persons who have previously experienced a mental health crisis or have been diagnosed with a mental illness. *See, e.g.*, *id.* ("The Police Department responds to about 150,000 calls each year for what the agency calls emotionally disturbed people."). We use the terms "person(s) experiencing mental illness" or "person(s) in mental health crisis" to more specifically categorize the decedent's mental health status at the time of the shooting.

However, not all fatal encounters involve persons experiencing mental health crisis. Fatal encounters between civilians and police officers sometimes occur while the police are pursuing criminal investigations and mistakenly believe, as in the cases of Stephon Clark[21] and twelve-year-old Tamir Rice,[22] that the decedent is armed. Other decedents, like Alton Sterling, were carrying concealed guns not visible to police.[23] Still others were clearly unarmed, including Michael Brown,[24] Eric Garner,[25] and Freddie Gray[26]—fatalities that focused national attention on police killings that occur with "numbing familiarity."[27] Details beyond the headlines in police killings like these form the three questions addressed in this Article:

What does the breakdown of fatal police shootings across circumstances that justify the use of lethal force look like? When police officers have probable cause to believe that a suspect "poses a threat of serious physical harm, either to the officer or to others," they are authorized to use force against the suspect.[28] When that force turns deadly, courts and investigative bodies inquire into whether the officers reacted reasonably in using lethal force and whether there were

[21] Josiah Bates, *The Death of Stephon Clark: What We Know About the Sacramento Police Shooting*, ABC NEWS (Mar. 29, 2018, 3:25 PM), https://abcnews.go.com/US/death-stephon-clark-police-shooting/story?id=54039443 [https://perma.cc/FH22-Z5Z4].

[22] Michael Muskal, *Death of Boy at Cleveland Cop's Hand Ruled a Homicide; Shooting Among Those Sparking Protests Across U.S.*, CHI. TRIB., Dec. 14, 2014, at C23; Timothy Williams & Mitch Smith, *Jurors Decline Charges in Death of Cleveland Boy*, N.Y. TIMES, Dec. 29, 2015, at A1.

[23] *See* Press Release, U.S. DOJ, Federal Officials Close Investigation into Death of Alton Sterling (May 3, 2017), https://www.justice.gov/opa/pr/federal-officials-close-investigation-death-alton-sterling [https://perma.cc/ZV72-JD6S]. The responding officers claimed that Sterling had reached for a gun in his pocket, though investigators did not corroborate the officers' account. Ashley Cusick, Matt Zapotosky & Wesley Lowery, *Prosecutors in Sterling Case Cite 'Insufficient Evidence*,*'* WASH. POST, May 4, 2017, at A6.

[24] *See* U.S. DOJ, DEPARTMENT OF JUSTICE REPORT REGARDING THE CRIMINAL INVESTIGATION INTO THE SHOOTING DEATH OF MICHAEL BROWN BY FERGUSON, MISSOURI POLICE OFFICER DARREN WILSON 4 (Mar. 4, 2015), https://www.justice.gov/sites/default/files/opa/press-releases/attachments/2015/03/04/doj_report_on_shooting_of_michael_brown_1.pdf [https://perma.cc/95HA-5YCD].

[25] Sadie Gurman & Corinne Ramey, *U.S. Won't Bring Charges in Garner Death*, WALL STREET J., July 17, 2019, at A3.

[26] *See* Press Release, U.S. DOJ, Federal Officials Decline Prosecution in the Death of Freddie Gray (Sept. 12, 2017), https://www.justice.gov/opa/pr/federal-officials-decline-prosecution-death-freddie-gray [https://perma.cc/QCK8-JKJE].

[27] Theodore M. Shaw, *Introduction* to U.S. DOJ, THE FERGUSON REPORT: DEPARTMENT OF JUSTICE INVESTIGATION OF THE FERGUSON POLICE DEPARTMENT, at vii, vii-viii (2015) ("Ferguson did not happen in a vacuum. Police killings of unarmed individuals are, unfortunately, not uncommon. While the facts of each case are different, there is a numbing familiarity when an unarmed black boy, teenager, or man is killed by a police officer.").

[28] Tennessee v. Garner, 471 U.S. 1, 11 (1985).

shortfalls in the officers' reasonableness assessments.[29] These two inquiries—the objective circumstances and interactions where a shooting takes place and the heuristics applied by officers within the moment to decide whether shooting in those circumstances is reasonable—are at the core of the political and social tensions surrounding police killings.[30]

After controlling for the circumstances of each shooting, are fatal police shootings racialized? After exploring the circumstances present when these fatal police shootings take place, this Article queries whether officers interpret and apply the inherently vague reasonableness standard differently depending on the suspect's race.[31] In 2014, the controversial killings of Trayvon Martin and Michael Brown began to generate close public attention, emotional public reaction, and political responses[32] in part because of the disproportionate killings of African Americans.[33] There is a contentious and often heated debate in the

[29] *See, e.g.*, Devon W. Carbado, *From Stopping Black People to Killing Black People: The Fourth Amendment Pathways to Police Violence*, 105 CALIF. L. REV. 125, 149 (2017) (recognizing a "number of cases in which the Supreme Court's conclusion that particular searches and seizures are reasonable facilitates or expressly authorizes racial profiling in ways that can culminate in police violence"); Osagie K. Obasogie & Zachary Newman, *Constitutional Interpretation Without Judges: Police Violence, Excessive Force, and Remaking the Fourth Amendment*, 105 VA. L. REV. 425, 428-30 (2019) (summarizing Fourth Amendment jurisprudence culminating in requirement that officers be judged using objective reasonableness that "favors officer discretion" for use of force); Jesus A. Alonso, Note, *How Police Culture Affects the Way Police Departments View and Utilize Deadly Force Policies Under the Fourth Amendment*, 60 ARIZ. L. REV. 987, 993-94 (2018) (noting that police use of force constitutes Fourth Amendment seizure and must be subject to reasonableness analysis).

[30] For example, many officers believe it is reasonable to shoot a suspect who violates the "twenty-one-foot rule." This rule springs from a widespread belief that once an armed attacker who is running toward an officer crosses to within twenty-one feet of that officer, the attacker would be able to reach the officer before most officers could draw, aim, and fire their weapons. *See* Matt Apuzzo, *Police Rethink Long Tradition on Using Force*, N.Y. TIMES, May 5, 2015, at A1; W. Kip Viscusi & Scott Jeffrey, *Damages to Deter Police Shootings* 19-20 (Vanderbilt Univ. Law Sch. Legal Studies Research Paper Series, Working Paper No. 20-08, 2020), http://ssrn.com/abstract_id=3536622 [https://perma.cc/Z542-S2R3].

[31] *See infra* notes 41-72 and accompanying text (discussing reasonableness standard).

[32] *See Washington Post Database*, *supra* note 18; *see also* Lorenzo M. Boyd & Kimberly Conway Dumpson, *Black Lives Matter: The Watchdog for the Criminal Justice System*, *in* APPEARANCE BIAS AND CRIME 94, 95 (Bonnie Berry ed., 2019).

[33] *See, e.g.*, FRANKLIN E. ZIMRING, WHEN POLICE KILL 45 (2017) (showing that Black suspects accounted for 26.1% of police killings in 2015 but only 12.2% of U.S. population); Andrew C. Gray & Karen F. Parker, *Race, Structural Predictors, and Police Shootings: Are There Differences Across Official and "Unofficial" Accounts of Lethal Force?*, 65 CRIME & DELINQ. 26, 27 (2019) (acknowledging that "some scholars argue that racial minorities, especially Black Americans, disproportionately experience death at the hands of the police with regard to the size of their population in the United States" but questioning underlying data because statistics about racial group representation may not include other relevant

empirical literature on the prospect of police bias in the use of deadly force and whether it is disproportionately used against African Americans.[34] A corollary of this question is the larger social structure of police killings of citizens. Beyond the racial dimensions of individual killings, there are distinct patterns in the social and demographic structure of places where police killings take place—

information); *cf.* Joscha Legewie & Jeffrey Fagan, *Group Threat, Police Officer Diversity and the Deadly Use of Police Force* 1 (Columbia Law Sch. Pub. Law & Legal Theory Working Paper Grp., Paper No. 14-512, 2016), https://ssrn.com/abstract=2778692 [https://perma.cc/S2LV-37L4] ("We argue that a diverse police force mitigates group threat and thereby reduces the number of officer-involved killings."). *But cf.* Sean Nicholson-Crotty, Jill Nicholson-Crotty & Sergio Fernandez, *Will More Black Cops Matter? Officer Race and Police-Involved Homicides of Black Citizens*, 77 PUB. ADMIN. REV. 206, 214 (2017) (finding that increasing proportion of Black police does not appear to be effective strategy to reduce police-involved homicides of Black citizens in most cities).

[34] *See, e.g.*, Roland G. Fryer Jr., *An Empirical Analysis of Racial Differences in Police Use of Force*, 127 J. POL. ECON. 1210, 1258 (2019) (finding racial differences in nonlethal or physical force, yet "on the most extreme use of force—officer-involved shootings—we are unable to detect any racial differences either in the raw data or when accounting for controls"); Debbie S. Ma & Joshua Correll, Report, *Target Prototypicality Moderates Racial Bias in the Decision to Shoot*, 47 J. EXPERIMENTAL SOC. PSYCHOL. 391, 391 (2011) (finding that police officers on average did not show racial bias, but "target prototypicality" influenced their judgments). *Compare* David J. Johnson et al., *Officer Characteristics and Racial Disparities in Fatal Officer-Involved Shootings*, 116 PROC. NAT'L ACAD. SCI. 15,877, 15,877 (2019) (finding no evidence that anti-Black or anti-Latinx sentiment affected fatal shootings but noting that data is still too uncertain to draw firm conclusions), *with* Dean Knox & Jonathan Mummolo, Letter, *Making Inferences About Racial Disparities in Police Violence*, 117 PROC. NAT'L ACAD. SCI. 1261, 1261 (2020) (questioning logic of Johnson et al., *supra*, because the study's "approach is mathematically incapable of supporting its central claims"). *But see, e.g.*, Joshua Correll et al., *The Police Officer's Dilemma: A Decade of Research on Racial Bias in the Decision to Shoot*, 8 SOC. & PERSONALITY PSYCHOL. COMPASS 201, 207 (2014) (finding that police officers' field expertise and practice "minimize the behavioral consequences of stereotypes," allowing them to overcome racial stereotypes); Jennifer L. Eberhardt et al., *Seeing Black: Race, Crime, and Visual Processing*, 87 J. PERSONALITY & SOC. PSYCHOL. 876, 878 (2004) ("The more stereotypically Black a face appears, the more likely [police] officers are to report that the face looks criminal."); Yara Mekawi & Konrad Bresin, *Is the Evidence from Racial Bias Shooting Task Studies a Smoking Gun? Results from a Meta-analysis*, 61 J. EXPERIMENTAL SOC. PSYCHOL. 120, 128 (2015) (finding that participants were quicker to shoot armed Black targets, slower not to shoot unarmed Black targets, and more likely to have liberal shooting threshold for Black targets relative to white targets); Justin Nix et al., *A Bird's Eye View of Civilians Killed by Police in 2015: Further Evidence of Implicit Bias*, 16 CRIMINOLOGY & PUB. POL'Y 309, 328-29 (2017) (finding evidence of implicit bias in police shootings because Blacks were more than twice as likely to be unarmed when shot and killed as whites); Cody T. Ross, *A Multi-level Bayesian Analysis of Racial Bias in Police Shootings at the County-Level in the United States, 2011-2014*, PLOS ONE, Nov. 5, 2015, at 1, 12 (finding that individuals shot by police, whether armed or unarmed, had higher probability of being Black or Latinx than being white).

patterns that suggest a set of contextual factors regarding race and ethnicity that may increase the rates of police killings.[35] The killing of Saheed Vassell took place in Crown Heights, a neighborhood that for nearly three decades has been a hot spot of race conflict, class conflict, and, in turn, political conflict.[36] That there is a social structure that contributes to police killings, often linked to race, further intensifies the question of the racial distribution of police killings.

Can racialized police killings be reduced by training and remediation? After reviewing the debates in the empirical literature on the prospect of police bias in the use of deadly force, this Article discusses the prospects for remediating the disproportionate use of deadly police force against African Americans through evidence-based training curricula. The Crisis Intervention Training ("CIT")

[35] *See, e.g.*, Gray & Parker, *supra* note 33, at 40 (finding that Blacks are less likely to be shot and killed by police in areas where they are in worse economic positions); David Jacobs & David Britt, *Inequality and Police Use of Deadly Force: An Empirical Assessment of a Conflict Hypothesis*, 26 SOC. PROBS. 403, 410 (1979) (finding that prevalence of socioeconomic inequality predicts police use of lethal force); David Jacobs & Robert M. O'Brien, *The Determinants of Deadly Force: A Structural Analysis of Police Violence*, 103 AM. J. SOC. 837, 858 (1998) (finding that cities with Black mayors have fewer police killings of Black citizens); Karen F. Parker et al., *Racial Threat, Urban Conditions and Police Use of Force: Assessing the Direct and Indirect Linkages Across Multiple Urban Areas*, 7 JUST. RES. & POL'Y 53, 70 (2005) (finding that political climate, urban ecology, and level of social disorganization in urban cities directly bear on rate of police use of lethal force); Lawrence W. Sherman & Robert H. Langworthy, *Measuring Homicide by Police Officers*, 70 J. CRIM. L. & CRIMINOLOGY 546, 557 (1979) (finding certain community characteristics, including population density, gun density, violent-crime rate, and proportion of police to population, positively correlated with police-homicide rate); Lawrence W. Sherman, *Restricting the License to Kill: Recent Developments in Police Use of Deadly Force*, 14 CRIM. L. BULL. 577, 583 (1978) (noting that local administrative policy is most powerful source to restrict police use of lethal force); Legewie & Fagan, *supra* note 33, at 7 (arguing that diverse police force reduces number of police killings).

[36] *See* John Kifner, *A Boy's Death Ignites Clashes in Crown Heights*, N.Y. TIMES, Aug. 21, 1991, at B1. Tensions in Crown Heights became apparent after a prominent rabbi's motorcade accidentally ran over and killed Guyanese child Gavin Cato, which set off three days of riots. *See* Alexis Okeowo, *Crown Heights, Twenty Years After the Riots*, NEW YORKER (Aug. 19, 2011), https://www.newyorker.com/news/news-desk/crown-heights-twenty-years-after-the-riots. During the riots, teenager Lemrick Nelson Jr. was accused of stabbing a Jewish Australian student, Yankel Rosenbaum. David Remnick, *Waiting for the Apocalypse in Crown Heights*, NEW YORKER, Dec. 21, 1992, at 51, 54. Nelson was acquitted at trial in state court but was later indicted by a federal grand jury. *See* Kati Cornell Smith, *Lemrick Guilty—but He Faces Only Two Years in Jail*, N.Y. POST (May 15, 2003, 4:00 AM), https://nypost.com/2003/05/15/lemrick-guilty-but-he-faces-only-2-years-in-jail/ [https://perma.cc/S49C-HU5N]. The trial was a traumatic event for the city. The city's slow response to the riot was also criticized, leading to Mayor David Dinkins's loss in the 1993 mayoral election. *See* John Taylor, *The Politics of Grievance: Dinkins, the Blacks, and the Jews*, N.Y. MAG., Dec. 7, 1992, at 18, 19 ("The mayor became a surrogate for Lemrick Nelson, his failings during and after the Crown Heights riot the surrogate crime.").

model has had success at remediating recurring instances of police killings of civilians experiencing mental illness or mental health crises.[37] Drawing on this success, this Article queries whether enhanced officer training could reduce the incidence of police shootings of persons in several other circumstances, especially African Americans. This Article tests for the prospect of remediation in light of differences in the types of incidents and the race of the suspects who are killed.

To address these questions, this Article unfolds in four parts. Part I explores the interaction between race and reasonableness in fatal police shootings. It begins by describing the constitutional regulation of police action. Starting with *Tennessee v. Garner*,[38] *Graham v. Connor*,[39] and the objective reasonableness standard that governs whether law enforcement has contravened the Fourth Amendment by using lethal force, this Part queries whether the jurisprudential landscape of reasonableness invites disparities in police shootings based on subjective and disparate notions of which actions are reasonable and under what circumstances. We theorize that, although *Graham*'s standard purports to be objective, racial disparities in police killings of civilians evidence differences in the subjective interpretation of what is reasonable based on the suspect's race and relevant social context. We posit that several specific features of policing contribute to those disparities.

We first review recent scholarship on the patterns and characteristics of police shootings. We draw on recent epidemiological studies based on both crowdsourced data, such as the *Washington Post* database,[40] and observational data from agency records on these shootings. Section I.A examines the tensions in empirical tests for bias on account of a suspect's race and/or ethnicity in the patterns of police shootings. We also examine empirical studies showing the concentration of fatal police killings in places—cities, counties, and states—with specific social and economic characteristics, and we place those studies in conversation with political and social theories that link race and policing in Section 1.B.

Part II tests for the prospect of remediation in light of differences in the types of incidents and in victims' races in police killings. The question in this Part is whether CIT training reduces the incidence of police killings of persons in

[37] *See* Amy C. Watson & Anjali J. Fulambarker, *The Crisis Intervention Team Model of Police Response to Mental Health Crises: A Primer for Mental Health Practitioners*, BEST PRACTICES MENTAL HEALTH, Dec. 2012, at 71, 73; Alexis D. Campbell, Note, *Failure on the Front Line: How the Americans with Disabilities Act Should Be Interpreted to Better Protect Persons in Mental Health Crisis from Fatal Police Shootings*, 51 COLUM. HUM. RTS. L. REV. 313, 354 (2019) ("[O]nly CIT Exposure decreases the likelihood that unarmed persons in mental health crisis will be fatally shot by police officers.").

[38] 471 U.S. 1 (1985).

[39] 490 U.S. 386 (1989).

[40] *Washington Post Database*, *supra* note 18.

mental health crisis such that a similar model should be adopted to remediate disproportionate shootings of African Americans.

Part III turns to the empirical test. We first present the data and methods to test for racial disparities in the circumstances of police killings that reflect dimensions of subjective reasonableness within the *Graham* space. We rely on police-killings data sourced from the *Washington Post* database to identify the circumstances surrounding police killings from 2015 to 2018 and the factors that influence disparities along racial, ethnic, and circumstantial lines. We focus on the race-circumstance intersection to address the question of the subjectivity of reasonableness by suspect race.

Part IV shows the results of our empirical analyses. We find that, across several circumstances of police killings and their levels of objective reasonableness, Black suspects are more than twice as likely to be killed by police than are suspects from other racial or ethnic groups, including shootings where there are no obvious reasonable circumstances. We also estimate the potential for a race-based parallel to CIT training to reduce those disparities by comparing the incidence of the race-reasonableness intersection in counties with and without CIT training. Our findings show that, on average, CIT training provides few positive effects in this setting but that some counties witnessed reductions in some types of police shootings.

We conclude with a discussion of the failure of prevailing standards in constitutional case law to anticipate the circumstances of police shootings and their seeming irrelevance to persistent racial disparities in police killings. The deference in contemporary jurisprudence to police accounts of objective reasonableness[41] suggests the importance of revisiting the deference-based standard in light of both its failure to limit police killings and the creation of a racially infected space of lethal police force. Finally, we conclude that the ineffectiveness of CIT training in reducing shootings overall and in reducing racial disparities within these shootings may reflect the absence of race-specific components in CIT training curricula. The addition of training components that address the role of race in the officers' perceptions of risk and their decision-making in potentially dangerous interactions with citizens can remediate both the incidence of police shootings and their apparent racial and ethnic disparities.

[41] Anna Lvovksy, *The Judicial Presumption of Police Expertise*, 130 HARV. L. REV. 1995, 1998-2002 (2017).

I. RACE AND REASONABLENESS

A. *Reasonableness*

1. Thinking Fast: The Constitutional Architecture of Reasonableness[42]

At their core, police practices are regulated by the Fourth Amendment's protections against unlawful searches and seizures. The Supreme Court has held that the Fourth Amendment authorizes police officers to use force against a suspect when they have probable cause to believe that the suspect poses "a threat of serious physical harm, either to the officer or to others."[43] However, this reliance on the officer's belief about whether the suspect poses a threat creates an inherent tension between subjective assessments of threat or danger and the objective reasonableness of a police officer's decision to use deadly force. As Justice O'Connor described in her dissent in *Tennessee v. Garner*, "hindsight cannot provide the standard for judging the reasonableness of police decisions made in uncertain and often dangerous circumstances."[44] Justice O'Connor's dissent captures the dilemma of reasonableness *in situ*: perception and decision-making under urgent—if not exigent and vague—conditions.[45]

Garner held that a suspect's flight provides a sufficient threat to justify the use of lethal force if "the officer has probable cause to believe that the suspect poses a significant threat of death or serious physical injury to the officer or others."[46] However, courts have shied away from objective standards and instead have deferred to officers' split-second reasoning.[47] For example, under *Graham v. Connor*, situations in which an officer perceives an immediate threat do not require a risk calculation wherein the officer first considers a menu of actions before deciding how to respond; in other words, "split-second judgments" by a police officer in response to an immediate threat are reasonable under *Graham*.[48] This holding in turn incorporated split-second thinking into Fourth Amendment jurisprudence on police use of force.

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[42] We borrow this heading from Daniel Kahneman's framework of System I (or split-second) thinking. *See* DANIEL KAHNEMAN, THINKING, FAST AND SLOW 20-21 (2011).

[43] Tennessee v. Garner, 471 U.S. 1, 11 (1985).

[44] *Id.* at 26 (O'Connor, J., dissenting).

[45] *Id.* at 32 ("We can expect an escalating volume of litigation as the lower courts struggle to determine if a police officer's split-second decision to shoot was justified by the danger posed by a particular object and other facts related to the crime.").

[46] *Id.* at 3, 11 (majority opinion).

[47] *E.g.*, Graham v. Connor, 490 U.S. 386, 396-97 (1989). *See generally* James J. Fyfe, *The Split-Second Syndrome and Other Determinants of Police Violence*, *in* CRITICAL ISSUES IN POLICING 517, 527 (Roger G. Dunham & Geoffrey P. Alpert eds., 7th ed. 2015) (1989).

[48] *Graham*, 490 U.S. at 396-97.

Scott v. Harris[49] further stripped away the framework regulating police use of force by holding that there are no clearly impermissible uses of deadly force so long as the use is *objectively* reasonable in the circumstances of each case.[50] Or, as the *Scott* Court concluded, there is no "magical on/off switch that triggers rigid preconditions."[51] Professors Brandon Garrett and Seth Stoughton frame this as deregulated force: "[O]fficers may use force, including deadly force, so long as it is objectively reasonable to do so in the circumstances of each case."[52] In effect, then, there is no doctrine that guides the use of force. Thus, in addition to being opaque and defaulting nearly completely to an officer's subjective judgments, *Graham* and *Scott* neither instruct police officers as to what is reasonable nor direct courts as to how to properly evaluate the reasonableness of an officer's actions.[53]

The doctrine, then, allows courts to defer to the *average* decisions of *average* officers in the moment for assessments of reasonableness. The claim that officers make split-second judgments was incorporated into the language of constitutional regulation articulated by the *Graham* Court. The *Garner* Court incorporated James Fyfe's depiction and empirical analysis of split-second reasoning used by officers confronting suspects whom they thought to pose an imminent threat of harm.[54] Fyfe characterized the syndrome as the burden on officers "who must make life-or-death decisions under the most stressful and time-constrained conditions."[55] The lives and deaths he refers to are the lives of the officers (and often those of bystanders or other potential victims as well) that are put at risk when an officer confronts a potential offender or adversary. Fyfe explains that the decisions are made in the exigencies of the moment: "[T]he sole basis on which any use of force by the police needs to be justified is the

[49] 550 U.S. 372 (2007).

[50] *Id.* at 383 ("Although respondent's attempt to craft an easy-to-apply legal test in the Fourth Amendment context is admirable, in the end we must still slosh our way through the factbound morass of 'reasonableness.' Whether or not Scott's actions constituted application of 'deadly force,' all that matters is whether Scott's actions were reasonable.").

[51] *Id.* at 382.

[52] Brandon Garrett & Seth Stoughton, *A Tactical Fourth Amendment*, 103 VA. L. REV. 211, 217 (2017).

[53] *Id.* at 218; *see* Rachel A. Harmon, *When Is Police Violence Justified?*, 102 NW. U. L. REV. 1119, 1119-20 (2008) (characterizing Supreme Court's standard as "indeterminate" and "undertheorized").

[54] The *Graham* Court held that "[t]he 'reasonableness' of a particular use of force must be judged from the perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight." Graham v. Connor, 490 U.S. 386, 396 (1989) (citing Terry v. Ohio, 392 U.S. 1, 20-22 (1968)). The Court based its decision in no small part on the claim that use-of-force incidents require officers "to make split-second judgments—in circumstances that are tense, uncertain, and rapidly evolving." *Id.* at 397.

[55] Fyfe, *supra* note 47, at 526.

officers' perceptions of the circumstances prevailing at the instant when they decide to apply force."[56]

When a shooting or other lethal act of violence does result, then, the officer makes a decision that lives—the officer's or others'—were in imminent danger, that alternatives would be unable to protect those lives, and that these facts would necessitate and justify a shooting. It is a decision, most importantly, made in the "heat of the moment,"[57] using cognitive machinery under conditions of threat and arousal. When an officer forms the belief that they are in imminent danger, they are also likely to believe that a shooting will be justified and that the use of force will be legitimate under both training and the law.[58] As we describe later, these decisions are freighted with perceptual intuitions that open the door to a range of factors including race, place, and norms that can bias the decision.

Fyfe's depiction of officer decision-making was adopted without detailed scrutiny in Justice O'Connor's dissent in *Garner* and again by the *Graham* majority.[59] However, Fyfe—a former New York City police officer—wrote that although officers often have to make instantaneous decisions, the "split-second" explanation can also be used as a post hoc justification for unnecessary police violence.[60] He advised that instead of valorizing an officer's decision to shoot their way out of a dangerous situation, courts might ask whether there were alternatives that would have reduced serious injury or fatalities. In other words, the blanket explanation for split-second decision-making cited in both the *Garner* dissent and the *Graham* majority may well be a fallacy.

Instead of seeking a workable standard, then, the *Graham* Court sought a practical but one-sided solution; the Court effectively adopted Justice O'Connor's dissent in *Garner* and incorporated it into the constitutional framework, allowing police to set their own reasonableness standard based on how the "average" police officer would react in a rapidly evolving situation.[61]

However, who the "average" officer is, how they would apply these standards, and what circumstances justify the use of force are all important questions that present a challenge both for police executives (who must train officers on how to comply with the Fourth Amendment) and for courts. In addition to objective

[56] *Id.* at 527.

[57] *Id.*

[58] *Id.*

[59] *Graham*, 490 U.S. at 396-97; Tennessee v. Garner, 471 U.S. 1, 32 (1985) (O'Connor, J., dissenting).

[60] Fyfe, *supra* note 47, at 526.

[61] *See Graham*, 490 U.S. at 396-97; *Garner*, 471 U.S. at 32 (O'Connor, J., dissenting) ("The Court's silence on critical factors in the decision to use deadly force simply invites second-guessing of difficult police decisions that must be made quickly in the most trying of circumstances.").

standards that appear in case law, such as flight,[62] perceived attack,[63] and danger to others,[64] we might also discern *subjective* standards of reasoning from the recurring patterns in police killings. The core of the *Graham* standard is that the *accuracy* of accounts of why officers thought they were in imminent danger matters less than what the officer *felt* in *that* moment at *that* scene and whether a similarly situated officer would have *felt* the same urgency. This seemingly subjective standard, which the *Graham* majority and the *Garner* dissent termed *objective*, has led at least one state legislature to change its use-of-force standard from *reasonable* to *necessary* and to require jurors to consider the "totality of the circumstances."[65] Several local law enforcement agencies have revised their use-of-force policies to, for example, (a) reserve deadly force for instances in which all alternatives have been exhausted, (b) require minimal force whenever possible, and (c) require use of de-escalation tactics whenever possible.[66]

Discerning these standards is challenging in action and institutionally difficult. Police agencies are implicated in the training and regulation of their officers and, therefore, in how officers interact with citizens whom they may perceive as threatening. Moreover, the ability to link threat and risk to proper action will vary among different officers and different situations. In addition to any formal training officers may receive, their individual experiences with persons in the midst of mental health crises guide their responses. For example, in Saheed Vassell's case, the patrol officers were well acquainted with him, understood the level of threat that he posed, and had experience in defusing the tensions arising from his erratic behavior.[67] But the responding officers from the Strategic Response Group defaulted to a split-second threat assessment—one that regards threats to officers' personal safety or the safety of bystanders as the primary consideration.[68] Similarly, in the case of Tamir Rice—the twelve-year-old boy holding a toy gun who was shot by an officer within seconds of arriving on the scene—investigators said that the officer was "reacting to an immediate threat."[69]

These examples typify how the *split-second syndrome* can overwhelm other decision processes and lead to instantaneous assessments of risk and threat that require immediate action. In less exigent circumstances, the actions of officers struggling to assess threat *in situ*, with uncertain estimates of risk, can aggravate

[62] Scott v. Harris, 550 U.S. 372, 384 (2007); *Garner*, 471 U.S. at 3.

[63] *Graham*, 490 U.S. at 396.

[64] *Scott*, 550 U.S. at 385.

[65] *See* CAL. PENAL CODE § 835(a) (West 2020).

[66] *See Limit Use of Force*, CAMPAIGN ZERO, https://www.joincampaignzero.org/force [https://perma.cc/C3GH-QRXW] (last visited Apr. 20, 2020) (advocating for model use-of-force policies, which aim to "significantly reduce police violence in communities").

[67] Mueller, Ransom & Ferré-Sadurní, *supra* note 1, at A1.

[68] *See* Fyfe, *supra* note 47, at 527.

[69] Garrett & Stoughton, *supra* note 52, at 214-15.

a suspect's emotional instability[70] or "quickly escalate to violence."[71] Thus, a professional toolkit that trains officers to respond with less-than-lethal force could shift the framework of what is reasonable under a given set of circumstances. Several scholars have suggested that the Fourth Amendment creates a space for constitutional regulation based on what officers *actually do* in these circumstances and that its threadbare, subjective guidelines can be recast as objective standards that might provide a basis for an empirical test of reasonableness.[72]

2. Reasonableness and Police Culture

Both the individual traits of an officer and the circumstances surrounding an officer's contact with a civilian bear on the officer's decision to use deadly force (or any force at all). While individual features, such as emotional regulation or threat perception, are obviously difficult to average, experimental studies help us better understand how officers under different conditions see, interpret, and respond to danger. The situational contexts in which officers do police work can also shape their risk perceptions, emotions (including and especially fear), and actions. Further, social ties among police officers may bear on their uses of force. These social networks of officers are the spaces where information and experiences are shared and norms and perceptual frameworks are shaped and reinforced.[73]

a. *Officers' Perceptions of Threat and Risk*

The idea that routine encounters between police and civilians can be unpredictable and dangerous to police is a common narrative in policing.[74] Police officers are trained to take command in these encounters by asking penetrating questions and temporarily detaining civilians using restraints or

[70] A study by the Treatment Advocacy Center found that "the risk of being killed during a police incident is 16 times greater for individuals with untreated mental illness than for other civilians approached or stopped by officers." DORIS A. FULLER ET AL., TREATMENT ADVOCACY CTR., OVERLOOKED IN THE UNDERCOUNTED: THE ROLE OF MENTAL ILLNESS IN FATAL LAW ENFORCEMENT ENCOUNTERS 1 (2015), https://www.treatmentadvocacycenter.org/overlooked-in-the-undercounted [https://perma.cc/D2R7-MFKQ].

[71] Andrew C. Hanna, Note, *Municipal Liability and Police Training for Mental Illness: Causes of Action and Feasible Solutions*, 14 IND. HEALTH L. REV. 221, 237 (2017) (quoting Liza Lucas, *Changing the Way Police Respond to Mental Illness*, CNN (July 6, 2015, 3:51 PM), http://www.cnn.com/2015/07/06/health/police-mental-health-training/ [https://perma.cc/WGF7-Z2Q9].

[72] *See, e.g.*, Garrett & Stoughton, *supra* note 52, at 222.

[73] Seth Stoughton, Commentary, *Law Enforcement's "Warrior" Problem*, 128 HARV. L. REV. F. 225, 226-29 (2015) (describing systemic indoctrination of "warrior mentality" into officers accomplished via training, trade media, and peers' attitudes).

[74] *Id.* at 229; Jordan Blair Woods, *Policing, Danger Narratives, and Routine Traffic Stops*, 117 MICH. L. REV. 635, 638 (2019).

verbal instructions—an authority granted by the courts, which routinely defer to officers' safety priorities.[75] Officers regularly see violent encounters in training and are taught methods of self-protection to use in these encounters.[76]

The belief that these encounters are often dangerous, if not life-threatening, is reinforced by continued reliance on a fifty-year-old study, known as the "Bristow study," which found that one-third of officer killings took place during routine traffic stops.[77] To this day, courts and police-training material commonly cite the study.[78] A more recent study by Professors Illya Lichtenberg and Alisa Smith reinforced Bristow's danger narrative and scientized it by creating a "danger ratio" to gauge risks across different types of police encounters, such as domestic disturbances.[79] Virtual simulation programs that place officers in the midst of a series of dangerous encounters further reinforce this priming to see danger.[80] The priming for danger can mix with specific perceptual frameworks, personality profiles, or "baggage" that police (who self-select into the profession) bring to the workplace.[81]

One piece of that baggage is hypermasculinity.[82] Professor Frank Rudy Cooper defines hypermasculinity as an exaggeration of masculine qualities such as aggressiveness, endorsement of violence, and anxiety over self-presentation

[75] *See, e.g.*, Arizona v. Johnson, 555 U.S. 323, 330 (2009) ("[T]he Court has recognized that traffic stops are 'especially fraught with danger to police officers.'" (quoting Michigan v. Long, 463 U.S. 1032, 1047 (1983))); Lvovsky, *supra* note 41, at 1999-2003 ("[J]udges came to rely on the promise of police expertise . . . to expand police authority in multiple areas of the law."); Alice Ristroph, *The Constitution of Police Violence*, 64 UCLA L. REV. 1182, 1200-07 (2017).

[76] Woods, *supra* note 74, at 695.

[77] *Id.* at 655 (summarizing Bristow's study). *See generally* Allen P. Bristow, *Police Officer Shootings—A Tactical Evaluation*, 54 J. CRIM. L. CRIMINOLOGY & POLICE SCI. 93 (1963).

[78] *See, e.g.*, Pennsylvania v. Mimms, 434 U.S. 106, 110 (1977) (per curiam) ("According to one study, approximately 30% of police shootings occurred when a police officer approached a suspect seated in an automobile." (quoting Adams v. Williams, 407 U.S. 143, 148 n.3 (1972)) (citing Bristow, *supra* note 77, at 93); Woods, *supra* note 74, at 654-57 (detailing impact of Bristow study).

[79] Illya D. Lichtenberg & Alisa Smith, *How Dangerous Are Routine Police-Citizen Traffic Stops?*, 29 J. CRIM. JUST. 419, 422-24 (2001) (claiming that eighty-nine police officer fatalities, accounting for 12.9% of total civilian killings of police officers, took place during routine traffic stops).

[80] Woods, *supra* note 74, at 638-39.

[81] *See* RADLEY BALKO, RISE OF THE WARRIOR COP: THE MILITARIZATION OF AMERICA'S POLICE FORCES 325-28 (2013) (suggesting that police recruitment and training videos attract hypermasculine personality types); Stoughton, *supra* note 73, at 227-28.

[82] Frank Rudy Cooper, "*Who's the Man?": Masculinities Studies,* Terry *Stops, and Police Training*, 18 COLUM. J. GENDER & L. 671, 674 (2009) (explaining that police officers present commanding presence to boost their masculine esteem to civilians and to colleagues).

as a dominant male.[83] Professor Angela Harris describes hypermasculinity as a masculine identity in which physical aggression is exalted with the aim of domination.[84] Officers justify such gendered aggression as necessary to control those suspects whom they believe are dangerous.[85] In effect, police use masculinity contests to dominate suspects.[86] This gendered notion of police aggression is tilted toward male officers, a reflection of the sample biases in studies of police culture and the police workplace.

Cooper specifically links masculinity contests to *Terry* stops,[87] which are often the predicate encounter leading to a citizen death.[88] When a police-citizen interaction becomes a masculinity contest, the officer's identity is threatened, heightening the sense that the encounter could turn dangerous.[89] More generally, hypermasculinity, characterized by physical strength and aggressiveness, may be embedded in police culture—from recruitment and training to advancement within the department.[90] This example illustrates the gendered mechanisms through which personality and individual factors can distort action and compromise how officers decide what actions are "reasonable" given the primacy of officer safety in constitutional regulation.

[83] *Id.* at 677.

[84] Angela P. Harris, *Gender, Violence, Race, and Criminal Justice*, 52 STAN. L. REV. 777, 785 (2000).

[85] *See* Erwin Chemerinsky, *An Independent Analysis of the Los Angeles Police Department's Board of Inquiry Report on the Rampart Scandal*, 34 LOY. L.A. L. REV. 545, 564 (2001) ("Control really is the big issue for this department. I think for them, control is not a means to an end. I think control is an end in itself." (quoting Jeffrey Eglash, Los Angeles Police Department's second Inspector General)).

[86] Cooper, *supra* note 82, at 674.

[87] *Terry* stops take their name from the Supreme Court case that legitimized their use. *See generally* Terry v. Ohio, 392 U.S. 1 (1968).

[88] *Id.* at 676.

[89] Phillip Atiba Goff, Brooke Allison Lewis Di Leone & Kimberly Barsamian Kahn, Report, *Racism Leads to Pushups: How Racial Discrimination Threatens Subordinate Men's Masculinity*, 48 J. EXPERIMENTAL SOC. PSYCHOL. 1111, 1116 (2012).

[90] *Cf.* L. Song Richardson & Phillip Atiba Goff, *Implicit Racial Bias in Public Defender Triage*, 122 YALE L.J. 2626, 2634-35 (2013) (explaining that well-known issue of implicit and unconscious bias in police treatment of Black suspects can also affect decisions of public defenders, leading to disparate outcomes in criminal court for Black and Latinx defendants). *See generally* Jennifer Carlson, *Police Warriors and Police Guardians: Race, Masculinity, and the Construction of Gun Violence*, SOC. PROBS., Aug. 19, 2019, at 1, https://doi.org/10.1093/socpro/spz020 [https://perma.cc/QGD9-EZ3Z].

b. *The Average Officer's Workplace*

That officers work within cultures with distinct norms that shape perceptions and behavioral choices is not new.[91] Cultures shape officers' views of citizens—views that are often mistrustful[92] or contemptuous.[93] Cultures also shape affinities among groups of officers based on shared views and trust. In dense social networks, there are often social sanctions for officers who violate those norms.[94]

Police culture can shape the going rate of aggressiveness in citizen-police interactions, perceptions of the legitimacy of law and when violations are appropriate, and the parameters of situations in which violence is justified against certain citizens.[95] In one study on the use of force, officers who prescribed to more traditional or hierarchical views of social norms and culture were generally more likely to use force.[96] In turn, such officers enjoy the approval of citizens who share those views.[97] Overall, culture provides a strong

[91] *See generally* Jason R. Ingram, Eugene A. Paoline III & William Terrill, *A Multilevel Framework for Understanding Police Culture: The Role of the Workgroup*, 51 CRIMINOLOGY 365 (2013) (demonstrating that police culture stems from the collective); Jason R. Ingram, William Terrill & Eugene A. Paoline III, *Police Culture and Officer Behavior: Application of a Multilevel Framework*, 56 CRIMINOLOGY 780 (2018) [hereinafter Ingram, Terrill & Paoline, *Police Culture and Officer Behavior*]; Peter K. Manning, *Performance Rituals*, 2 POLICING 284 (2008); Stephen D. Mastrofski, *Controlling Street-Level Police Discretion*, 593 ANNALS AM. ACAD. POL. & SOC. SCI. 100 (2004); Jerome H. Skolnick, Reaction Essay, *Racial Profiling—Then and Now*, 6 CRIMINOLOGY & PUB. POL'Y 65 (2007); John Van Maanen, *Observations on the Making of Policemen*, 32 HUM. ORG. 407 (1973) (examining development of culture among police recruits).

[92] Manning, *supra* note 91, at 292 ("[P]olice etiquette dictates a distance and distrust of the public at large . . . ."); Skolnick, *supra* note 91, at 65-66.

[93] Van Maanen, *supra* note 91, at 415 (documenting officer's feelings of "constant pressure from the public" to account for actions taken or not taken); Robert E. Worden, *Police Officers' Belief Systems: A Framework for Analysis*, 14 AM. J. POLICE, no. 1, 1995, at 49, 66 (describing some officers' belief that "public is uncooperative and even hostile").

[94] *See, e.g.*, Raymond v. City of New York, 317 F. Supp. 3d 746, 756-57 (S.D.N.Y. 2018) (reciting plaintiff officers' allegations of patterns of discrimination in work assignments, in discipline of minority officers who revealed evidence of quotas, and in other unconstitutional police administrative practices); Floyd v. City of New York, 959 F. Supp. 2d 540, 598 (S.D.N.Y. 2013) (detailing "virulent precinct culture" at NYPD within context of its stop-and-frisk program).

[95] *See* Ingram, Terrill & Paoline, *Police Culture and Officer Behavior*, *supra* note 91, at 781 & n.1 (highlighting connection between work environment and aggressive patrols).

[96] William Terrill, Eugene A. Paoline III & Peter K. Manning, *Police Culture and Coercion*, 41 CRIMINOLOGY 1003, 1029 (2003).

[97] Dan M. Kahan, David A. Hoffman & Donald Braman, *Whose Eyes Are You Going to Believe?* Scott v. Harris *and the Perils of Cognitive Illiberalism*, 122 HARV. L. REV. 837, 903 (2009). When videos of the *Scott v. Harris* police chase, in which police forced a fleeing car off the road in a high-speed chase, were shown to a group of respondents in an experiment,

steering mechanism that shapes officers' norms and behaviors and that spills over into the workplace to influence the formation of networks among officers.[98]

Recent studies of social networks suggest that the density of interactions and social ties among people determines the behaviors of individuals in those groups and increases the likelihood that they will engage in similar behaviors, both alone and in groups.[99] This is true across social groups of professionals.[100] Network structures also shape behavior in criminal groups, including the use of lethal violence.[101]

those who reported more authoritarian views generally approved of the officers' actions, while those who expressed more egalitarian views disapproved of the officers' actions. *Id.*

[98] David Alan Sklansky, *Seeing Blue: Police Reform, Occupational Culture, and Cognitive Burn-In*, *in* POLICE OCCUPATIONAL CULTURE: NEW DEBATES AND DIRECTIONS 19, 22 (Megan O'Neill, Monique Marks & Anne-Marie Singh eds., 2007).

[99] *See, e.g.*, Damon Centola, *Influential Networks*, 3 NATURE HUM. BEHAV. 664, 664-65 (2019) (examining role of "influencers" in social dynamics). For a review of social network analysis, see generally, for example, Ronald S. Burt, Martin Kilduff & Stefano Tasselli, *Social Network Analysis: Foundations and Frontiers on Advantage*, 64 ANN. REV. PSYCHOL. 527 (2013).

[100] *See generally, e.g.*, Ronald S. Burt, *Models of Network Structure*, 6 ANN. REV. SOC. 79 (1980) (examining social connection theory and modeling); Damon Centola, Invited Commentary, *Physician Networks and the Complex Contagion of Clinical Treatment*, JAMA NETWORK OPEN, Mar. 2020, at 1, 1-2 (examining social challenges in physician profession); Mark S. Granovetter, *The Strength of Weak Ties*, 78 AM. J. SOC. 1360 (1973) (examining tie between micro- and macrolevels of sociological theory); Basil S. Georgopoulos, 12 BEHAV. SCI. 481, 482 (1967) (book review) (remarking on "powerful influence of the professional-social integration of physicians" on those physicians' behavior).

[101] Barak Ariel, Ashley Englefield & John Denley, "*I Heard It Through the Grapevine": A Randomized Controlled Trial on the Direct and Vicarious Effects of Preventative Specific Deterrence Initiatives in Criminal Networks*, 109 J. CRIM. L. & CRIMINOLOGY 819, 831, 861 (2019) (discussing evidence that cohesion of individual's peer network influences that person's decision to commit crimes); Ben Green, Thibaut Horel & Andrew V. Papachristos, *Modeling Contagion Through Social Networks to Explain and Predict Gunshot Violence in Chicago, 2006 to 2014*, 177 JAMA INTERNAL MED. 326, 327 (2017).

Police wrongdoing is no exception.[102] Neither are the norms on tolerance of false testimony[103] or use of force.[104] A recent study in Chicago showed that a police officer's exposure to peers accused of misconduct shapes the officer's involvement in excessive-use-of-force incidents.[105] The effects in this study have potential importance for understanding the spread and persistence of such force; Professor Marie Ouellet and colleagues showed that officer involvement in excessive-use-of-force complaints is predicted by having a greater proportion of co-accused with a history of such behaviors in the officer's social network.[106]

Two things stand out from the studies of network effects among police: (1) the diffusion effect of rule-violation norms from officer to officer and (2) the growing evidence that officers have "careers" of such rule violations, especially in the use of excessive (and potentially deadly) force.[107] The spread and deepening of norms within police cultures tolerating, if not supporting, excessive force suggests that the workplace itself, however segmented it may be by such networks, is a potentially powerful force in shaping what officers view as "reasonable" uses of such force. The contributions of these network effects

[102] Norman Conti & Patrick Doreian, *Social Network Engineering and Race in a Police Academy: A Longitudinal Analysis*, 32 SOC. NETWORKS 30, 41 (2010) (investigating tensions between elected officials and police on race and social networking in police academies); George Wood, Daria Roithmayr & Andrew V. Papachristos, *The Network Structure of Police Misconduct*, SOCIUS, Jan.-Dec. 2019, at 1, 3.

[103] *See generally* Carl B. Klockars, *Blue Lies and Police Placebos: The Moralities of Police Lying*, 27 AM. BEHAV. SCIENTIST 529 (1984) (describing how police officers derive moral legitimacy from their partners and peers by lying and falsifying reports); Julia Simon-Kerr, *Systemic Lying*, 56 WM. & MARY L. REV. 2175, 2201 (2015) (examining role of lying in legal system); Steven Zeidman, *From Dropsy to Testilying: Prosecutorial Apathy, Ennui, or Complicity?*, 16 OHIO ST. J. CRIM. L. 423 (2019) (examining dynamic between prosecutors and false police testimony).

[104] Jon B. Gould & Stephen D. Mastrofski, *Suspect Searches: Assessing Police Behavior Under the U.S. Constitution*, 3 CRIMINOLOGY & PUB. POL'Y 315, 323 (2004) (describing tolerance among police on patrol for unconstitutional suspect searches); Daria Roithmayr, *The Dynamics of Excessive Force*, 2016 U. CHI. LEGAL F. 407, 409 (highlighting social patterns around excessive use of police force); *see* Bernard E. Harcourt, Reaction Essay, *Unconstitutional Police Searches and Collective Responsibility*, 3 CRIMINOLOGY & PUB. POL'Y 363, 366-67 (2004) (describing moral reasoning and complicity of officers on patrol in an unconstitutional stop and search).

[105] Marie Ouellet et al., *Network Exposure and Excessive Use of Force: Investigating the Social Transmission of Police Misconduct*, 18 CRIMINOLOGY & PUB. POL'Y 675, 679 (2019) (relating exposure to violent peers with further misconduct); Wood, Roithmayr & Papachristos, *supra* note 102, at 3 (examining social network structure and police misconduct).

[106] Ouellet et al., *supra* note 105, at 679.

[107] *Id.*; *see* Roithmayr, *supra* note 104, at 409. A third perspective suggests a contradiction among police officers in such networks: supporting prosocial and antisocial norms at the same time within both their work networks and their everyday workplaces.

are important for *deadly* force—most of the analyses of police killings represent a small fraction of the number of uses of potentially deadly force from shootings in which the civilian is not killed. Whether these network effects extend to all instances of police use of deadly force is an important question for response and remediation. And for doctrine, this work suggests that courts should reconsider what the "average" officer views as "reasonable."

B. *Race*

Two perceptual processes potentially contribute to police officers' elevated sense of threat in encounters with civilians. These processes, whether a product of implicit biases or explicit biases, may shape officers' perceptions of danger and skew police use of force racially by shaping officers' interpretations of danger. One process follows from perceptions of danger and disorder in the neighborhood contexts where civilian encounters take place. A second process is the attribution of threat in interactions between officers and civilians. Racial cues animate decisions and actions that can determine whether violence is the end result of a police-civilian encounter.

1. Race, Reasonableness, and Neighborhood Context

Neighborhood social contexts contribute to the sense of danger that may compromise a police officer's objective reasonableness during an encounter with a civilian. The visual cues of disorder in a neighborhood can lead to differences in perceptions of the levels of crime and danger in those places.[108] Priming police training with crime stereotypes of risky places and groups of (nonwhite) people can perceptually cue the sense of risk from these social contexts. Stereotypes like the "symbolic assailant"—often a Black male in an inner-city neighborhood—seem to be enduring tropes about crime and race that shape the sense of danger for police.[109]

The presence of these stereotypes can stigmatize neighborhoods and reinforce police decisions to allocate patrols there. Professors Robert Sampson and Stephen Raudenbush combined objective neighborhood video footage with survey data to identify the predictors of perceived danger and disorder.[110] Their results showed that as the concentration of minority groups increased within a

[108] *See* Robert J. Sampson & Stephen W. Raudenbush, *Seeing Disorder: Neighborhood Stigma and the Social Construction of "Broken Windows,"* 67 SOC. PSYCHOL. Q. 319, 332 (2004) (showing differences by race in perceptions of connection between neighborhoods' social and physical disorder and crime).

[109] Jeannine Bell, *Dead Canaries in the Coal Mines: The Symbolic Assailant Revisited*, 34 GA. ST. U. L. REV. 513, 523 (2018); L. Song Richardson, *Implicit Racial Bias and Racial Anxiety: Implications for Stops and Frisks*, 15 OHIO ST. J. CRIM. L. 73, 84 (2017) (relating development of *Terry* decision to modern racial bias); Skolnick, *supra* note 91, at 65.

[110] Sampson & Raudenbush, *supra* note 108, at 325-27 (using analyses of video footage and survey data to connect perceptions of social disorder to the perceiver's race and ethnicity).

neighborhood, local residents of any race or ethnicity perceived greater disorder, even after controlling for the actual level of disorder shown in carefully analyzed video observations.[111] They concluded that "[s]eeing disorder appears to be imbued with social meanings that go well beyond what essentialist theories imply, generating self-reinforcing processes that may help account for the perpetuation of urban racial inequality."[112] In turn, both older studies[113] and newer studies[114] link police killings of Black civilians to the concentration of the Black population, suggesting that beyond stigmatized neighborhoods, social and political conflict between majority neighborhoods and minority neighborhoods elevates Black civilians' risk of lethal encounters with police.

A second mechanism is the self-reinforcing actions of the police through their tactical assignments and methods. Even after controlling for neighborhoods' actual crime rate, police disproportionately invoke the "high-crime neighborhood" label in predominantly minority neighborhoods, further reinforcing the crime-danger-risk metric.[115] Concentrated patrol activity in high-crime neighborhoods reinforces the message that these are dangerous places simply by the repetition of that label. And that label provides convenient shorthand not only to carry out patrols but also to use police discretion to take actions in those places—especially stops and misdemeanor arrests.

Police patrol Black and other nonwhite neighborhoods more intensively and are thus more likely to initiate contact with local residents once in those neighborhoods.[116] These contacts are characterized by harsher interactions—including potentially deadly force.[117] One study suggests that between 2007 and 2014, there were 61,000 more police uses of force against Black civilians than there would have been if force was used at the same rate as against white civilians.[118] Potentially deadly force, including but especially shootings, was used in 1800 extra cases.[119] These disparities are also observable when police

[111] *Id.* at 319.

[112] *Id.*

[113] Jacobs & O'Brien, *supra* note 35, at 857.

[114] Nix et al., *supra* note 34, at 328; Legewie & Fagan, *supra* note 33, at 28.

[115] Jeffrey Fagan & Amanda Geller, *Following the Script: Narratives of Suspicion in* Terry *Stops in Street Policing*, 82 U. CHI. L. REV. 51, 62 (2015); Ben Grunwald & Jeffrey Fagan, *The End of Intuition-Based High-Crime Areas*, 107 CALIF. L. REV. 345, 388-89 (2019) (showing that racial composition of area predicts whether officer will call it "high crime" regardless of local crime rate).

[116] EMMA PIERSON ET AL., STANFORD COMPUTATIONAL POLICY LAB, A LARGE-SCALE ANALYSIS OF RACIAL DISPARITIES IN POLICE STOPS ACROSS THE UNITED STATES 15 (2019), https://5harad.com/papers/traffic-stops.pdf [https://perma.cc/WMH9-X32P] (correlating patrol density in minority neighborhoods to racial disparity in police stops).

[117] *See, e.g.*, Rory Kramer & Brianna Remster, *Stop, Frisk, and Assault? Racial Disparities in Police Use of Force During Investigatory Stops*, 52 LAW & SOC'Y REV. 960, 982 (2018).

[118] *Id.* at 987.

[119] *Id.*

actions are conditional on 911 calls to police; arrests per call are greater in minority neighborhoods.[120]

Modern policing prioritizes police-initiated contact in places that are deemed "high risk."[121] That risk and race seem to be interchangeable in these analyses explains in part how "split-second" thinking, perceptions of danger and imminent threat, and vague regulatory standards can short-circuit reasonableness and place Black suspects at greater risk for lethal encounters with police.[122]

2. Race, Risk, and Threat

Stereotype threat provides a framework linking race and excessive force by police.[123] If lethal force by police is the result of split-second responses to perceived threats, then the sources of those perceptions are critical to explaining both particular instances and the wider patterns of race and police killings that we report in our data.[124] If stereotype threat is racialized, it is likely to increase the use of force by police toward Black and Latinx men in the course of routine police contacts.[125] Explaining the use of deadly force, then, requires understanding the sources of that threat and its association with race.

One explanation may be that implicit racial bias distorts racial anxiety, again short-circuiting split-second thinking toward the use of lethal force.[126] This works in two ways: First, the stereotype itself is racialized.[127] As Professor Jerome Skolnick first recognized in his fieldwork with police in the 1960s, police have connected race with the "symbolic assailant," an archetypal crime symbol.[128] Cooper argues that through affective style, challenges to authority, a

[120] Charles C. Lanfear, Lindsey R. Beach & Timothy A. Thomas, *Formal Social Control in Changing Neighborhoods: Racial Implications of Neighborhood Context on Reactive Policing*, 17 CITY & COMMUNITY 1075, 1089-90 (2018).

[121] Charles F. Manski & Daniel S. Nagin, *Assessing Benefits, Costs, and Disparate Racial Impacts of Confrontational Proactive Policing*, 114 PROC. NAT'L ACAD. SCI. 9308, 9310 (2017).

[122] Harmon, *supra* note 53, at 1169 n.233.

[123] Rick Trinkner, Erin M. Kerrison & Phillip Atiba Goff, *The Force of Fear: Police Stereotype Threat, Self-Legitimacy, and Support for Excessive Force*, 43 LAW & HUM. BEHAV. 421, 432 (2019) ("These results raise the possibility of a particularly vicious cycle of stereotype threat, police force, and public trust.").

[124] *See infra* Part IV (comparing victims of police shooting by race as against gender, age, and circumstance).

[125] Cooper, *supra* note 82, at 724-25.

[126] Richardson, *supra* note 109, at 79.

[127] Cooper, *supra* note 82, at 680-81.

[128] JEROME H. SKOLNICK, JUSTICE WITHOUT TRIAL: LAW ENFORCEMENT IN DEMOCRATIC SOCIETY 42 (Quid Pro Books 4th ed. 2011) (1966). *See generally* CTR. FOR RESEARCH ON CRIMINAL JUSTICE, THE IRON FIST AND THE VELVET GLOVE: AN ANALYSIS OF THE U.S. POLICE

sense of preservation of dignity and autonomy, and sensitivity to stigma and reputation, interactions between police and Black men can be fraught with tension and struggles for control, both for the civilian and for the police officer.[129] The elevated rate of police contacts with Black men[130] only serves to reinforce these stereotypes, since it narrows officers' knowledge and field of social vision to a thin slice of social networks.[131]

Second, following from the narrowed field of vision, these repeated contacts with Black and Latinx men contribute to interactions that can produce anxiety and fear and reinforce implicit biases that police may hold. Professor L. Song Richardson describes how implicit racial bias shapes judgments of suspicion leading to the predicate civilian stops that result in shootings and fatalities.[132] These interaction dynamics, influenced by implicit bias and anxiety on the one hand and by explicit bias on the other, contribute to the risks of excessive or lethal force by police. In experimental studies, the anxiety seems to delegitimize messages about police regulation and training on the use of force, and officers are more likely to default to excessive force to control threat, risk, and danger.[133] On the ground, these interactions can lead to what the Ninth Circuit in *Mendez v. County of Los Angeles*[134] referred to as a "mistaken assessment" of risk and threat resulting in the use of lethal force.[135]

II. REMEDIATION

Although the use of deadly force against a perceived threat may be justified under *Graham*, the threat to which the officer believes they are responding may be overstated in cases involving suspects experiencing mental illness and/or a mental health crisis. As a result, justifying the use of force when a police officer

(1975) (tracing history of modern professional police forces and describing mixture of force and pacification employed to maintain order).

[129] Cooper, *supra* note 82, at 674-76.

[130] Laurel Eckhouse, Everyday Risk: How the Distribution of Police Contact Produces Racial Disproportion in Police Shootings 12 (Apr. 15, 2018) (unpublished manuscript) (on file with author).

[131] Neil Hester & Kurt Gray, *For Black Men, Being Tall Increases Threat Stereotyping and Police Stops*, 115 PROC. NAT'L ACAD. SCI. 2711, 2713-14 (2018) (presenting evidence that racial stereotypes influence police to perceive groups of young Black men as more dangerous); *see* Jennifer A. Johnson et al., *Social Network Analysis: A Systematic Approach for Investigating*, FBI: L. ENFORCEMENT BULL. (Mar. 5, 2013), https://leb.fbi.gov/articles /featured-articles/social-network-analysis-a-systematic-approach-for-investigating [https://perma.cc/HF53-YV5T].

[132] Richardson, *supra* note 109, at 78; *see* Rachel D. Godsil & L. Song Richardson, *Racial Anxiety*, 102 IOWA L. REV. 2235, 2250 (2017).

[133] *See* Godsil & Richardson, *supra* note 132, at 2250.

[134] 897 F.3d 1067 (9th Cir. 2018).

[135] *Id.* at 1081; *see* Katherine Macfarlane, *Foreseeable Police Shootings*, 119 COLUM. L. REV. F. 283, 294 (2019).

reasonably believes that "the suspect poses an immediate threat to the safety of the officer[] or others" can launch an interaction between a police officer and a person in mental health crisis that quickly results in injury or death.[136]

Police officers often perceive a "mental health call" as inherently dangerous.[137] Most encounters between police officers and persons experiencing mental illness occur "with individuals suspected of committing low-level, misdemeanor crimes, or who are exhibiting nuisance behavior."[138] However, even these routine interactions involving low-level offenses can "quickly escalate to violence," as persons experiencing mental illness may be unable to comply with an officer's commands or may respond unpredictably.[139] Of the 990 persons shot and killed by the police in 2018, 209 (21.11%) were experiencing a mental health crisis at the time they were killed.[140] Thus, training officers to respond to or identify the symptoms of mental illness or mental health crisis is crucial to preventing these encounters from becoming fatal.[141]

A. *Training as Remediation*

In the past three decades, police departments throughout the country have adopted the Memphis CIT model to train officers on how to best navigate encounters involving persons with mental illness.[142] The Memphis CIT model mandates forty hours of training "for a select group of officers who volunteer to

[136] Graham v. Connor, 490 U.S. 386, 396 (1989).

[137] Bruce G. Link et al., *Public Conceptions of Mental Illness: Labels, Causes, Dangerousness, and Social Distance*, 89 AM. J. PUB. HEALTH 1328, 1332 (1999); Anthony J. O'Brien & Katey Thom, *Police Use of TASER Devices in Mental Health Emergencies: A Review*, 37 INT'L J.L. & PSYCHIATRY 420, 422 (2014).

[138] MELISSA REULAND, MATTHEW SCHWARZFELD & LAURA DRAPER, LAW ENFORCEMENT RESPONSES TO PEOPLE WITH MENTAL ILLNESSES: A GUIDE TO RESEARCH-INFORMED POLICY AND PRACTICE 5 (2009), https://csgjusticecenter.org/wp-content/uploads/2020/02/le-research.pdf [https://perma.cc/L228-DMVG].

[139] Hanna, *supra* note 71, at 237 (quoting Lucas, *supra* note 71); *see* FULLER ET AL., *supra* note 70, at 1 (finding that people with untreated mental illness are at much greater risk of death by police).

[140] *See* Campbell, *supra* note 37, at 350. Campbell generated these statistics using data from the *Washington Post Database*, *supra* note 18.

[141] *See, e.g.*, Harold Braswell, *Why Do Police Keep Seeing a Person's Disability as a Provocation?*, WASH. POST: POSTEVERYTHING (Aug. 25, 2014, 12:54 PM), https://www.washingtonpost.com/posteverything/wp/2014/08/25/people-with-mental-disabilities-get-the-worst-and-least-recognized-treatment-from-police/ (describing fatal police encounters in which deceased had committed minor crime and resisted arrest "largely [because of the deceased's] disability, which made it impossible for him to fully understand and comply with police requests," and in which police officers overreacted with fatal results).

[142] Watson & Fulambarker, *supra* note 37, at 73 ("The primary goals of the model are to increase safety in encounters, and when appropriate, to divert persons with mental illnesses from the criminal justice system to mental health treatment.").

become CIT officers."[143] The program trains officers on the signs and symptoms of mental illness, mental health treatment, co-occurring disorders, legal issues, and de-escalation techniques.[144] In turn, these training programs "sensitize officers to understand that noncompliance or resistance by a citizen is not reflective of a lack of respect for the police or predictive of violence, while also increasing empathy for persons suffering from mental illness and their caregivers."[145] CIT training has generally been successful in reducing the use of force against individuals experiencing mental illness and reducing the risk of injury both to the officer and to the individual experiencing mental illness.[146]

Training police officers on the signs and symptoms of mental illness has become increasingly important as police officers have become the go-to first responders to incidents involving persons experiencing mental health crises. As mental health institutions were systematically closed after the 1950s, incarceration rates of persons experiencing mental illness have correspondingly increased.[147] Today, family members and neighbors increasingly ask police officers to respond to incidents involving persons experiencing mental health crises.[148] In fact, although the precise number is unknown, mental health advocates and police estimate that about 10% of calls received by police departments involve individuals with mental illness.[149]

Given the prevalence (and potential consequences) of encounters between police officers and persons experiencing either mental illness or a mental health crisis, CIT training programs have been implemented by more than 2000 police departments in over forty states.[150] And of the 3142 counties and county equivalents in the United States, 25.91% have implemented CIT training

[143] *Id.*

[144] *Id.* at 71.

[145] Michael T. Rossler & William Terrill, *Mental Illness*, *Police Use of Force, and Citizen Injury*, 20 POLICE Q. 189, 206 (2017).

[146] Sonya Hanafi et al., *Incorporating Crisis Intervention Team (CIT) Knowledge and Skills into the Daily Work of Police Officers: A Focus Group Study*, 44 COMMUNITY MENTAL HEALTH J. 427, 432 (2008).

[147] *See generally* Bernard E. Harcourt, *Reducing Mass Incarceration: Lessons from the Deinstitutionalization of Mental Hospitals in the 1960s*, 9 OHIO ST. J. CRIM. L. 53 (2011) (arguing that source of recurring demands on police to be first responders to mental health crises can be traced to deinstitutionalization of the mentally ill in 1960s).

[148] Fernanda Santos & Erica Goode, *Police Confront Rising Number of Mentally Ill*, N.Y. TIMES, Apr. 2, 2014, at A1.

[149] *When Cop Calls Involve the Mentally Ill, Training Is Key*, NPR: ALL THINGS CONSIDERED (June 14, 2014, 5:03 PM), https://www.npr.org/2014/06/14/322008371/when-cop-calls-involve-the-mentally-ill-training-is-key [http://perma.cc/449A-JRGH].

[150] *CIT Overview*, CIT, http://www.gocit.org/crisis-intervention-team-history.html [https://perma.cc/NCK2-ABTC] (last visited Apr. 20, 2020).

programs.[151] However, even in municipalities with CIT training programs, successful implementation of the programs may be inhibited by "system- and policy-level obstacles."[152] Police departments may struggle to maintain training for police dispatchers, lack psychiatric facilities to assist officers, or face other unique challenges to implementing the programs in rural settings.[153]

B. *Reasonableness Under the ADA*

Statutes like the Americans with Disabilities Act ("ADA") aim to protect persons experiencing qualifying disabilities (including mental illness) from discriminatory treatment, including by police.[154] The U.S. Department of Justice ("DOJ") interprets Title II of the ADA to require law enforcement agencies "to make reasonable modifications in their policies, practices and procedures that are necessary to ensure accessibility for individuals with disabilities."[155] The DOJ recommends that police officers should be "trained to distinguish behaviors that pose a real risk from behaviors that do not, and to recognize when an individual, such as someone who is . . . exhibiting signs of psychotic crisis, needs medical attention."[156]

But that is as far as the DOJ has gone in setting standards or requirements. It has not established a national training program or national guidelines on providing reasonable accommodations to persons experiencing mental illness.[157] The closest thing to a national training program is the Memphis CIT model. The

[151] We independently generated this data using county totals from the U.S. Census, *see* Press Release, U.S. Census Bureau, Five-Year Trends Available for Median Household Income, Poverty Rates and Computer and Internet Use (Dec. 6, 2018), https://www.census.gov/newsroom/press-releases/2018/2013-2017-acs-5year.html [https://perma.cc/T6AP-C7VR], and counts available from the University of Memphis CIT Center, *see United States of America*, U. MEM. CIT CTR., http://cit.memphis.edu/citmap/index.php [https://perma.cc/48VR-LZHB] (last visited Apr. 20, 2020).

[152] Michael T. Compton et al., *System- and Policy-Level Challenges to Full Implementation of the Crisis Intervention Team (CIT) Model*, 10 J. POLICE CRISIS NEGOT. 72, 72 (2010).

[153] *Id.* at 80-81.

[154] 42 U.S.C. § 12101(b) (2018).

[155] DISABILITY RIGHTS SECTION, U.S. DOJ, COMMONLY ASKED QUESTIONS ABOUT THE AMERICANS WITH DISABILITIES ACT AND LAW ENFORCEMENT 9 (2006), https://www.ada.gov/qanda_law.pdf [https://perma.cc/U4PG-5NGJ].

[156] *Id.* at 3.

[157] *Cf. id.* For an essay "addressing [the] lack of [a] federalized directive to train officers to respond to persons experiencing mental illness and proposing consolidation and nationalization of these training programs," Campbell, *supra* note 37, at 332 n.100, see generally David A. Maas, Essay, *Expecting the Unreasonable: Why a Specific Request Requirement for ADA Title II Discrimination Claims Fails to Protect Those Who Cannot Request Reasonable Accommodations*, 5 HARV. L. & POL'Y REV. 217, 224 (2011).

model has become the "gold standard"[158] for training officers on how to appropriately respond in the line of duty to persons experiencing mental illness, and its adoption has been recommended to police departments that struggle with high incidences of violence against persons experiencing mental illness.[159]

However, courts have not interpreted Title II to require police departments to provide CIT training to their officers.[160] In fact, courts have found that Title II does not require that CIT-trained officers be dispatched to respond to mental health calls. For example, in *Hamilton ex rel. J.H. v. City of Fort Wayne*,[161] a federal district court rejected a plaintiff's argument that Title II required CIT-trained officers to respond to the plaintiff's 911 call requesting officer assistance for her son.[162] The court held that waiting for a CIT-trained officer "would potentially implicate other safety concerns that might have been avoided by the efforts of officers already on the scene."[163] Thus, the "overriding public safety concerns rendered the accommodation of prioritizing the arrival of a different officer unreasonable."[164] Title II of the ADA's reasonable accommodations provision therefore neither requires CIT training for officers nor requires police departments to ensure that CIT-trained officers respond to calls involving persons with mental illness.

It is this tension between the DOJ's recommendations and the lack of a federal mandate for police accommodations through training that creates the conditions

[158] Amy C. Watson, Michael T. Compton & Jeffrey N. Draine, *The Crisis Intervention Team (CIT) Model: An Evidence-Based Policing Practice?*, 35 BEHAV. SCI. & L. 431, 432 (2017); *see* CIT INT'L, MENTAL HEALTH FIRST AID OR CIT: WHAT SHOULD LAW ENFORCEMENT DO? 1 (2016), https://www.mentalhealthfirstaid.org/cs/wp-content/uploads/2016/01/FINAL-MHFA-CIT-White-Paper-Annoucement.pdf [https://perma.cc/3SP5-NRWR].

[159] *See, e.g.*, Letter from Thomas E. Perez, Assistant Att'y Gen., U.S. DOJ Civil Rights Div., to Sam Abrams, Mayor, City of Portland (Sept. 12, 2012), https://www.portlandoregon.gov/police/article/469399 [https://perma.cc/V7J7-LRLJ] (suggesting that Portland should begin to provide CIT training to its officers).

[160] For example, the Fifth Circuit held in *Hainze v. Richards*, 207 F.3d 795 (5th Cir. 2000), that the presence of exigent circumstances makes Title II inapplicable to arrests. *Id.* at 801. The Eleventh Circuit, however, has noted that the presence of exigent circumstances is important to a court's determination of what, if any, accommodations are reasonable under Title II. *See* Bircoll v. Miami-Dade County, 480 F.3d 1072, 1085 (11th Cir. 2007). In *Sheehan v. City of San Francisco*, 743 F.3d 1211 (9th Cir. 2014), *cert. dismissed as improvidently granted*, 575 U.S. 600 (2015), the Ninth Circuit held that Title II applies to arrests but did not go so far as to hold that CIT training was required under Title II. *Id.* at 1217.

[161] No. 1:16-cv-00132, 2017 WL 5467038 (N.D. Ind. Nov. 13, 2017).

[162] *Id.* at *5 ("When responding to an emergency request for assistance, a policy of waiting for an officer designated as the CIT officer would potentially implicate other safety concerns that might have been avoided by the efforts of officers already on the scene."); *see Hainze*, 207 F.3d at 801 (rejecting plaintiff's failure-to-train claim under Title II).

[163] *Hamilton ex rel. J.H.*, 2017 WL 5467038, at *5.

[164] *Id.*

for a quasi-experiment to test whether such accommodations can remediate the pattern of killings by police of persons with mental illness or in mental health crisis (such as Shaheed Vassell and Dwayne Jeune). Having identified standards for training and observing the decisions of some law enforcement agencies to train on those standards, we could develop an experiment to test the potential efficacy of this standard-based training. This quasi-experiment further queries whether such training has spillover effects that could remediate the pattern of police officers perceiving other situations and populations, including and especially minority populations, to be dangerous.

III. METHODS

A. *Design*

Empirical scholarship has focused on competing and complementary theories to explain both the incidence of police shootings and their social and demographic patterns. Racial disparities in shootings have been the focus of research and have generated both contradictory results and considerable controversy. This study adds to the growing evidence of the racial dimensions of police shootings by incorporating constitutional and jurisprudential considerations of the reasonableness of police shootings. The empirical and recent jurisprudential scholarship on police shootings leads us to explore three questions about the incidence and circumstances of fatal police shootings.

First, we identify a set of circumstantial dimensions of police shootings that are recurring themes in constitutional law and map them onto several dimensions of "reasonableness" that proscribe police use of force and deadly force. As we noted earlier, much has changed in the landscape of legal and constitutional regulation of police use of deadly force since the early studies dating back five decades. This project reframes recent patterns of police killings to identify those categories that are defined by case law. We decompose patterns of police shootings into these categories. We then compare the incidence of police shootings that occurred under the conditions that have been found to be "reasonable" in case law with police shootings that fall outside those dimensions. In other words, within the limits of available evidence, we estimate the number of police shootings that appear to be ex ante reasonable or unreasonable.

Next, we identify the racial disparities in shootings within each of these categories. Beginning with David Jacobs and David Britt, researchers have sought to identify and explain racial disparities.[165] More recent work on race and suspicion in everyday police-citizen encounters, including those that vary in the

[165] *See* Jacobs & Britt, *supra* note 35, at 410 ("But the results also show that even after [a violent populace] and [other factors] are controlled, the degree of inequality in the distribution of economic resources and economic power still predicts the use of lethal force by the police.").

use of force, suggests that perceptions of risk—and, in turn, of reasonableness—in those encounters may vary by race.[166] Recent, highly publicized killings of unarmed persons or persons in mental health crisis—often but hardly exclusively nonwhites—have redirected attention to the intersection of race and reasonableness.[167] The analysis for this question links the patterns of police killings by race to categories of reasonableness in order to discern whether the thresholds of reasonableness and threat vary by victim race.

The third question is the potentially mitigating or prophylactic effects of police training on crisis intervention to reduce the incidence of police shootings. We test whether the presence of CIT training programs reduces the incidence of fatal police shootings of persons in mental health crisis[168] by encouraging officers to shift from high-lethality methods of force to low-lethality methods of

[166] *See* Geoffrey P. Alpert, John M. MacDonald & Roger G. Dunham, *Police Suspicion and Discretionary Decision Making During Citizen Stops*, 43 CRIMINOLOGY 407, 422-23 (2005) (showing that whether suspect is Black influences officers' decisions to form suspicion based on nonbehavioral cues versus behavioral cues); Adam M. Samaha, *Regulation for the Sake of Appearance*, 125 HARV. L. REV. 1563, 1620-34 (2012) (describing New York City's stop-and-frisk regime as appearance-based regulation based on perceptions of disorderly places or people); Sampson & Raudenbush, *supra* note 108, at 330-34 (showing empirically that perception of disorder in neighborhoods is correlated not only with observation of disorder but also with racial composition of neighborhood); Robert J. Sampson, Response, *When Things Aren't What They Seem: Context and Cognition in Appearance-Based Regulation*, 125 HARV. L. REV. F. 97, 100 (2012) ("Race is particularly salient—whites see disorder as more of a problem than blacks, Latinos, and Asians, even when living in the same environment.").

[167] Carbado, *supra* note 29, at 150 (arguing that Fourth Amendment reasonableness doctrine makes ordinary police traffic stops of Black individuals in America a "gateway to extraordinary police violence"); Shawn E. Fields, *Weaponized Racial Fear*, 93 TUL. L. REV. 931, 935 (2019) ("In particular, [this Article] considers how bias-motivated civilians weaponize law enforcement to respond to their irrational racial fears through misuse and abuse of 911 and other emergency response systems."); Tracey Maclin, *Race and the Fourth Amendment*, 51 VAND. L. REV. 331, 333 (1998) ("In America, police targeting of black people for excessive and disproportionate search and seizure is a practice older than the Republic itself."); Daniel P. Mears et al., *Thinking Fast, Not Slow: How Cognitive Biases May Contribute to Racial Disparities in the Use of Force in Police-Citizen Encounters*, 53 J. CRIM. JUST. 12, 17 (2017) ("To date, however, race has featured most prominently in affecting police decisionmaking or as a factor thought to influence it. In particular, Blacks are likely to be viewed as criminal, and criminals are assumed to be Black."); Jon M. Shane, Brian Lawton & Zoë Swenson, *The Prevalence of Fatal Police Shootings by U.S. Police, 2015-2016: Patterns and Answers from a New Data Set*, 52 J. CRIM. JUST. 101, 106 (2017) (failing to draw conclusion about whether Blacks being killed at higher rates by police officers stems from racial bias or other factors).

[168] Jennifer Skeem & Lynne Bibeau, *How Does Violence Potential Relate to Crisis Intervention Team Responses to Emergencies?*, 59 PSYCHIATRIC SERVICES 201, 204 (2008) (finding that CIT-trained officers used force in only 15% of high-risk-of-violence encounters with persons experiencing mental illness).

force.[169] In addition to testing the effects of CIT training on incidents involving people in mental health crises, we also examine whether there may be spillover effects to police-civilian encounters beyond persons in mental health crisis. Police departments across the country vary in their implementations of CIT training.[170] This variation allows us to test the effects of remediation by categories of reasonableness and to identify racial differences in any remediation effects.

B. *Variables and Data*

1. Fatal Police Shootings

We compiled fatal police shootings from the *Washington Post*'s database.[171] The *Washington Post* created the database in 2015 when the newspaper began tracking information about fatal police encounters, including but not limited to (a) the race of the deceased, (b) the age of the deceased, (c) the location of the shooting, (d) whether the person was armed or unarmed,[172] and (e) whether the person was experiencing a mental health crisis at the time of the shooting.[173] The database includes records of 3933 fatal police shootings in the United States between 2015 and 2018.[174]

[169] *Id.* (studying extent to which CIT met its goal of protecting subjects' safety).

[170] Campbell, *supra* note 37, at 327.

[171] *Washington Post Database*, *supra* note 18; *see* Julie Tate et al., *How the* Washington Post *Is Examining Police Shootings in the United States*, WASH. POST (July 7, 2016), https://www.washingtonpost.com/national/how-the-washington-post-is-examining-police-shootings-in-the-united-states/2016/07/07/d9c52238-43ad-11e6-8856-f26de2537a9d_story.html.

[172] Campbell, *supra* note 37, at 342 n.157 ("When considering whether an individual was armed, the database presents three possible categories: armed, unarmed, and undetermined. Individuals in the armed category possessed one (or multiple) of the following weapons: a gun, toy weapon, nail gun, knife, shovel, hammer, hatchet, sword, machete, box cutter, metal object, metal pole, metal pipe, screwdriver, lawn mower blade, flagpole, cordless drill, taser, blunt object, sharp object, meat cleaver, carjack, chain, contractor's level, unknown weapon, stapler, crossbow, baseball bat, bean-bag gun, fireplace poker, straight edged razor, brick, hand torch, chainsaw, garden tool, scissors, flashlight, spear, pitchfork, rock, piece of wood, bayonet, glass shard, motorcycle, vehicle, pepper spray, rake, baton, pellet gun, BB gun, pick-axe, bow and arrow, crowbar, beer bottle, fireworks, pen, chainsaw, an incendiary device, an air conditioner, an axe, or explosives. Persons who claim to be armed are categorized as armed for the purposes of the database as well as this paper." (citing *Washington Post Database*, *supra* note 18)).

[173] *Id.*

[174] Duplicate records in the *Washington Post* database were eliminated. *See infra* app. A (identifying incorrectly coded records).

The database integrates local news reports, law enforcement websites, and social media monitoring of databases like *Killed by Police*[175] and *Fatal Encounters*[176] in order to supplement the data collected.[177] Given the limits of the database, the data only describe shootings in which a police officer, in the line of duty, shot and killed a civilian.[178] Deaths of persons in police custody, fatal shootings by off-duty police officers, and non-shooting deaths of civilians are excluded.[179] Although the database records the city and state where the shooting took place, it does not record the individual county. Because local police departments are frequently subject to oversight and funding by county courts and governments as well as by city governments, each case was assigned to the individual county in which it occurred using data collected by *Fatal Encounters*.[180]

While the *Washington Post* database reports the race of the decedent, some decedents were missing a racial identifier. To determine the race or ethnicity of those decedents, we applied a verified and commonly used method that assigns the probability of a person being a particular race or ethnicity using census data.[181] The U.S. Census Bureau used self-reported race or ethnicity data to compile a list of over 160,000 surnames occurring 100 or more times from the 2010 Census. Combining these names with the self-reports of race and ethnicity, the Census Bureau computed the probability of a person living in the United States with that name being white, Asian, Black, Latinx, or Native American or Pacific Islander. For each of these racial or ethnic groups, we coded the classifications at three levels of probability: 60%, 75%, and 90%. Persons whose names did not meet the 60% threshold for any of the population groups were coded as missing on the race or ethnicity variable. Accordingly, our main estimates of race and ethnicity effects for decedents used the 60% classification threshold. This method was applied and accepted to identify Latinx ethnicity in

[175] *Police Shootings Database*, KILLED BY POLICE, http://killedbypolice.net [https://perma.cc/GAH7-JLGN] (last updated Apr. 6, 2020).

[176] FATAL ENCOUNTERS, https://www.fatalencounters.org [https://perma.cc/BPZ6-TQVJ] (last visited Apr. 20, 2020) (creating a database of all deaths through police interaction since January 1, 2000).

[177] *Washington Post Database*, *supra* note 18.

[178] Tate et al., *supra* note 171.

[179] *Id.*

[180] We matched the cases listed in the *Washington Post* database to their corresponding entries in the *Fatal Encounters* database to assign each decedent to the county in which they were killed. One of us (Campbell) noticed and corrected a series of errors in the *Washington Post* database regarding the states wherein certain individuals in the database were shot. *See infra* app. A. We corrected the data to ensure the accuracy of the coding.

[181] The current analysis used the 2010 Census surname list B, a list that contains all surnames appearing at least 100 times. *See Frequently Occurring Surnames from the Census 2010*, U.S. CENSUS BUREAU, https://www.census.gov/topics/population/genealogy/data/2010_surnames.html [https://perma.cc/Q2V6-A6M4] (last updated Dec. 27, 2016).

a 2013 lawsuit alleging racial discrimination (and therefore a Fourteenth Amendment Equal Protection Clause violation) in the U.S. District Court for the District of Arizona.[182]

Table 1 shows that the number of shootings per year changed little from 2015 to 2018. Of the 3933 shootings that the *Washington Post* recorded for this period, 949 (24.13%) of the victims were reported as experiencing a mental health crisis when they were shot.[183] The remaining 2984 people (75.87%) were not reported as experiencing a mental health crisis when they were shot but may have been either armed or posing a serious threat to the officer or other civilians.[184] However, some of those experiencing a mental health crisis were also armed. Unarmed persons represented 7% of the 2984 persons who were not experiencing a mental health crisis when they were shot. Accordingly, the analysis sample for the study is 3544 civilian deaths in the United States, from 2015 to 2018, compiled in the *Washington Post* database of fatal police shootings.

TABLE 1. NUMBER OF POLICE KILLINGS BY MENTAL HEALTH AND ARMED STATUS OF THE VICTIM AT THE TIME OF DEATH.

Year	**Persons Not in Mental Health Crisis**		**Total Persons Not in Mental Health Crisis**	**Persons in Mental Health Crisis**		**Total Persons in Mental Health Crisis**	**Total**
	Armed	*Unarmed*		*Armed*	*Unarmed*		
2015	591	73	664	226	21	247	911
2016	563	43	606	225	8	233	839
2017	594	57	651	212	12	224	875
2018	675	36	711	197	11	208	919
Total	2423	209	2632	860	52	912	3544

Notes: 389 of the 3933 persons in the *Washington Post*'s database were either listed as "Undetermined" or their Armed Status was omitted. They were excluded from this table.

2. Remediation: Title II Status and CIT Training

Prior research has suggested that the presence of CIT training programs makes encounters safer for both officers and persons experiencing mental

[182] *See* Melendres v. Arpaio, 989 F. Supp. 2d 822, 873 n.69 (D. Ariz. 2013) ("Dr. Taylor's statistics in this respect were, apparently, more sophisticated than those provided in the 1980 census list of Spanish surnames."), *aff'd*, 784 F.3d 1254 (9th Cir. 2015).

[183] *Washington Post Database*, *supra* note 18.

[184] *Id.*

illness.[185] Using data provided by the University of Memphis CIT Center, we determined whether a given county had an existing CIT training program.[186] We also estimated the saturation of CIT training in the states by calculating the percentage of counties in each state that had one or more existing CIT training programs.[187]

3. Mental Health and Risk Status

The case-level information in the *Washington Post* database includes classifications that describe the behavior and mental health status of the victims. We sorted these into four categories to assess risk posed to officers based on when the victim was shot: (1) unarmed individuals who were experiencing a mental health crisis ("Mental Health Crisis"),[188] (2) armed individuals who were not experiencing a mental health crisis ("Armed"),[189] (3) armed individuals who were experiencing a mental health crisis ("Both"), and (4) individuals who were neither armed nor experiencing a mental health crisis ("Neither").[190] We used

[185] Hanafi et al., *supra* note 146, at 427 ("In addition to improving patient and officer safety, a critical goal of CIT training is to increase the likelihood that people in crisis, especially those with serious mental illnesses, will receive treatment rather than incarceration.").

[186] Campbell, *supra* note 37, at 368 app. I. The difficulty of accurate and timely reporting to a centralized database suggests that the counts of counties and agencies implementing CIT training are conservative estimates of the number of CIT training programs in each state. One of us independently generated data on uptake of CIT training programs using county population totals from the 2013-2017 American Community Survey five-year estimates, *see* Press Release, U.S. Census Bureau, *supra* note 151, and counts of CIT training programs available from the University of Memphis CIT Center, *see United States of America*, *supra* note 151. *See* Campbell, *supra* note 37, at 326 n.64.

[187] Campbell, *supra* note 37, at 368 app. I.

[188] *Id.* at 342 n.158 ("The *Washington Post*'s database classifies a person as exhibiting signs of mental illness if either the police officers called to the scene or the family members later describe the person as experiencing mental illness. Instances where a person is exhibiting signs of mental illness include, but are not limited to, instances where a person is suicidal, or when a person is in the midst of a manic-depressive episode. Because an individual's mental health status is generated via police or family member reports, it is possible that [a mentally ill individual's status] could go unreported [in the database]. This sample therefore represents a conservative estimate of the number of persons in mental health crisis during a fatal encounter with the police.").

[189] *See supra* note 172.

[190] Campbell, *supra* note 37, at 347.

the measures developed in the *Washington Post* database to assess (1) evidence of suspect threat[191] and (2) flight during the incident.[192]

4. Police Officer Deaths

We obtained data on annual police officer deaths by county from the Law Enforcement Officers Killed and Assaulted ("LEOKA") database, compiled annually by the DOJ.[193] We aggregated data on officer deaths and assigned each death to the county where it occurred.[194] The data only includes officers feloniously killed in the line of duty.

5. Crime

We recorded counts of UCR Part I violent felony crimes from the FBI's Uniform Crime Reporting archives and compiled the crimes using a data analysis tool accessible through a Bureau of Justice Statistics website.[195] We estimated rates per 100,000 persons using estimates from the U.S. Census Bureau Population Estimate Program as the population benchmark.[196]

[191] The *Washington Post* database estimated the *threat* level for each case based on reporting of incidents by Amy Brittain in October 2015. *See* Amy Brittain, *Deadly Consequences While on Duty and Under Fire*, WASH. POST, Oct. 25, 2015, at A1 (reporting on fatal police shootings in Wisconsin). As described by Brittain, the general criteria for a classification of "attack" within the threat category was a direct and immediate threat to life. Incidents in which officers or others were shot at, threatened with a gun, attacked with other weapons or physical force, etc., were classified within threat as attack level. Other threats included any behavior that posed a significant threat to officers or civilians.

[192] An incident in which the suspect is moving away from officers is classified as *flight*. *See Washington Post Database*, *supra* note 18. However, neither attack nor threat are necessarily related to flight. Flight may occur in conjunction with threat, as in the case of a fleeing suspect turning to fire a gun at an officer. *See* Brittain, *supra* note 191, at A1. Also, attacks represent a status immediately before fatal shots by police, while flight could begin slightly earlier and involve a chase. *See* Tate et al., *supra* note 171.

[193] *See generally* FBI, U.S. DOJ, UNIFORM CRIME REPORTING PROGRAM DATA: POLICE EMPLOYEE (LEOKA) DATA, 2015 (2017), https://www.icpsr.umich.edu/icpsrweb/NACJD/studies/36791 [https://perma.cc/QZ64-CHSN].

[194] Using the event descriptions (including state and date of death) contained in the LEOKA database for officers feloniously killed in action from 2015 to 2018, Campbell determined the number of deaths per county by matching each described death to the corresponding death contained on the Officer Down Memorial Page. *See* OFFICER DOWN MEMORIAL PAGE, https://www.odmp.org [https://perma.cc/8LP2-E8Z4] (last visited Apr. 20, 2020) (providing searchable database of officers killed in line of duty).

[195] FBI, U.S. DOJ, *supra* note 193.

[196] *Population and Housing Estimates*, U.S. CENSUS BUREAU, https://www.census.gov/programs-surveys/popest.html [https://perma.cc/652X-BD4S] (last visited Apr. 20, 2020).

6. Social and Demographic Conditions

We collected measures of racial and ethnic composition, poverty, inequality, gender, and age composition for each county from Social Explorer.[197] For this analysis, we compiled demographic and economic data using the American Community Survey's 2014-2018 five-year estimates, which Social Explorer imported from the U.S. Census Bureau.[198] Measures include age composition, racial and ethnic composition, foreign-born population, and Gini coefficients to estimate social and economic inequality within counties.

C. *Estimation*

We estimated all statistical models as Poisson regressions with standard errors clustered on counties to allow for unmeasured variation and correlation within them.[199] Poisson regressions are well suited to estimate the effects of independent variables on the counts or frequency of events.[200] These models provide robust estimators of the likelihood of an event—be it of hurricanes forming in the ocean, automobiles crashing, or homicides being committed—given a set of conditions such as temperature, population composition, speed limits, or economic inequality.[201] This class of regressions is well suited for distributions that are dispersed or even overdispersed.[202]

The model takes the form:

$$Y_{b,i,t} = \mu_i + \lambda_{p,t} + \beta_1 D_{i,p,t} + \beta_2 P_i + \beta_3 S_i + \beta_4 X_i + \varepsilon_{i,p,t}$$

[197] SOC. EXPLORER, https://www.socialexplorer.com/ [https://perma.cc/V44D-HKYA] (last visited Apr. 20, 2020). Social Explorer is a subscription service available to faculty and students at participating universities and research institutes. The service aggregates data on demography, economy, health, politics, and housing from several sources. In addition to generating customized tables, Social Explorer also generates visualizations for combinations of variables. Data are available for units of analysis from states, counties, census tracts, and census blocks. *See id.*

[198] *See American Community Survey*, U.S. CENSUS BUREAU, https://www.census.gov/programs-surveys/acs [https://perma.cc/553K-D4NA] (last visited Apr. 20, 2020); *Product Data*, SOC. EXPLORER, https://www.socialexplorer.com/product-data [https://perma.cc/FFJ6-B9T9] (last visited Apr. 20, 2020).

[199] *See generally* Richard Berk & John M. MacDonald, *Overdispersion and Poisson Regression*, 24 J. QUANTITATIVE CRIMINOLOGY 269 (2008).

[200] *See generally* WILLIAM H. GREENE, ECONOMETRIC ANALYSIS (8th ed. 2018) (2008); Yiwen Zhang et al., *Regression Models for Multivariate Count Data*, 26 J. COMPUTATIONAL & GRAPHICAL STAT. 1 (2017).

[201] *See* DAVID J. SPIEGELHALTER, THE ART OF STATISTICS: HOW TO LEARN FROM DATA 270-71 (2019) (finding that null hypothesis of Poisson distribution was not "precisely true" but is "reasonable" to use as assumption for assessing changes in homicide rates).

[202] *See* Berk & MacDonald, *supra* note 199, at 283 (arguing that Poisson distribution was generally better than alternative—a negative binomial distribution proposed by some scholars as way to correct overdispersions).

where $Y_{b,i,t}$ is the number of police killings in state *b* and county *i* in year *t*. $D_{i,p,t}$ measures the number of officers killed in the line of duty in each year in each county and state, P_i is the number of police officers in county *i*, and S_i is the violent-crime victimization rate in county *i*. *X* is a vector of control variables, including age and race composition, foreign-born population, and economic inequality in each county.

For each model, the exposure variable is the total county population, which effectively converts the predictors to population rates. Standard errors are clustered by county to account for unmeasured variation and correlation within the counties. We include fixed effects for year *t* to control for unobserved factors that might influence annual variations in the number of police killings. We estimate these models for killings within each category of reasonableness as well as for total police killings.

Next, we estimate a multinomial logit regression to identify the characteristics of victims and county demographic conditions that predict membership in each of the discrete categories of *reasonableness*. Multinomial logit regression is a form of multigroup classification for data sets with shared group characteristics across cases.[203] In this case, the categories are a polychotomous dependent variable composed of groups that have no natural ordering and that are constructed to be independent. The model takes the form

$$\Pr(y = j) = \frac{e^{\beta_j x}}{1+\sum_{k=1}^{J-1} e^{\beta_k x}} \text{ for } j = 1, 2, \ldots, J - 1$$

and

$$\Pr(y = j) = \frac{1}{1 + \sum_{k=1}^{J-1} e^{\ k x}}$$

where there are *J* categories and *J* (the last group) is the reference category. The reference category is the basis for determining which factors are statistically significant predictors of group membership compared to that group. In this case, we identify the Both group (armed and in mental health crisis) as the reference category since it is the group with the greatest density of risk for police officers. The other groups are Armed, Mental Health Crisis, and Neither. The coefficients show the probability that factor *x* is a significant predictor of membership in each category compared to the reference category. We report the results as exponentiated coefficients or Relative Risk Ratios ("RRRs") to show the odds

[203] DAVID W. HOSMER, JR., STANLEY LEMESHOW & RODNEY X. STURDIVANT, APPLIED LOGISTIC REGRESSION 269 (3d ed. 2013) (2004). *See generally* Anass Bayaga, *Multinomial Logistic Regression: Usage and Application in Risk Analysis*, 5 J. APPLIED QUANTITATIVE METHODS 288 (2010); Chanyeong Kwak & Alan Clayton-Matthews, *Multinomial Logistic Regression*, 51 NURSING RES. 404 (2002).

that a unit increase in a predictor increases the odds of an individual belonging to that group compared to the reference group.

Finally, we estimate another set of Poisson regressions, including measures of CIT training within counties, as a test of the potential for remediation of the police killings. These models compare the rate of police killings in counties with and without the "treatment" of CIT training. This method first decomposes the effects of the predictors on the self-selection by a county to implement CIT training, recognizing that observable characteristics that can explain why a county adopts the program may also explain the rates of police killings. The second stage then uses the adjusted measure of CIT training to estimate the effects of training on police killings after controlling for reasons why a county may have adopted the program. These models are termed "doubly robust estimation" regressions.[204] The model applies Augmented Inverse Probability Weighting ("AIPW") to estimate first a predictor of the presence of CIT training (the treatment) in a county adjusted for the same set of self-selection predictors and then the effects of the adjusted treatment variable on the number of police killings in a county. The estimates are shown as "average treatment effects" ("ATEs").[205]

The dependent variables are the same set of police killings disaggregated by reasonableness category. We use the same set of predictors in both the first- and second-stage models. Results show the difference in police killings by reasonableness category and the race or ethnicity of the person killed.

IV. RESULTS

A. *Descriptive Statistics*

1. Race, Age, and Gender

The analysis sample for the study is 3757 police-involved fatalities. Due to missing data on names, race, ethnicity, or the circumstances of the killing, 161 cases from Table 1 were excluded from this analysis.

Table 2 shows that about one in four (25.2%) police-involved fatalities were Black, while just over half (51.9%) were white. Just under one in five (18.7%) were Latinx, and there were small percentages of Asians, Pacific Islanders, Native Americans, and Others (together 4.3%).

[204] *See generally* Heejung Bang & James M. Robins, *Doubly Robust Estimation in Missing Data and Causal Inference Models*, 61 BIOMETRICS 962 (2005); Greg Ridgeway & John M. MacDonald, *Doubly Robust Internal Benchmarking and False Discovery Rates for Detecting Racial Bias in Police Stops*, 104 J. AM. STAT. ASS'N 661 (2009).

[205] *See* Alberto Abadie et al., *Implementing Matching Estimators for Average Treatment Effects in Stata*, 4 STATA J. 290, 291-92 (2003). *See generally* Alberto Abadie & Guido W. Imbens, *Large Sample Properties of Matching Estimators for Average Treatment Effects*, 74 ECONOMETRICA 235 (2006); Keisuke Hirano, Guido W. Imbens & Geert Ridder, *Efficient Estimation of Average Treatment Effects Using the Estimated Propensity Score*, 71 ECONOMETRICA 1161 (2003).

TABLE 2. DEMOGRAPHIC AND SITUATIONAL CHARACTERISTICS BY VICTIM RACE OR ETHNICITY (N, %).

	Black	White	Latinx	Asian/ NA/ PI/Other	Total
Police Killings	945	1948	701	163	3757
	(25.2)	(51.9)	(18.7)	(4.3)	(100)
Female	40	103	18	11	172
	(23.3)	(59.9)	(10.5)	(6.4)	(100)
Age					
Under 16	6	6	4	2	18
	(33.3)	(33.3)	(22.2)	(11.1)	(100)
16-24	248	217	152	28	645
	(38.4)	(33.6)	(23.6)	(4.3)	(100)
25-35	373	598	269	72	1312
	(28.5)	(45.6)	(20.5)	(5.5)	(100)
36-50	237	658	204	45	1144
	(20.7)	(57.5)	(17.8)	(3.9)	(100)
51-65	55	364	42	14	475
	(11.6)	(76.6)	(8.8)	(2.9)	(100)
Over 65	11	89	11	0.0	111
	(9.9)	(80.2)	(9.9)	(.0)	(100)
Interaction					
Flight	327	494	216	41	1078
	(30.3)	(45.8)	(20.0)	(3.8)	(100)
Suspect Attack	622	1269	391	92	2374
	(26.2)	(53.5)	(16.5)	(3.9)	(100)
Circumstance					
Armed Only	630	1128	450	104	2312
	(27.3)	(48.8)	(19.5)	(4.5)	(100)
Mental Health	19	24	6	3	52
Crisis Only	(2.2)	(2.8)	(0.7)	(0.3)	(100)
Both	122	540	122	36	820
	(14.9)	(65.9)	(14.9)	(4.4)	(100)
Neither	77	85	41	6	209
	(37.9)	(41.9)	(20.2)	(3.0)	(100)

Notes: N=9389 County-year observations. Totals exclude 161 deaths with no name, race, or other demographic information. All race and ethnicity classifications are based on the coding done by the *Washington Post*'s database as supplemented by the 60% name-matching probability estimates described in Part III *infra*.

There was an inverse pattern of age by race or ethnicity. Victims aged between sixteen and twenty-four were most likely to be Black, while victims were most likely to be white in each older age range. These differences are quite large. For example, three in four (76.6%) victims aged between fifty-one and sixty-five were white. The age distribution for Latinx victims was consistent within groups to their overall presence in the sample. Women were a small

proportion of victims. White women were slightly overrepresented relative to white men, but otherwise women were underrepresented for the other racial and ethnic groups.

B. *Circumstances*

Among the four circumstance categories, the racial or ethnic distributions of persons killed were different than what we could expect knowing the actual distribution of victims by race or ethnicity. For example, among armed victims, there was a slight divergence from the overall pattern by race. About one in four armed decedents were Black (27.3% compared to 25.2% overall), while about one in two were white (48.8% compared to 51.9% overall). For the other circumstances, we observed large differences. Among those both armed and in mental health crisis, white victims were overrepresented (65.9% compared to 51.9% overall) while Black victims were underrepresented relative to their share of deaths (14.9% compared to 25.2% overall).

Flight and threat represent a second set of justifications for police killings that are descriptive of interactions between suspects and police officers during the fatal encounter. These two features can be present within any of the four circumstance categories, suggesting a two-dimensional space in which to evaluate the reasonableness of a police killing. Both of these factors map closely onto the constitutional regulatory scheme of *Garner* and *Graham*, as well as the notion of exigencies that the ADA accommodations cases anticipate.[206]

The trends on flight suggest that *Garner*'s prohibition on fleeing suspects may not hold today. Overall, about 30% of all police killings were of suspects who were fleeing. Of course, there may be more detail that might explain the use of deadly force in the context of flight.[207] And two-thirds of suspects who were killed had made some form of attack toward the officer. However, the construction of reasonableness in *Garner* and its override by Justice O'Connor, first in her dissent in *Garner* and later in the majority opinion in *Graham*, suggest that the infusion of subjective judgment into a reasonableness heuristic may increase the likelihood of a fatality. Moreover, the flight and threat factors may interact with the circumstances of the killing so that, for example, the actions of an armed person in mental health crisis who feigns attack may appear particularly threatening to an officer. In a split-second evaluation of the level of threat and risk, perceptions of attack may be individuated and cued by factors such as language (body or verbal), surroundings, and the behavioral scripts that officers adopt from their immersion in specific policing cultures or subcultures.[208] That there are differences by the race of the decedent in the four

[206] *See supra* Section II.B.

[207] For example, an officer believing that a fleeing suspect may be armed might reasonably fear that the suspect could turn on the officer or use the weapon to injure or kill a bystander.

[208] *See* I. Bennett Capers, *Policing, Race, and Place*, 44 HARV. C.R.-C.L. L. REV. 43, 74-77 (2009) (discussing police cultures and how neighborhood surroundings affect policing);

primary categories suggests that these interactions may be influenced by context and cues whose complexity may not be captured by these categories.

Table 3 shows the results of the Poisson regression models to estimate differences by race in police killings disaggregated to the circumstances of police killings. Each model includes race-specific predictors for the number of victims within that category. The estimates then show the relative risks by race for killings within each of the four sets of circumstances. The effects are reported as incidence-rate ratios ("IRRs") which show the rate or incidence of an outcome adjusted for covariates.[209] In these models, the IRR is shown for each racial group relative to the omitted groups—in this case, white victims. These comparisons are made for overall victimization as well as for victimization for flight ("Flee") and for attack ("Threat"). An IRR of 1.0 suggests comparable rates across groups while an IRR of 1.5 suggests that there may be a substantially higher rate of events over the course of the time interval. Statistical significance indicates whether the difference in rates between one group and the other groups combined occurs by chance.

Across each circumstance category, the IRR for Black victims is significantly higher than it is for white victims. The IRR for Black victims for the first column (Neither) suggests that there are likely to be 1.29 times as many killings of Black civilians as white civilians over the study period. The results for the other categories are similar, ranging from 1.12 times (Armed) to 1.25 times (Both). As an analysis with multiple comparisons of predictors and outcomes with the same sample, the consistency and strength of the findings regarding Black civilians is especially noteworthy.

The results for Latinx victims are more mixed. Latinx civilians who are in the Neither group are 1.29 times more likely to be killed by police than are similarly situated white victims. However, for the other categories, Latinx civilians are either less likely to be killed than are white civilians or the results are not statistically significant.

Malcolm D. Holmes & Brad W. Smith, *Intergroup Dynamics of Extra-Legal Police Aggression: An Integrated Theory of Race and Place*, 17 AGGRESSION & VIOLENT BEHAV. 344, 344-53 (2012) (reviewing literature on heightened use of extralegal violence by police against minorities and synthesizing "ordinary social-psychological processes triggered by the characteristics of neighborhoods" as explanation).

[209] *See generally* Philip Sedgwick, *Poisson Regression*, 349 BRIT. MED. J. 6150 (2014).

The two other exigent circumstances—flight and threat—are significant predictors for Black killings in three of four models. Blacks who are fleeing are 1.22 times more likely to be killed by police than whites who are fleeing when adjusted for covariates. There are small effects in some models for Latinx and Asian civilians but no consistent pattern.

Three other findings merit discussion: First, the number of officers feloniously killed in action in a county is a consistent predictor of killings across categories. Comparing the threat results with this predictor suggests that the risk perceived by officers may be emphasized when the victim is Black but not for other racial or ethnic groups. Next, neither the violent-crime rate in a county nor the population distribution for any racial or ethnic group is a significant predictor of police killings. The same is true for economic inequality, as measured by Black-white and Latinx-white income ratios. This raises some doubt on the role of racial threat and conflict theories as factors in the rates of police killings, though other studies suggest that these factors may be present in police use of force generally.[210] In these models, there may be little else to explain the observed patterns other than the race or ethnicity of the suspect.

Finally, counties with higher concentrations of foreign-born residents have higher rates of police killings of civilians regardless of circumstance. If conflict theory is not a predictor of police killings, as the race and ethnicity variables indicate, then conflict theory does seem to be implicated when it comes to those born outside the United States. This finding seems at odds with the persistent findings in other studies showing that cities with higher rates of foreign-born residents have lower rates of homicide and violent crime[211] and that immigration

[210] *E.g.*, Malcolm D. Holmes, Matthew A. Painter II & Brad W. Smith, *Race, Place, and Police-Caused Homicide in U.S. Municipalities*, 36 JUST. Q. 751, 772-76 (2019) (showing that racial threat explains higher rates of police killings of Black and Latinx persons in neighborhoods also burdened by economic inequality); Jacobs & Britt, *supra* note 35, at 410 (finding direct relationship between economic inequality and police use of deadly force); Rachel Lautenschlager & Marisa Omori, *Racial Threat, Social (Dis)organization, and the Ecology of Police: Towards a Macro-level Understanding of Police Use-of-Force in Communities of Color*, 36 JUST. Q. 1050, 1064-65 (2019) (finding higher use-of-force rates and greater use-of-force severity in Black neighborhoods); Joscha Legewie, *Racial Profiling and Use of Force in Police Stops: How Local Events Trigger Periods of Increased Discrimination*, 122 AM. J. SOC. 379, 381 (2016) (finding increased use of force against Black individuals in wake of police murder by Black suspects but no similar correlation for white or Latinx individuals); Weston J. Morrow, Emily R. Berthelot & Samuel G. Vickovic, *Police Use of Force: An Examination of the Minority Threat Perspective*, 31 CRIM. JUST. STUD. 368, 378 (2018) (finding increased likelihood of use of force against Black and Latinx individuals).

[211] *See generally* RAMIRO MARTINEZ JR., LATINO HOMICIDE: IMMIGRATION, VIOLENCE, AND COMMUNITY 113-25 (2d ed. 2015) (discussing theory that immigration may actually act as buffer to violent crime); Matthew T. Lee, Ramiro Martinez Jr. & Richard Rosenfeld, *Does Immigration Increase Homicide? Negative Evidence from Three Border Cities*, 42 SOC. Q. 559 (2001) (finding that "immigration generally does not increase levels of homicide among Latinos and African Americans"); Jacob I. Stowell & Ramiro Martinez Jr., *Incorporating*

has no effect on crime.[212] This is a provocative finding that deserves research attention in the current era of tension and controversy over immigration.

The analyses in Table 3 show the predicted rates of police killings *within* each of the four categories of circumstances. Table 4 shows the distribution of cases by these discrete categories. We next estimated a second set of models using a multinomial logistic regression to determine the factors that predict the circumstance of each decedent's killing. That is, the results in Table 5 show the relative risk of uniquely belonging to each of the categories.

TABLE 4. DISCRETE CIRCUMSTANCE CATEGORIES IN POLICE KILLINGS, 2015-2018 (N, %).

Shooting Circumstance	N	%
Neither Armed nor Mental Health Crisis	209	5.9
Armed Only	2423	68.37
Mental Health Crisis Only	52	1.47
Both Armed and Mental Health Crisis	860	24.27
Total	3544	100

Note: Excludes 389 Cases with unknown circumstances and missing data on race.

Table 5 shows the results of the analysis to determine the factors predicting group membership. Two features of the data required adjustments for selection of cases. Our estimates included demographic composition and crime conditions of the counties, but not all counties had one or more police killings during the study period. To adjust for potential selection bias, we estimated a logistic regression model[213] to develop a selection parameter that adjusted for the exclusion of those counties with no police killings. Results are shown in Appendix Table D. A second selection model was estimated to control for the cases with unknown circumstances or other missing data, including data on victim race. We used a similar method to identify the parameters that identify those cases. The results are shown in Appendix Table E. In this table, we used

Ethnic-Specific Measures of Immigration In the Study of Lethal Violence, 13 HOMICIDE STUD. 315 (2009) (reporting that "immigration predicts lower levels of violence, and homicide in particular").

[212] *See generally, e.g.*, Scott Akins, Rubén G. Rumbaut & Richard Stansfield, *Immigration, Economic Disadvantage, and Homicide: A Community-Level Analysis of Austin, Texas*, 13 HOMICIDE STUD. 307 (2009) (finding that "recent immigration is not associated with homicide"); Ben Feldmeyer & Darrell Steffensmeier, *Immigration Effects on Homicide Offending for Total and Race/Ethnicity-Disaggregated Populations (White, Black, and Latino)*, 13 HOMICIDE STUD. 211 (2009) ("Findings reveal that immigrant concentration has trivial (nonsignificant) effects on overall homicides and Latino homicides, but slightly reduces White and Black homicide offending, net of controls.").

[213] *See* HOSMER, LEMESHOW & STURDIVANT, *supra* note 203, at 7, 125.

white victims as the reference group.[214] The selection parameter was incorporated in the multinomial regressions shown in Table 5.

Table 5 shows analyses comparing each of the first three categories in Table 4 with Both as the reference category. We use white victims as the reference group and the results are shown as RRRs. In all three analyses, we found Black civilians to be at a significantly greater risk than white civilians to be killed when they are in the Neither group, the Armed group, and the Mental Health Crisis group. The risk ratios are large, ranging from 2.4 times as great (compared to white persons) in Model 2 to 3.8 times as great in Model 1. In Model 1, when the victim was in the Neither group, those fleeing or presenting a threat were more likely to be killed—but only if Black. Only in Model 2 in Table 5 of the Armed group do the results suggest that Latinx persons were more likely to be killed by police than were white persons.

Table 5 also shows the significant effect of flight and threat in the first two models. This is especially notable considering that victims in the reference group were both armed and in mental health crisis. The data are carefully coded on these two dimensions, as described earlier.[215] Threat, which is coded on whether the victim was threatening to attack or in the act of attacking the officer, conforms to the conditions of reasonable provocation defined in *Graham*.[216] But flight raises concerns about the constitutional basis of these killings in light of *Garner*'s prohibition on killing a fleeing suspect.[217] Only in the mental-health-crisis model were victims neither fleeing nor presenting a threat at the time of their killings, in contrast to persons in the reference group who were both armed and in mental health crisis. This finding is especially notable because it appears in concert with Black (in Models 1 and 2) and Latinx (in Model 2) race/ethnicity as risk factors for killing.[218]

[214] Note that in Appendix Table D, the predictors of unknown cases are race-neutral—that is, none of the race variables predict missing circumstances of any killings in the dataset. Instead, whether the victim was fleeing and whether the victim was deemed a threat (of attack) were the only significant predictors of missing circumstances.

[215] *See supra* notes 191-92 (describing coding procedure for flight and threat).

[216] *See* Graham v. Connor, 490 U.S. 386, 397 (1989).

[217] *See* Tennessee v. Garner, 471 U.S. 1, 3 (1985).

[218] We estimated these models, adding interaction effects of flight and threat with each of three race/ethnicity groups, to see if the flight and/or threat risks were specific to any group. None of the interaction effects were significant, suggesting that the flight and threat risks were salient predictors for all groups.

TABLE 5. MULTINOMIAL LOGISTIC REGRESSION OF POLICE KILLINGS ON CATEGORIES OF REASONABLENESS, 2015-2019 (RISK RATIO, SE, p, 95% CI).

	Risk Ratio	Std. Error	p	95% CI	
Neither					
Black Civilian	3.772	(.960)	***	2.358	6.373
Latinx Civilian	1.508	(.387)		.931	2.538
Asian/NA/PI/Other Civilian	1.970	(.925)		.814	5.082
Flee	3.791	(1.727)	**	1.344	8.721
Threat Level	.460	(.123)	**	.281	.823
Officers Killed in the Line of Duty	1.067	(.030)	*	1.005	1.13
Police Killings	1.003	(.005)		.996	1.008
Constant	.003	(.010)		.001	12.908
Armed Only					
Black Civilian	2.378	(.385)	***	1.757	3.337
Latinx Civilian	1.560	(.196)	***	1.238	2.012
Asian/NA/PI/Other Civilian	1.602	(.349)	*	1.058	2.478
Flee	3.565	(1.122)	***	1.908	6.526
Threat Level	1.422	(.190)	**	1.099	1.851
Officers Killed in the Line of Duty	1.036	(.052)		.943	1.146
Police Killings	1.000	(.004)		.999	1.008
Constant	1.088	(2.019)		.060	39.807
Mental Health Only					
Black Civilian	3.366	(1.318)	***	1.629	7.33
Latinx Civilian	.786	(.366)		.318	1.926
Asian/NA/PI/Other Civilian	2.482	(1.697)		.512	6.967
Flee	.674	(.613)		.147	6.019
Threat Level	.978	(.416)		.387	2.144
Officers Killed in the Line of Duty	1.115	(.049)	**	1.115	2.305
Police Killings	.995	(.008)		.989	1.007
Constant	.279	(1.590)		.000	1143.05
Model Statistics					
AIC	4436.71				
Pseudo R2	.076				
Pseudo LL	-2170.36				

Significance: * = p <.05, ** p < .01, *** p < .001

Notes: N=3239 Reference groups include Both (armed and mental health) circumstances and White victims. Models estimated with year fixed effects, and controls for inequality, labor force participation, Total, Black, Latinx, Asian/NA/PI, and Foreign-Born populations. Parameters included controlling for counties with no police killings and cases with unknown circumstances.

The finding of elevated risk for Black victims in the Mental Health Crisis group suggests two worrisome features of police killings: First, training protocols focused solely on mental health may need to be redesigned to incorporate issues of greater perceptions of threat among Black civilians.[219] Second, race may be more salient than other factors in the decision to use lethal force on a suspect across circumstances. This is particularly worrisome given the additional details of flight and threat in killings with less substantial bases for reasonableness. In other words, race appears to distinguish these killings even after taking into account the additional factors that might justify an officer's use of lethal force. Police killings, then, are neither race-neutral nor linked to specific features of the incident.

Together, the results in Tables 4 and 5 suggest that race may be a multiplier of reasonableness that elevates the risk of police killings for Black and (to some extent) Latinx decedents.

C. *Remediation*

Table 6 shows the results of the tests for effects of CIT training on the incidence of police killings of civilians in each county by victim race and ethnicity. None of the results are statistically significant. Despite the general absence of significance, there seem to be as many tests that produce negative results as there are tests suggesting some positive treatment effect. Recall, though, that this test controls for the factors that explain the rate of adoption of CIT training within a county. The first stage of the AIPW models suggests that counties that adopt CIT training tend to be counties with higher rates of police killings and violent crime. It seems that CIT training may not be effective in places with such adverse conditions, but perhaps it would fare better if conditions of police use of lethal force were less acute.

[219] *See infra* Conclusion.

TABLE 6. SUMMARY OF AIPW REGRESSIONS OF CIT EFFECTS ON SHOOTINGS (AVG. TREATMENT EFFECT, STD. ERROR, p).

Victim Race	All	Neither	Armed	Mental Health Crisis	Both
All	10.732	.379	7.775	-.204	.919
	(5.744)	(.383)	(4.104)	(.284)	(.799)
Black	.011	.087	1.301*	.005	.097
	(.015)	(.077)	(.646)	(.037)	(.170)
Latinx	-.02	-.033	-.016	-.006	.217
	(.015)	(.055)	(.015)	(.010)	(.323)
Asian/NA/PI/Other	-.003	.001	-.002	.003	.082
	(.005)	(.005)	(.005)	(.003)	(.047)

Significance: * = p < .05, ** = p <.01, *** = p < .001

Notes: White victim shootings omitted as reference. Models estimated with controls for race- and ethnicity-specific victim flight or threat during killings, county total population, race/ethnicity-specific populations, county Foreign-Born population, Gini coefficient, officers killed in line of duty, and violent crime rate. Standard errors clustered by county, year fixed effects.

To test this, we estimated a second set of regressions using the same Poisson regression structure, but we changed the independent variable from the dichotomous measure of the presence of a CIT training program in the county during the study period to the number of counties in the state that have one or more agencies with CIT training. We added a state-level fixed effect to account for nesting of counties within states. The pattern of results was the same as in Table 6: there were no significant effects of CIT training on the rate of police killings within any of the four categories of shooting circumstances.[220] These results suggest that CIT training programs that focus exclusively on mental health crisis show little promise of remediating police killings.

CONCLUSION

Both federal courts and state courts—in civil actions and potentially in criminal actions—continue to rely on a reasonableness standard to justify police conduct. Under this standard, tribunals review post hoc the circumstances and the decisions made by the officers in a police shooting, and officers rarely face liability because tribunals defer to the officers' subjective observations about the level of danger and imminence of threat.[221] The case law inherently relies on a

[220] Results omitted but available from authors upon request.

[221] *See, e.g.*, SPECIAL INVESTIGATIONS & PROSECUTIONS UNIT, N.Y. STATE OFFICE OF THE ATT'Y GEN., REPORT ON THE INVESTIGATION INTO THE DEATH OF SAHEED VASSELL 3-4 (2019), https://ag.ny.gov/sites/default/files/oag_report_-_saheed_vassell_3.29.pdf

retrospective interpretation of police killings or other excessive-force claims. This sets a high bar for holding officers or agencies accountable and places a substantial burden on the decedents' families seeking redress.[222] We suggest that the longstanding practice of deferring to the reasonableness of police officers' expertise fails to effectively protect persons of color by allowing racial bias to influence an officer's use of deadly force. Without rethinking the reasonableness standard, persons who are perceived to be dangerous on account of their race, the immediate social context of their encounter with the police, or their mental illness will remain at risk.

The Fourth Amendment reasonableness inquiry assesses whether an officer's actions are "objectively reasonable" in light of the facts and circumstances confronting the officer, without regard to the officer's underlying intent or motivation.[223] Rethinking the reasonableness standard—whether construed as

[https://perma.cc/ML9T-G234] (declining to prosecute officers after finding their perceptions reasonable); U.S. DOJ, *supra* note 24, at 78-85 (declining to find Officer Wilson's observations unreasonable in refusing to bring federal charges in death of Michael Brown); Ashley Frantz, Steve Almasy & Catherine E. Shoichet, *Tamir Rice Shooting: No Charges for Officers*, CNN (Dec. 28, 2015, 7:22 PM), https://www.cnn.com/2015/12/28/us/tamir-rice-shooting/index.html [https://perma.cc/FEM6-74C8] (reporting that prosecutor presenting charges to grand jury said officers' perceptions were "reasonable" and recommending that officers not be indicted).

[222] Even when courts may find fault in an officers' decision to shoot a suspect, qualified immunity often shields individual officers and municipal entities from liability that could lead to damages or other punishments. *See* Joanna C. Schwartz, *How Qualified Immunity Fails*, 127 YALE L.J. 2, 7 (2017) ("[T]he Supreme Court's recent qualified immunity decisions have 'created such powerful shields for law enforcement that people whose rights are violated . . . lack any means of enforcing those rights.'" (quoting Stephen R. Reinhardt, *The Demise of Habeas Corpus and the Rise of Qualified Immunity: The Court's Ever Increasing Limitations on the Development and Enforcement of Constitutional Rights and Some Particularly Unfortunate Consequences*, 113 MICH. L. REV. 1219, 1245 (2015))); *see also* John C. Jeffries, Jr., Distinguished Lecture, *What's Wrong with Qualified Immunity?*, 62 FLA. L. REV. 851, 851-52 (2010) (criticizing qualified immunity doctrine as uncritically accepting of police officers' accounts of their exculpatory claims for why they violated a suspect's constitutional rights); Joanna C. Schwartz, *The Case Against Qualified Immunity*, 93 NOTRE DAME L. REV. 1797, 1814 (2018) (expressing concern that Supreme Court's qualified immunity decisions have "made it increasingly difficult for plaintiffs to show that [police officers] have violated clearly established law, and increasingly easy for courts to avoid defining the contours of constitutional rights"). Qualified immunity extends beyond police shootings to civil rights violations generally. *See* Bivens v. Six Unknown Named Agents of the Fed. Bureau of Narcotics, 403 U.S. 388, 397 (1971).

[223] "The calculus of reasonableness must embody allowance for the fact that police officers are often forced to make split-second judgments—in circumstances that are tense, uncertain, and rapidly evolving—about the amount of force that is necessary in a particular situation." Graham v. Connor, 490 U.S. 386, 396-97 (1989); Jody D. Armour, *Race* Ipsa Loquitur*: Of Reasonable Racists, Intelligent Bayesians, and Involuntary Negrophobes*, 46 STAN. L. REV. 781, 790-93 (2006) (distinguishing between the "Reasonable Racist" whose estimate of

the subjective reasonableness of a police officer's sense of risk or the objective reasonableness of an officer's decisions in the context of a reasonable officer *in situ*—would require a different type of analysis, one that would examine decision-making using data and methods from decision science and a careful analysis of shooting incidents.[224] Even if reasonable under this reformed standard, police killings can still be mistakes—either of law[225] or of risk judgment.[226] And based on the evidence developed in this Article, those mistakes may fall disproportionately on nonwhites in a variety of contexts during encounters with police. It is the framework of mistake and race that informs our discussion of remediation of police killings.

A. *Types of Mistakes*

The split-second decisions in many police killings—decisions that *Graham* instantiates into its construction of *reasonableness*—require judgments about risk. As Professor Paul Taylor notes, an officer who shoots an unarmed suspect because the officer believes the suspect is armed makes an error, while an officer who shoots an unarmed suspect whom the officer knows or believes to be unarmed acts with intention, not error.[227] The officer who misinterprets the actions of a person in a mental health crisis as potentially injurious or life threatening—though the behavior is simply erratic and consistent with that person's acute mental health crisis—similarly makes an error. Our analysis suggests that the risks of error may be greater when the suspect is a person of color.

Errors can be classified as skill-based, rule-based, or knowledge-based.[228] The errors can also be understood as the situational factors that reflect on the cognitive processes of the officer: misplaced or misdirected focus of attention, surrender of control to autonomic process, proneness to errors in prediction, exposure to opportunities for error, or overwhelming priming from prior

"danger" relies on double-counting suspect race and stereotypical features of both race and place, and the "Intelligent Bayesian" who relies on actual though perhaps biased crime rates to predict behavior).

[224] Scott v. Harris, 550 U.S. 372, 381-83 (2007) (effectively foreclosing challenges to *Graham* on police use of excessive force by defaulting to retrospective examination of officers' decisions).

[225] *See* Wayne A. Logan, *Police Mistakes of Law*, 61 EMORY L.J. 69, 69 (2011) (citing growing tolerance among courts to condone seizures based on "reasonable" police mistakes of law).

[226] Paul L. Taylor, *Beyond False Positives: A Typology of Police Shooting Errors*, 18 CRIMINOLOGY & PUB. POL'Y 807, 807-11 (2019).

[227] *Id.* at 808 (explaining that not all police shootings of unarmed people are the same type of error—or are even error at all—under the author's definition).

[228] *Id.* at 810.

experience.[229] Each suggests a set of concurrent or overlapping cognitive processes that map onto the distinction made by Professor Daniel Kahneman between instinctual actions (System 1 thinking) and deliberative or knowledge-based actions (System 2 thinking).[230]

Each of these dynamics can produce the familiar error structure of false positives (the officer thought the unarmed person was armed) or false negatives (the officer thought the armed person was unarmed).[231] But in the context of a person experiencing a mental health crisis, the officer's thinking may be further challenged by the complexity of the behaviors of the suspect and the associated complications of the risk assessment. This may be particularly true when an unarmed suspect makes sudden gestures or unfamiliar movements—as in the case of Saheed Vassell—that complicate that risk assessment. Taylor further extends the typology to distinguish errors that result from a misdiagnosis of risk.[232] Misdiagnosis errors suggest that shootings can occur as mistakes of fact or as mistakes produced by erroneous risk estimation. This latter type of error is perhaps most prone to the priming and stereotyping that short-circuit deliberative processes and that, with their fear-inducing features, can lead to shooting errors. Professor David Klinger describes both perceptual processes and decisional processes that may lead to a shooting:

> The line separating close calls from shootings is razor thin. . . . [P]olice officers hold their fire in the face of all sorts of threatening actions, including gunfire directed at them. So when officers do shoot, it is because something—the way armed individuals stand, the way they hold their weapons, the way they move, the words they speak, the look on their faces, some cue—tells them that this moment is different . . . .[233]

If these are common factors that can lead to shooting mistakes, what explains the racial disproportionality in our data on police shootings across five different types of contexts and circumstances? Two sets of factors could intensify each of these types of errors or mistakes, leading to distortion in which actions may seem

[229] *See id.* at 810-11 (describing "dimensions" for errors, including type of activity, focus of attention, control mode, predictability of error type, ration of error to opportunity for error, influence of situational factors, ease of detection, and relationship to change).

[230] *Id.* at 810 ("The skill- and rule-based levels neatly align with Kahneman's conception of System 1 processing, whereas the knowledge-based level corresponds with the effortful System 2."). *See generally* KAHNEMAN, *supra* note 42.

[231] In the police context, Professors Peter Scharf and Arnold Binder suggested an early version of this typology. PETER SCHARF & ARNOLD BINDER, THE BADGE AND THE BULLET: POLICE USE OF DEADLY FORCE 23 (1983) (identifying false-positive errors and false-negative errors as two possible logical outcomes for potentially deadly police encounters).

[232] Taylor, *supra* note 226, at 814 (defining "misdiagnosis error" as intentional action against intended target with unintended outcome and as rule-based and false-positive errors under Scharf and Binder).

[233] DAVID KLINGER, INTO THE KILL ZONE: A COP'S EYE VIEW OF DEADLY FORCE 83 (2004).

reasonable: First, mistakes can be compounded by race, increasing the risk of violence in an encounter. Priming and cues from racial stereotypes such as the "symbolic assailant,"[234] social contexts such as "high-crime neighborhoods,"[235] and identity and domination contests in heated interactions[236] can intensify encounters, raise emotions and fears, and distort assessments of threat and risk. Research conducted by Professor Rick Trinkner and his colleagues demonstrates how race can distort decision-making: it can realign the point at which force becomes justified, if not "reasonable."[237] Race can also alter and dilute the perception of reasonableness by increasing the perceived justification for force in everyday civilian encounters.[238] The aggravating effects of hypermasculinity, as described by Cooper,[239] can also escalate a routine encounter into a deadly struggle, as in the case of Eric Garner.[240] And routine police culture can increase support for excessive force in encounters with civilians.[241]

Second, features of the police workplace may also contribute to mistakes. For example, police patrols are concentrated in areas characterized by high crime

[234] SKOLNICK, *supra* note 128, at 42 (defining "symbolic assailants" as "persons who use gesture, language, and attire that the police have come to recognize as a prelude to violence"); Kimberly Barsamian Kahn et al., *Protecting Whiteness: White Phenotypic Racial Stereotypicality Reduces Police Use of Force*, 7 SOC. PSYCHOL. & PERSONALITY SCI. 403, 407-08 (2016) (suggesting that disparate treatment nonwhites receive within criminal justice system compared to that received by whites is associated with phenotypic racial stereotypicality).

[235] David Klinger et al., *Race, Crime, and the Micro-ecology of Deadly Force*, 15 CRIMINOLOGY & PUB. POL'Y 193, 213 (2016) (stating that police officers are especially careful in exceptionally high-crime areas); William Terrill & Michael D. Reisig, *Neighborhood Context and Police Use of Force*, 40 J. RES. CRIME & DELINQ. 291, 306 (2003) (finding that police are more aggressive when operating in lower-class and high-crime neighborhoods).

[236] Cooper, *supra* note 82, at 698-701 (discussing identity and masculinity "contests" between officers and civilian suspects).

[237] Trinkner, Kerrison & Goff, *supra* note 123, at 430-31 (finding that police officers' concerns with appearing racist are associated with increased support for coercive policing).

[238] *Id.* (explaining that police officers who believe their jobs are more dangerous are more likely to feel confident about their authority, leading them to believe that their interactions require more force than necessary).

[239] Cooper, *supra* note 82, at 691-92 (explaining that hypermasculine behavior in policing leads to culture in which officers are generally on lookout for signs of disrespect, leading to police brutality).

[240] Katie Benner, *Eric Garner's Death Will Not Lead to Federal Charges for N.Y.P.D. Officer*, N.Y. TIMES, July 17, 2019, at A1 (describing how police officers applied chokehold on Eric Garner, leading to his death).

[241] Sklansky, *supra* note 98, at 23 (explaining that officers are united by manner in which they work and by group norms that regard public as adverse); Alonso, *supra* note 29, at 998 (stating that police culture resists change due to vague constitutional standards that favor police departments).

rates but also by higher proportions of nonwhite populations.[242] In these tactical regimes, police are more likely to encounter Black and Latinx civilians than whites and others, priming police to associate race and danger.[243] Our results suggest that when racial cues amplify the risks of mistakes in a setting of high rates of police-citizen encounters, police shootings may become foreseeable.[244]

B. *Interventions*

The results suggest two types of possible steps to remediate police killings and potentially deadly force. One set of measures would reduce siloing of police work to encourage more interaction among officers across units and diversification of tasks. The second set suggests revisions to the CIT training curriculum to incorporate features of the racial parameters of policing and to diversify the curriculum to reflect police encounters beyond mental health crises.

1. Diversifying and Correcting the Police Task Setting

Police officers work in commands or units. These include routine patrol units, anticrime specialized units, narcotics and vice units, traffic enforcement units, and other specialized details. Officers work within those units not only intensively but also often exclusively.[245] In those conditions, norms and perceptual or analytic frameworks to conduct assignments become reified and insular. Social networks of officers form, including networks of officers who share backgrounds of episodes of excessive force[246] and in-group bias.[247] This creates social groups in which racial bias and preferences for lethal force may

[242] *See* Klinger et al., *supra* note 235, at 205-06; Terrill & Reisig, *supra* note 235, at 306.

[243] *See* Terrill & Reisig, *supra* note 235, at 306.

[244] *See* Kristin Henning, *The Reasonable Black Child: Race, Adolescence, and the Fourth Amendment*, 67 AM. U. L. REV. 1513, 1542, 1546-47 (2018) (explaining that police officers' assumptions dictate how they handle Black, Latinx, and immigrant youth).

[245] *See, e.g.*, JILL LEOVY, GHETTOSIDE: A TRUE STORY OF MURDER IN AMERICA 25-26 (2015) (describing sharp organizational boundaries between investigation units, such as the elite Robbery-Homicide Division, and patrol units, such as those patrolling minority neighborhoods of South Los Angeles, otherwise known as "ghettoside," and further remarking that status distinctions among different investigation units place limits on police officer mobility within their agencies); Robert J. Kane, *Permanent Beat Assignments in Association with Community Policing: Assessing the Impact on Police Officers' Field Activity*, 17 JUST. Q. 259, 272 (2000) (finding that permanent assignments to specific beats and tasks resulted in "significant increase in officer-initiated investigative activity").

[246] Roithmayr, *supra* note 104, at 432-33; Wood, Roithmayr & Papachristos, *supra* note 102, at 13-14.

[247] Nayoung Rim, Bocar Ba & Roman Rivera, *In-Group Bias and the Police: Evidence from Award Nominations* 38-39 (Univ. of Pa. Inst. for Law & Econ., Working Paper No. 20-02, 2019), https://ssrn.com/abstract=3519336 [https://perma.cc/L8M8-27AR] (suggesting that police departments should focus on policies addressing in-group bias because of its impact on internal dynamics).

coexist.[248] Police dyads form when officers patrol with the same partner for extended periods of time under a range of circumstances, requiring strong reciprocal norms to ensure that civilian encounters proceed safely. Doing police work in that setting, including in potentially volatile civilian encounters where lethal force may be needed, can reinforce those norms and behavioral preferences.[249] Some have characterized police behavior in those settings and contexts as "scripted."[250]

Disrupting deep social networks of officers to allow for a range of behavioral norms and scripts can create a constant flow of ideas and expectations for everyday police work. Studies of police organizational innovation place the burden for the injection of new ideas and norms on police administration to promote interactions among officers who can share expertise on successful police tactics.[251] Professors Charles Sabel and William Simon refer to this organizational norm as "post-bureaucratic" and as a "collaborative community" that emphasizes collaboration across unit boundaries and rejects inflexible rules and norms that publicize the success and resolution of problems.[252] In this organizational design, "norms are revised more or less continuously in the light of information from monitoring."[253]

A second design option requires debriefing of adverse events—including shootings and civilian and officer fatalities—and analysis of the root causes of such police disasters.[254] This model draws from institutional responses to failures in medical settings, aviation and other transportation systems, child welfare, firefighting, manufacturing, nuclear power, and several other organizational systems.[255] The purpose is not to assign blame but to identify the

[248] *See* Roithmayr, *supra* note 104, at 432-33; Wood, Roithmayr & Papachristos, *supra* note 102, at 13-14.

[249] Fagan & Geller, *supra* note 115, at 86.

[250] *Id.* at 63-65 ("Script theory has been widely used in social psychology to identify patterns of decisionmaking and social interaction that persist among persons within social networks.").

[251] *See* Charles F. Sabel & William H. Simon, *The Duty of Responsible Administration and the Problem of Police Accountability*, 33 YALE J. ON REG. 165, 176-77, 176 n.28 (2016).

[252] *Id.* at 176.

[253] *Id.* at 176 n.28.

[254] John Hollway, Calvin Lee & Sean Smoot, *Root Cause Analysis: A Tool to Promote Officer Safety and Reduce Officer Involved Shootings over Time*, 62 VILL. L. REV. 883, 912-14 (2017) (explaining that root-cause analyses allow for implementation of reforms that will improve safety, increase morale, and restore police legitimacy).

[255] James Reason, *Human Error: Models and Management*, 320 BRIT. MED. J. 768, 769-70 (2000) (stating that high-reliability organizations offer important models for resilient systems).

sources of systemic failure that produce an adverse event.[256] The root-cause-analysis ("RCA") model is sometimes referred to as a "sentinel event review" to identify person-system interactions in complex organizations performing urgent tasks.[257] It is a systematic process for identifying the root causes of problems or events and an approach for responding to them.[258] In the case of police shootings and the racial components that we identify in this project, it is critical that the review emphasize the ways in which both systemic racism and institutional racism are part of the analysis of the root causes of a civilian death.

The process of an RCA entails collaboration and deliberation among the actors involved, from managers to line staff. Decisional errors are characterized as a lack of information, knowledge, or experience or as the misunderstanding of good information.[259] In a police shooting, errors are the misinterpretation of a suspect's intention or behavior and the use of ineffective methods to gain a suspect's compliance.[260] Systemic errors include the lack of preparation for or understanding of the surroundings and context of an encounter; errors in tactics or skills, either from incorrect decisions or lack of a needed skill; and a capacity for error correction "on the fly."[261] RCA models are not substitutes for accountability mechanisms but rather provide a constructive component with which officers can update and internalize alternatives available for future situations.[262]

2. Rethinking CIT Training

CIT training was developed to impart expertise to police officers responding to persons who are experiencing a mental health crisis.[263] The National Curriculum developed by the University of Memphis is an intensive, five-day program with multiple components that provides information to officers and

[256] *See* Hollway, Lee & Smoot, *supra* note 254, at 886-87 (arguing that although retrospective accountability mechanisms may deter police from shootings caused by misconduct, they fail to reduce occurrences of accidental or unintentional acts).

[257] *Id.* at 889 ("RCA, sometimes referred to as 'sentinel event review' or 'just culture event review,' is a form of quality improvement in complex human systems." (footnotes omitted)); *see* PAUL F. WILSON, LARRY D. DELL & GAYLORD F. ANDERSON, ROOT CAUSE ANALYSIS: A TOOL FOR TOTAL QUALITY MANAGEMENT 10-11 (1993) (explaining that root-cause analysis is designed to provide input to management decisions regarding quality and productivity, creating effective tools to provide corrective action and preventative measures).

[258] Hollway, Lee & Smoot, *supra* note 254, at 902.

[259] *Id.* at 901.

[260] *Id.*

[261] *Id.* at 901-02.

[262] *Id.* at 887.

[263] Campbell, *supra* note 37, at 325-26.

their managers.[264] It is detailed and responsive to the needs of citizens experiencing mental illness as well as to the information and training needs of police agencies.[265] Specifically, it anticipates the diversity of the mental health crises that officers are likely to face.[266] The curriculum also offers a best practices guide to assist local agencies in fitting the curriculum to their settings.[267] Additionally, it suggests an administrative design for implementation and oversight of officer responses.[268]

Our data suggest two dimensions of police killings that should be incorporated into a curriculum designed to remediate the types of mistakes that lead to these fatal encounters. First, one in four victims of police killings (25.2%) are persons experiencing mental health crises.[269] To reduce the incidence of police killings, the curriculum will require rethinking to incorporate other circumstances of fatal police-civilian encounters, such as situations involving persons who are both armed and in mental health crisis, involving armed persons, and involving a range of other persons who are neither armed nor in crisis. Revising and expanding the curriculum to focus on decision-making and "mistakes" is critical to strengthening the curriculum to have a wider impact on police shootings and killings. This suggests a need to reframe the curriculum to be both officer-centered and incident-centered and to expand the curriculum to the full range of fatal encounters. This reframing would also tackle sensitive issues in police recruitment and supervision in order to detect both the types of decision processes that lead to mistakes and the types that lead to appropriate uses of force, thereby minimizing the use of lethal force.

The racialization of killings is a second dimension that needs to be incorporated into training that aims to reduce police use of deadly or potentially deadly force. Such training would add a second dimension to contemporary police training that focuses on mental health. Our data suggest that about one in four civilian deaths in police encounters are Black civilians, a disproportionate rate relative to the Black population in the United States.[270] Using the *Fatal Encounters* database, researchers estimate that Black men are 2.5 times more likely than white men to be killed by police and that Black women are 1.4 times

[264] *National Curriculum*, U. MEM. CIT CTR., http://www.cit.memphis.edu/curriculuma.php?id=0 [https://perma.cc/F98K-2NDJ] (last visited Apr. 20, 2020) (providing general overview of CIT National Curriculum for five-day training program).

[265] Campbell, *supra* note 37, at 332-33.

[266] *See id.* at 326-27.

[267] LAURA USHER ET AL., CIT INT'L, CRISIS INTERVENTION TEAM (CIT) PROGRAMS: A BEST PRACTICE GUIDE FOR TRANSFORMING COMMUNITY RESPONSES TO MENTAL HEALTH CRISES 4 (2019), http://www.citinternational.org/resources/Documents/CIT%20guide%20desktop%20printing%202019_08_16%20(1).pdf [https://perma.cc/4GYY-8SJQ].

[268] *Id.* at 90-91, 101-11.

[269] *See supra* Table 2.

[270] *See supra* Table 2.

more likely than white women to be killed by police.[271] For Black males, this translates into one death by police per 1000 persons, compared to 0.39 deaths per 1000 persons for whites.[272] Another recent study suggests that characteristics of place—crime rates and the Black population in a county—are significant predictors of fatal police encounters.[273] Both of these data points suggest that there are features (e.g., race) of each incident that prime officers to see greater risk or danger in a civilian encounter, potentially leading to a fatal shooting. While these studies analyze police killings in the aggregate, our findings confirm the critical role of race in these incidents.

What would race-conscious training or policy look like? Training to reduce implicit bias presents several hurdles. Bias reflects bad habits of mind, which are not easily broken by a dose of training. Even effective training seems to decay over time.[274] Neither implicit-bias interventions nor explicit-bias interventions produced significant differences that evaded decay.[275] Biases are not easily extinguished through low-dose, single-day training sessions—training that seems to be typical of the interventions reviewed by Professor Patrick Forscher and colleagues.[276]

For such training to be effective, we suggest that race-conscious content be developed consistent with what we understand about both explicit bias and implicit bias and that these features of police shootings be incorporated into the ongoing RCA models that allow for debriefing and analysis of the sources of errors and mistakes. Questioning the decisions of officers with attention to perceptions of race and threat, as well as to interaction dynamics and perceptions, can have two benefits: The first will be to signal that race matters when police agencies diagnose how a fatal encounter unfolds. The second benefit, achieved by incorporating race-conscious content into the RCA process and into routine training on police stops and the use of force, signals throughout the police department that race matters. A final thought is that experimentation

[271] Frank Edwards, Hedwig Lee & Michael Esposito, *Risk of Being Killed by Police Use of Force in the United States by Age, Race-Ethnicity, and Sex*, 116 PROC. NAT'L ACAD. SCI. 16,793, 16,794 (2019).

[272] *Id.* at 16,794-95.

[273] Johnson et al., *supra* note 34, at 15,880 (explaining that in counties where minorities committed high rates of violent crime, Latinx and Black adults were more likely to be fatally shot than white adults).

[274] Patrick S. Forscher et al., *A Meta-analysis of Procedures to Change Implicit Measures*, 117 J. PERSONALITY & SOC. PSYCHOL. 522, 542 (2019) (noting recent study suggesting that interventions that reduced biases showed little to no lasting impact).

[275] *Id.* at 540 fig.9 (depicting funnel plots of effect sizes for studies on implicit, explicit, and behavioral measures).

[276] *Id.* at 542 (stating that only 3% of samples used procedures that took longer than one session to complete); *see* Florian Arendt, *Dose-Dependent Media Priming Effects of Stereotypic Newspaper Articles on Implicit and Explicit Stereotypes*, 63 J. COMM. 830, 844 (2013) (finding that total effect on stereotypes was nearly the same in low-dose conditions as in higher-dose conditions).

matters: experiments to reduce bias in police shootings and to reduce their overall incidence signal networks of police officers and police supervisors that agencies are ready and committed to undertake new measures to reduce racial disparities.

APPENDIX A. NOTES ON INCORRECTLY CODED RECORDS

In compiling the data, Campbell discovered and corrected three errors that she found in the archive.[277] The errors included:

1. Jacob Albrethsen (ID 4096) was listed in the *Washington Post* database as having died in Oregon. Orem, the city where his death is recorded, is in Utah County, Utah.

2. Ricardo Tenorio (ID 1874) was listed in the *Washington Post* database as having died in Memphis, Tennessee; his death actually occurred in West Memphis, Crittenden County, Arkansas.[278]

3. Quintin J. Horner (ID 3516) was listed in the *Washington Post* database as having died in Utica, Kentucky. News reports about the death of Quintin J. Horner in Utica, New York, make no mention of a fatal police encounter in Kentucky on that date.[279] However, *Fatal Encounters* lists Reuben Ruffin Jr. (*Fatal Encounters* ID 23941) as having died in Utica, Kentucky.[280] In our database, we replaced Horner's details with Ruffin's as Ruffin's details are listed in *Fatal Encounters*.

Prior to making these changes, Campbell conducted her analysis on the data as it existed on February 1, 2019.

[277] Campbell, *supra* note 37, at 345 n.168.

[278] *See* George Brown & Melissa Moon, *Man Who Tried to Run Over SCSO Deputy & Shot Dead in West Memphis*, WREG (Sept. 9, 2016), https://wreg.com/2016/09/09/man-wanted-for-trying-to-run-over-scso-shot-dead-in-west-memphis/ [https://perma.cc/ZW66-NPTT].

[279] *See Man Shot, Killed in Utica*, UTICA OBSERVER-DISPATCH (Mar. 22, 2018, 7:00 AM), https://www.uticaod.com/news/20180321/man-shot-killed-in-utica [https://perma.cc/V6UX-NVEB].

[280] FATAL ENCOUNTERS, *supra* note 176.

APPENDIX TABLE B. DESCRIPTIVE STATISTICS – COUNTIES, 2015-2018

	Mean	SD	Min	Max
Total Shootings	0.29	1.18	0	50
Total Population	94,141.20	283,708.80	74	10,100,000
Total Population 16+	83,073.10	250,039.80	88	8,890,339
Total Male Population 16+	40,705.40	122,065.20	41	4,358,957
Total Black Population 16+	10,731.30	45,193.80	0	1,098,653
Total White Population 16+	64,980.90	180,233.40	24	6,283,383
Total Latinx Population 16+	14,696.90	94,844.80	1	4,163,855
Total Asian/NA/PI/Other	1008.50	4025.20	0	129,314
Population Density (persons per sq. mile)	755.9	2932.40	4.1	73,475.20
Foreign-Born Population	11,408.00	76,283.30	0	3,478,829.00
CIT Training (County)	0.27	0.44	0	1
CIT Training (Counties per State)	2.81	6.68	0	50
Median Income	58,013.60	15,295.80	28,212	135,842.00
Ratio: White-Black Median Income	1.7	1.4	0.3	34.2
Ratio: White-Latinx Median Income	1.4	0.5	0.3	15.8
Officers Killed in Line of Duty	0	0	0	0.06
Violent Crime per 1,000 Population	1.05	1.16	0	13.82

Sources: FBI, U.S. DOJ, *supra* note 193; Press Release, U.S. Census Bureau, *supra* note 151; *United States of America*, *supra* note 151; *Washington Post Database*, *supra* note 18.

APPENDIX TABLE C. CIT TRAINING PROGRAMS BY STATE, 2019

	Counties with CIT Training Programs	Total Counties	% of Counties with CIT Training Programs
Alabama	0	67	0.00%
Alaska	2	29	6.90%
Arizona	4	15	26.67%
Arkansas	0	75	0.00%
California	24	58	41.38%
Colorado	15	64	23.44%
Connecticut	5	8	62.50%
Delaware	1	3	33.33%
Florida	45	67	67.16%
Georgia	45	159	28.30%
Hawaii	1	5	20.00%
Idaho	13	44	29.55%
Illinois	49	102	48.04%
Indiana	25	92	27.17%
Iowa	6	99	6.06%
Kansas	11	105	10.48%
Kentucky	72	120	60.00%
Louisiana	30	64	46.88%
Maine	16	16	100.00%
Maryland	9	24	37.50%
Massachusetts	4	14	28.57%
Michigan	2	83	2.41%
Minnesota	24	87	27.59%
Mississippi	4	82	4.88%
Missouri	9	115	7.83%
Montana	3	56	5.36%
Nebraska	4	93	4.30%
Nevada	2	17	11.76%
New Hampshire	3	10	30.00%
New Jersey	11	21	52.38%
New Mexico	3	33	9.09%
New York	4	62	6.45%
North Carolina	81	100	81.00%
North Dakota	3	53	5.66%

Ohio	87	88	98.86%
Oklahoma	8	77	10.39%
Oregon	14	36	38.89%
Pennsylvania	15	67	22.39%
Rhode island	0	5	0.00%
South Carolina	2	46	4.35%
South Dakota	3	66	4.55%
Tennessee	18	95	18.95%
Texas	9	254	3.54%
Utah	21	29	72.41%
Vermont	1	14	7.14%
Virginia	52	133	39.10%
Washington	12	39	30.77%
West Virginia	0	55	0.00%
Wisconsin	30	72	41.67%
Wyoming	4	23	17.39%
District of Columbia	1	1	100.00%

Source: *United States of America*, *supra* note 151.

APPENDIX TABLE D. LOGISTIC REGRESSION ON PREVALENCE OF POLICE KILLINGS BY COUNTY, 2015-2018

	b	SE	p	95% CI	
Officers Killed in Line of Duty	-.513	.216	*	-.936	-.090
Log Black Population	.034	.037		-.039	.108
Log Foreign-Born Population	.556	.103	***	.354	.759
Log Latinx Population	-.556	.084	***	-.721	-.391
Log Total Population	-1.211	.144	***	-1.493	-.929
Gini Coefficient	-8.753	1.65	***	-11.986	-5.519
Population over Age 50	.000	.000		.000	.000
Population Density	.000	.000		.000	.000
Violent Crime (total)	-.001	.002		-.004	.002
Property Crime (total)	.000	.000		-.001	.000
Labor Force Participation	.000	.000		.000	.000
CIT Training in County	.039	.025		-.010	.087
Constant	17.147	1.485	***	14.236	20.058
Model Statistics:					
AIC	3106.85				
Pseudo R2	.524				
Pseudo LL	-1540.43				

Significance: * = p <.05, ** = p < .01, *** = p <.001

Notes: N=5126 county-year observations. Demographic variables from ASC 2013-2018 five-year estimates. Crime variables are means for 2015-2018, from FBI Uniform Crime Reports via Social Explorer. Model estimated with year fixed effects. *See supra* notes 197-97 and accompanying text.

APPENDIX TABLE E. LOGISTIC REGRESSION ON ESTIMATE UNKNOWN CIRCUMSTANCES IN POLICE SHOOTINGS, 2015-2018

	b	SE	p	95% CI	
Case Factors					
Black Civilian	.262	(.199)		-.139	.644
Latinx Civilian	.221	(.199)		-.141	.625
Asian/NA/PI/Other	-.091	(.374)		-.812	.645
Flee	1.873	(.131)	***	1.610	2.125
Threat Level	-.882	(.140)	***	-1.158	-.677
County Factors					
Officers Killed in Line of Duty	.017	(.024)		-.017	-.609
Log Population	-.127	(.242)		-.363	.064
Log Black Population	.069	(.074)		-.080	.430
Log Foreign-Born Population	-.100	(.199)		-.542	.204
Log Latinx Population	.078	(.149)		-.174	.222
Police Shootings in County	.004	(.002)		-.001	.008
Police Shooting Prevalence in County	-.134	(.629)		-.603	.397
Constant	-3.666	(1.336)	***	-6.285	-1.046
Model Statistics:					
Pseudo R2	.142				
Pseudo LL	-744.5				
AIC	1521.09				

Significance: * = p < .05, ** p < .01, *** = p < .001
Notes: N=3517 cases. White Civilian omitted category. Demographic variables from ASC 2013-2018 five-year estimates. Model estimated with year fixed effects. *See supra* notes 197-97198 and accompanying text.