A DATA-DRIVEN REMEDY FOR RACIAL DISPARITIES: COMPSTAT FOR JUSTICE

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Police executives and policymakers have long affirmed a core principle of sound organizational management: law enforcement agencies must "measure what matters."[1] And they do: since the New York Police Department popularized the COMPSTAT process in the late 1990s, the systematic, ongoing analysis of crime and arrest data has achieved widespread acceptance by law enforcement agencies across the United States.[2] Police officers and employees record every crime and arrest that occurs at every location within a precinct or jurisdiction over the past week, month, and year, allowing officers to identify geographic and temporal trends in lawbreaking and redirect policing resources accordingly. Police executives meet regularly with unit commanders to evaluate the success of their unit's actions in reducing crime, evaluating in real time how well police behavioral interventions are working. Judging by their commitment to measurement and accountability, law enforcement agencies are very serious about reducing crime.

On the other hand, our policing data practices suggest that the influence of law enforcement on vulnerable communities does not

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1. *See generally* U.S. DEP'T OF JUST., MEASURING WHAT MATTERS: PROCEEDINGS FROM THE POLICING RESEARCH INSTITUTE MEETINGS (Robert H. Langworthy ed., 1999), https://www.ncjrs.gov/pdffiles1/nij/170610.pdf [https://perma.cc/4Z6C-3TC8]; Robert C. Davis et al., *Revisiting "Measuring What Matters": Developing a Suite of Standardized Performance Measures for Policing,* 18 POLICE Q. 469 (2015); THOMAS V. BRADY, MEASURING WHAT MATTERS: PART ONE: MEASURES OF CRIME, FEAR, AND DISORDER (U.S. Dep't of Just. 1996), https://www.ncjrs.gov/pdffiles/measure.pdf [https://perma.cc/E9U5-C6K4].

2. By 2014, forty-three of the fifty largest municipalities in the United States had adopted "some form of CompStat." *See* DR. OLIVER ROEDER ET AL., WHAT CAUSED THE CRIME DECLINE? 58 (Brennan Ctr. for Just. 2015). For a description and assessment of the widespread adoption of COMPSTAT in U.S. policing, see generally James J. Willis et al., *Making Sense of COMPSTAT: A Theory-Based Analysis of Organizational Change in Three Police Departments,* 41 L. & SOC'Y REV. 147 (2007).

matter as much as it should.[3] Police leadership and policymakers routinely declare their commitment to racial equity in policing. They urge, as academics do, that policing reforms must be informed by empirical realities.[4] Nonetheless, most local jurisdictions do not require the collection or analysis of data about racial disparity in the ways they police Black, Latinx, or Indigenous communities.[5] About 20 states collect some form of information on racial disparities (most often in vehicle stops),[6] but none of them use that

3. The recent National Academies of Sciences, Engineering, and Medicine report on proactive policing noted that the influence of police behaviors on communities is woefully underexamined. *See* NAT'L ACADS. OF SCIS, ENG'G, & MED., PROACTIVE POLICING: EFFECTS ON CRIME AND COMMUNITIES (Nat'l Acads. Press 2018), https://www.nap.edu/catalog/24928/proactive-policing-effects-on-crime-and-communities [https://perma.cc/J8FG-GRJW].

4. *See, e.g.*, PRESIDENT'S TASK FORCE ON 21ST CENTURY POLICING, FINAL REPORT OF THE PRESIDENT'S TASK FORCE ON 21ST CENTURY POLICING 19–25 (Office of Cmty. Oriented Policing Servs. 2015), https://cops.usdoj.gov/pdf/taskforce/taskforce_finalreport.pdf [https://perma.cc/9UAG-JW9B] [hereinafter 21ST CENTURY POLICING TASK FORCE REPORT]; "*Recommendations to the President's Task Force on 21st Century Policing" Listening Session on Training and Education* (written testimony of Anthony Braga et al., Ad Hoc Comm. to the President's Task Force on 21st Century Policing, Div. of Policing, Am. Soc'y of Criminology, February 13–14, 2015); Stephen J. Schulhofer et al.*, American Policing at a Crossroads: Unsustainable Policies and the Procedural Justice Alternative,* 101 J. CRIM. L. & CRIMINOLOGY 335, 335 (2011) (calling for an "empirically-grounded shift" to a procedural justice model of policing); Stephen J. Schulhofer, *Criminal Justice, Local Democracy, and Constitutional Rights,* 111 MICH. L. REV. 1045, 1066–73 (2013) (reviewing WILLIAM J. STUNTZ, THE COLLAPSE OF AMERICAN CRIMINAL JUSTICE (2011)) (marshalling criminal justice and social science data that counters Aziz Huq, *Racial Equity in Algorithmic Criminal Justice,* 68 DUKE L.J. 1043, 1069 (2019) (claiming that the introduction of professionalized policing and *Miranda* and *Mapp* rights accounted for the increase in crime from the 1970s through the 1990s)); Tracey L. Meares, *Programming Errors: Understanding the Constitutionality of Stop-and-Frisk as a Program, Not an Incident,* 82 U. CHI. L. REV. 159 (2015); Andrew Manuel Crespo, *Systemic Facts: Toward Institutional Awareness in Criminal Courts,* 129 HARV. L. REV. 2049, 2070-85 (2016); Aziz Z. Huq, *The Consequences of Disparate Policing: Evaluating Stop and Frisk as a Modality of Urban Policing,* 101 MINN. L. REV. 2397 (2017); Aziz Huq, *Racial Equity in Algorithmic Criminal Justice,* 68 DUKE L.J. 1043, 1069 (2019) [hereinafter Huq, *Racial Equity*].

5. Notable exceptions include 2015 Cal. Legis. Serv. Ch. 466 (A.B. 953) [hereinafter California AB 953] (requiring data collection of all stops by state and local law enforcement agencies in California) and CONN. GEN. STAT. §§ 54-1l and 541m [hereinafter CT Racial Profiling Prevention Act] (requiring data collection of all vehicle stops by state and local law enforcement agencies).

6. *It's Time to Start Collecting Stop Data: A Case for Comprehensive Statewide Legislation,* POLICING PROJECT AT NYU SCHOOL OF LAW (Sept. 30, 2019), https://www.policingproject.org/news-main/2019/9/27/its-time-to-start-collecting-stop-data-a-case-for-comprehensive-statewide-legislation [https://perma.cc/CH8S-NRK3].

data to compel behavioral change. Institutional failure to analyze racial disparities or hold departments accountable to the goal of equity—the way they typically do for crime-reduction—belies our outward commitments, making it seem as though we, as a polity, do not care very much about what policing does to Black and other non-White people. Meanwhile, those same communities and others concerned with racial justice continue to insist that governments and law enforcement agencies do more to affirm that "Black Lives Matter."

In this Essay, we call for COMPSTAT for Justice (C4J), a novel process for real-time data analysis that will empower law enforcement agencies to identify the racial disparities that result from police behaviors and respond to them in real time. Part I of this Essay sets out the strengths and shortcomings of the existing COMPSTAT model, demonstrating the need for sustained, timely analyses of racial disparities in policing behavior. Part II describes the C4J process, which will illuminate the sources of racial disparities in stops, searches, and use of force, allowing law enforcement agencies to change their practices to reduce racial disparities and evaluate the effectiveness of these interventions. Part III explains how C4J can empower police departments to meaningfully reduce racial disparities in ways that have not, until now, been possible.

I.
MEASURING JUSTICE: THE NEED FOR C4J

Law enforcement agencies use COMPSTAT to track crime data, identify trends, and hold themselves accountable to shared goals of social order. If there is a series of car thefts in one neighborhood, they increase patrols there. When gun violence spikes, police try to anticipate that trend and stop it. By keeping track of how often, where, and when crimes take place, police departments are able to direct resources with the goal of preventing increases in crime from becoming outbreaks. This usually works simply by counting crimes, mapping crimes, and/or tracking the cadence of crimes. Why not do that with racial bias? Why not create a COMPSTAT for justice?

Law enforcement agencies, like researchers and advocates, need timely analysis of data, examined and presented in ways that will generate actionable information that empowers law enforcement agencies to identify and respond to the portion of disparities that police can change before they become entrenched.

If an organization of any kind is serious about its goals, it must measure its progress toward those goals, and hold the organization

accountable to that metric.[7] That challenge is especially tricky in the case of racial justice because descriptive analysis—in essence, counting, mapping, or time sequencing which provides the analytic power for most COMPSTAT processes—tends to reveal little more than the existence of disparities. If police data indicate that motorists who are stopped or searched are disproportionately Black or Latinx compared to the local population, this finding cannot tell us how much of the observed disparity is caused by factors that police can control, and how much is not. Sophisticated statistical analyses are needed to distinguish between the disparities that police departments likely cannot mitigate and the factors that are ripe for police intervention. How much of the disparity is predicted by factors such as poverty or housing disparities? How much arises from law enforcement policies or behaviors that police departments could change?

If we want to change behavior by introducing accountability, evaluation is essential. To date, data about policing behavior have not been widely available to researchers, forcing researchers to resort to incomplete or non-representative datasets to estimate racial disparities in law enforcement behaviors.[8] Most scholarly analyses of

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7. *See generally* JOHN DOERR, MEASURE WHAT MATTERS: HOW GOOGLE, BONO, AND THE GATES FOUNDATION ROCK THE WORLD WITH OKRS (2018) (advocating the use of OKR, or "objectives and key results," metrics to set goals and monitor organizational progress).

8. For example, the datasets used by scholars to assess racial disparity in fatal shootings by police officers are incomplete, and appear to greatly undercount the number of fatal shootings by police officers. For recent estimates of police-involved shootings, see FATAL ENCOUNTERS, https://www.fatalencounters.org/ [https:// perma.cc/R9RT-M5F3]; THE GUARDIAN, *The Counted: People Killed by Police in the U.S.*, https://www.theguardian.com/us-news/series/counted-us-police-killings [https://perma.cc/T5RW-3CCB]; U.S. DEP'T OF JUST., ARREST-RELATED DEATHS PROGRAM REDESIGN STUDY, 2015–16: PRELIMINARY FINDINGS (2016), https:// www.bjs.gov/content/pub/pdf/ardprs1516pf.pdf [https://perma.cc/2ND9-ST2W].

Recently published academic studies, however, relied on limited datasets that were unlikely to be representative. *See, e.g.*, James W. Buehler, *Racial/Ethnic Disparities in the Use of Lethal Force by U.S. Police, 2010-2014,* 107 AM. J. PUB. HEALTH 295 (2017) (relying on death certificates indicating injuries inflicted by police officers as the cause of death to estimate racial disparities in police use of force); Sarah DeGue et al., *Deaths Due to Use of Lethal Force by Law Enforcement: Findings from the National Violent Death Reporting System, 17 U.S. States, 2009-2012,* 51 AM. J. PREVENTATIVE MED. S173, S176 (2016) (noting that both the FBI's Uniform Crime Reporting system and the CDC's death certificate data are likely to undercount deaths caused by police officers). *See also* Amanda Charbonneau et al., *Understanding Racial Disparities in Police Use of Lethal Force: Lessons from Fatal Police-on-Police Shootings,* 73 J. SOC. ISSUES 744 (2017) (analyzing racial disparities among 26 shootings of on-

racial disparities in policing have been limited to one or a handful of states or police departments that could be persuaded to share data with researchers.[9] Other recent studies have relied on open data or on data obtained through public records requests.[10] While these efforts are useful, it seems unlikely that data from law enforcement agencies that make their data public, or respond in a timely way to a public-records request, are free of a sampling bias that would prohibit further generalization.

Another limitation of the extant scholarly literature is that analyses have been restricted to backward-looking snapshots in time, using retrospective analysis of racial disparity across a specific time period in the past.[11] Because, to date, no COMPSTAT-like system exists for the ongoing collection and analysis of policing data,

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and off-duty police officers killed by other police officers across a 29-year period to infer racial disparities in mistaken shootings by police).

9. *See, e.g.*, Andrew Gelman et al., *An Analysis of the New York City Police Department's "Stop-and-Frisk" Policy in the Context of Claims of Racial Bias,* 102 J. Am. Stat. Ass'n. 813 (2007); Adrienne N. Milner et al., *Black and Hispanic Men Perceived to Be Large Are at Increased Risk for Police Frisk, Search, and Force,* 11 PLOS ONE (2016), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0147158 [https://perma.cc/FYB8-U2SX]; Steven Raphael & Sandra V. Rozo, *Racial Disparities in the Acquisition of Juvenile Arrest Records,* 37 J. Lab. Econ. 125 (2019); Frank R. Baumgartner et al., *Targeting young men of color for search and arrest during traffic stops: evidence from North Carolina, 2002–2013,* 5 Pol., Groups, & Identities 107 (2016) [hereinafter Baumgartner, *Targeting*]; Charles R. Epp et al., Pulled Over 12 (John M. Conley & Lynn Mather eds., 2014); Frank R. Baumgartner et al., *Racial Disparities in Traffic Stop Outcomes,* 9 Duke F. for L. & Soc. Change 21 (2017) [hereinafter Baumgartner, *Racial Disparities*]; Roland G. Fryer, Jr., *An Empirical Analysis of Racial Differences in Police Use of Force,* 127 J. Pol. Econ. 1210 (2019) (using data shared by Los Angeles, three cities in Texas, and six counties in Florida, as well as data from the Police-Public Contact Survey and open data on NYPD stops and frisks); Kimberly B. Kahn et al., *Protecting Whiteness: White Phenotypic Racial Stereotypicality Reduces Police Use of Force,* 7 Soc. Psychol. & Personality Sci. 403, 405 (2016) ("a large department on the West Coast of the United States"); William Terrill & Eugene A. Paoline III, *Police Use of Less Lethal Force: Does Administrative Policy Matter?*, 34 Just. Q. 193 (2016) (examining Charlotte-Mecklenburg, Colorado Springs, and Albuquerque); Joel H. Garner & Christopher D. Maxwell, Understanding the Use of Force By and Against the Police in Six Jurisdictions (2002).

10. *See, e.g.*, Emma Pierson et al., *A Large-Scale Analysis of Racial Disparities in Police Stops Across the United States* (June 18, 2017), https://arxiv.org/abs/1706.05678 [https://perma.cc/BYM7-2L9B] [hereinafter Pierson 2017] (analyzing data from 20 state patrol stops made between 2011 and 2015); Emma Pierson et al., *A large-scale analysis of racial disparities in police stops across the United States*, 4 Nature Hum. Behav. 736 [hereinafter Pierson 2020] (analyzing data from 21 statewide patrol agencies and 29 municipal police departments between 2011 and 2017).

11. *See, e.g.*, Gelman, *supra* note 9; Pierson 2020, *supra* note 10.

forward-looking studies of police behavior are exceedingly rare, and have not been available to shape and evaluate interventions aimed at racial justice. This means that even simple pre-post-policy change analyses require special research events that departments' day-to-day practices are not set up to exploit.[12]

Open data alone cannot solve this problem, as improper analyses or reliance on descriptive analyses (e.g., racial disparities benchmarked against population demographics) are prone to entrench the presuppositions of both communities and law enforcement. Police-reform advocates may view evidence of disparities as evidence of bias, while defenders of law enforcement may attribute disparities to higher crime and poverty in non-White communities.

A final limitation of most police behavioral research to date is that, although several studies have deployed exemplary statistical methodologies to diagnose racial disparities in stops and searches of groups such as Black and Latinx men,[13] their methodologies take a great deal of research time, and so are not easily replicated on a multi-jurisdictional scale.[14]

The greatest barrier to timely analysis of policing data is often their uneven quality.[15] Police data collection is designed to serve the needs of law enforcement agencies, not researchers. Police data

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12. For example, Terrill and Paoline conducted a retrospective study of three municipal police departments, finding that departments with less-restrictive policies about when force is permissible had lower incidence of reported use of force. *See* Terrill & Paoline, *supra* note 9. This methodology could not, of course, show whether a departmental change to a more restrictive use-of-force policy would reduce use of force incidence. Another 1997 single-department study found that a department's adoption of a less-restrictive policy with respect to use of oleoresin capsicum spray was associated with an increase in use of the spray. *See* E.V. Morabito & W.G. Doerner, *Police use of less-than-lethal force: Oleoresin Capsicum (OC) spray,* 20 POLICING 680, 691 (1997).

13. *See generally* Gelman, *supra* note 9; John Knowles et al., *Racial Bias in Motor Vehicle Searches: Theory and Evidence,* 109 J. POLIT. ECON. 203 (2001); Pierson 2020, *supra* note 10; Baumgartner, *Targeting, supra* note 9.

14. For a review and evaluation of various methodologies for analysis of policing data, see Greg Ridgeway & John MacDonald, *Methods for Assessing Racially Biased Policing, in* RACE, ETHNICITY, AND POLICING: NEW AND ESSENTIAL READINGS 180 (Stephen K. Rice & Michael D. White, eds., 2010).

15. *See* Sharad Goel & Cheryl Phillips, *Police Data Suggests Black and Hispanic Drivers Are Searched More Often Than Whites,* SLATE (June 19, 2017, 12:38 PM), https://slate.com/technology/2017/06/statistical-analysis-of-data-from-20-states-suggests-evidence-of-racially-biased-policing.html [https://perma.cc/KF75-LPTB] (noting that among the 20 states that shared usable stop and search data analyzed in Pierson 2017, *supra* note 10, "the data came in myriad formats, requiring thousands of hours to clean and standardize"). *See also* Pierson 2020, *supra* note 10, at 2.

collection and reporting practices vary between law enforcement agencies, among work groups within an agency, and even between individual officers. Within the constraints of state laws that may govern their data collection obligations,[16] law enforcement agencies define for themselves what counts as a "stop" or use-of-force "incident" that their officers must record. Some departments may record vehicle stops but not pedestrian stops, may exclude some types of non-consensual police encounters from their definition of "stops," or may exempt certain types of force from their use-of-force reporting requirements. Even within a single work unit, data fields may be completed in inconsistent ways by different recorders.[17] Thus departmental datasets often provide an incomplete or inconsistent picture of what officers are doing in the field. Counts of vehicle stops or use-of-force incidents may not be directly comparable across departments within an agency, much less between agencies.

As a result, the data standardization that is an essential precondition for statistical analysis can be an arduous and time-consuming project that precludes the production of racial-disparity findings fast enough for police departments to respond to emerging disparities in a timely way.[18]

Despite all these difficulties, the need for timely, large-scale data analyses and reporting is urgent. Across the country, Black, Latinx, and Indigenous communities express concern that they are treated unfairly by police. The results of many recent, methodologically rigorous, multi-jurisdiction studies across the United States tend to support those concerns, finding systematic racial disparities that disfavor Black, Latinx, and other nonwhite persons in stops, searches, and use of force by police. Several studies have found that the more frequent stops experienced by Black and Latinx pedestrians and motorists (compared to their White counterparts) are not readily explained by legitimate law enforcement considerations,[19] and Black and other non-White persons are more likely than their White counterparts to be subjected to police use of force.[20]

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16. *See, e.g.*, California AB 953; CT Racial Profiling Prevention Act.

17. *See* Goel & Phillips, *supra* note 15.

18. *Id. See generally* Michal S. Gal & Daniel L. Rubinfeld, *Data Standardization*, 94 NYU L. REV. 737, 750–52, 742 (2019) (noting that standardization facilitates analysis and interoperability of data, and that "data standardization can lead to smoother data flows, better machine learning, and easier policing in cases where rights are infringed or unjustified harms are created by data-fed algorithms").

19. *See generally* Pierson 2017, *supra* note 10; Pierson 2020, *supra* note 10; Baumgartner, *Racial Disparities, supra* note 9; Gelman, *supra* note 9.

20. *See* Kahn, *supra* note 9; PHILLIP A. GOFF ET AL., THE SCIENCE OF JUSTICE: RACE, ARRESTS, AND POLICE USE OF FORCE 4 (Ctr. for Policing Equity 2016) https://

But what if data could be collected, uploaded, and rigorously analyzed in a timely and sustained way, so that sites, sources, and trends in racial disparity could be identified and law enforcement agencies could respond to them in real time? A sophisticated system of data collection and analysis could create a "heat map" of racial disparity to shine a light on areas where police departments could change their practices with immediate effect. Police already analyze and respond to data about crime rates this way, by using COMPSTAT. COMPSTAT revolutionized policing by providing timely analysis of crime-rate developments. It is a performance management process for systematic, timely, ongoing measurement and data analysis with respect to crime rates and other outcomes important to police.[21] Although each department implements it in its own way, the shared objective of COMPSTAT is "to implement strong management and accountability within police departments to execute strategies based on robust data collection, to reduce and prevent crime."[22] By providing actionable, real-time information about crime rates and other outcomes that are important to law enforcement agencies, COMPSTAT allows for rapid deployment of resources to areas of need, using tactics that will prove effective, and measuring outcomes to evaluate that effectiveness.[23]

The COMPSTAT process—periodic quantitative review and analysis that allows for the identification of priority areas where timely changes to police behaviors is needed—has been shown to work. The spatial targeting of police interventions on localized crime "hotspots" has been found to be effective at reducing crime—at least in the relatively short term.[24] Even though police

policingequity.org/images/pdfs-doc/CPE_SoJ_Race-Arrests-UoF_2016-07-08-1130.pdf [https://perma.cc/E2GA-CRUM] [hereinafter GOFF ET. AL., THE SCIENCE OF JUSTICE]; 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), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0141854 [https://perma.cc/TL9G-GMS8].

21. COMPSTAT has been widely adopted by law enforcement agencies throughout the United States. *See, e.g.,* BUREAU OF JUST. ASSISTANCE & POLICE EXEC. RESEARCH FORUM, COMPSTAT; ITS ORIGINS, EVOLUTION, AND FUTURE IN LAW ENFORCEMENT AGENCIES 6 (2013), https://www.bja.gov/Publications/PERF-Compstat.pdf [https://perma.cc/3TZB-JXB4] [hereinafter PERF] (finding that "nearly all agencies embrace the principles" of COMPSTAT).

22. ROEDER, *supra* note 2, at 66.

23. PERF, *supra* note 21, at 2.

24. *See* Anthony A. Braga, *Hot spots policing and crime prevention: A systematic review of randomized controlled trials,* 1 J. EXPERIMENTAL CRIMINOLOGY 317 (2005); ROEDER, *supra* note 2, at 75 (finding that COMPSTAT was responsible for a 5 to 15% reduction in crime in cities that used it); Leslie W. Kennedy et al., *Risk Clus-*

officers have only limited control over the factors that may contribute to crime in a particular location, COMPSTAT has been found to be effective, reducing crime in cities that use it by about 5 to 15% within the first year of implementation.[25]

Unlike COMPSTAT, which targets crimes that are proximally caused by decisions and actions of people outside the law enforcement agency, a C4J would empower police commanders and leadership to identify racial disparities that result from the policies and practices of the police themselves. Given that a C4J could disaggregate disparities resulting from police behavior from those resulting from factors outside police control (such as poverty and differential crime rates), and that police management has greater control over the behavior of police officers than it has over lawbreakers, it seems plausible that a well-designed C4J could greatly reduce racial disparities in police behaviors such as stops, searches, and use of force.

It should be acknowledged that law enforcement agencies have been criticized for using COMPSTAT in self-interested ways, for example by adopting "those COMPSTAT elements that were most likely to confer legitimacy [and] . . . implementing them in ways that would minimize disruption to existing organizational routines."[26] Law enforcement agencies have tended not to utilize the potential of machine learning to identify and address priorities raised by members of the community.[27] In some cases, officers have responded to COMPSTAT accountability by downgrading or failing to report crimes in order to maintain the appearance of a sustained

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ters, Hotspots, and Spatial Intelligence: Risk Terrain Modeling as an Algorithm for Police Resource Allocation Strategies, 27 J. QUANT. CRIMINOLOGY 339, 340-41 (2011). *See also* Lawrence W. Sherman et al., *Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place,* 27 CRIMINOLOGY 27 (1989); Hyunseok Jang et al., *An Evaluation of CompStat's Effect on Crime: The Fort Worth Experience,* 13 POLICE Q. 387, 399, 406–07 (2010).

25. *See* ROEDER, *supra* note 2, at 75.

26. *See* Willis et al., *supra* note 2, at 147 (adding that COMPSTAT was "less successful when trying to provide a basis for rigorously assessing organizational performance, and when trying to change those structures and routines widely accepted as being 'appropriate'").

27. *See, e.g.*, JAMES J. WILLIS, FIRST-LINE SUPERVISION UNDER COMPSTAT AND COMMUNITY POLICING: LESSONS FROM SIX AGENCIES; A REPORT SUBMITTED TO THE OFFICE OF COMMUNITY ORIENTED POLICING SERVICES 11, 15–18 (2011) [hereinafter WILLIS, FIRST-LINE SUPERVISION] (finding that COMPSTAT had been deployed to address police departments' crime control priorities but "sergeants did not mention receiving information that helped them systematically identify community problems, determine priorities, and document results").

reduction in crime.[28] While faulty data inputs could trouble any data-driven system, Bayesian analytic techniques—or even some simple numeric triggers—can be used to identify questionable inputs based on population, previous contact, and arrest demographics.

Traditional COMPSTAT models have also been fairly criticized for a tendency to overlook the effects of targeted policing on the communities that experience high rates of police contact as a result of COMPSTAT-driven patrol deployment.[29] Several scholars have criticized the failures of COMPSTAT (and other algorithmic tools used in criminal justice) to account for the external effects of policing practices, such as racial disparity, mass incarceration, and the effects of law enforcement on families and communities, and urge the use of algorithmic tools to address these oversights.[30] A C4J would be designed to address exactly these concerns.

II.
C4J: HOW AND WHY IT WOULD WORK

C4J could deploy data-driven analyses to address a priority that most police departments have identified, but tend not to systematically assess: racial equity in police practices. But how? Scholars disagree about how racial disparities in police outcomes should be analyzed. Some of this debate is disciplinary, with sociologists often using more descriptive approaches like hierarchical count models,[31] and economists and political scientists preferring more inferential approaches such as formal difference-in-difference

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28. *See, e.g.*, John A. Eterno & Eli B. Silverman, *The NYPD's Compstat: Compare Statistics or Compose Statistics?* 12 INT'L J. POLICE SCI. & MGMT. 426, 440 (2010) (suggesting that COMPSTAT may increase pressures for "unethical" crime-reporting practices designed to make it look like index crime is decreasing); DAVID N. KELLEY & SHARON L. MCCARTHY, THE REPORT OF THE CRIME REPORTING REVIEW COMMITTEE TO COMMISSIONER RAYMOND W. KELLY CONCERNING COMPSTAT AUDITING 47 (2013), *available at* https://www1.nyc.gov/assets/nypd/downloads/pdf/public_information/crime_reporting_review_committee_final_report_2013.pdf [https://perma.cc/EE23-FYYG] (finding evidence that "certain types of incidents may be downgraded as a matter of practice in *some* precincts").

29. *See, e.g.*, Richard A. Bierschbach & Stephanos Bibas, *Rationing Criminal Justice,* 116 MICH. L. REV. 187, 198 (2017) (noting that COMPSTAT might allow police departments to "ge[t] better at managing their own resources in a cost-effective way," but does not assist police in identifying or addressing the external consequences of their behavior, such as the effects of their practices on bail and prosecutions, and thus on mass incarceration).

30. *See* Huq, *Racial Equity, supra* note 4, at 1069; Bierschbach & Bibas, *supra* note 29, at 215; *see generally* WILLIS, FIRST-LINE SUPERVISION, *supra* note 27.

31. *See* Gelman, *supra* note 9, at 817–18.

modeling.[32] These approaches differ in the degree to which they can make attributions to specific causes for racial disparities and in how readily available the data is to conduct the analyses—the more causal, the harder to find the data. But much of the substantive debate is how to deal with the possible endogenous effects of bias on the model. In other words, if police bias produces higher arrest rates for Black residents than White residents (independent of any differential rates of law breaking), then it is difficult to use arrest rates as a benchmark for estimating racial bias in subsequent outcomes such as police force.

This problem begins with a fundamental flaw in all crime data: not all crimes can be counted. All data about "crime" is actually data about crimes that police departments know about and count. So while an assault is a crime regardless of who commits it or where it is committed, it will not register in any crime dataset unless it is reported to police, or discovered by them.[33] Crimes and arrests, therefore, are influenced by who feels comfortable reporting, whose reports are believed and taken seriously, and who police believe they can productively arrest. Given significant racial disparities in trust of the police[34] and broad suspicions of police bias,[35] it is reasonable that researchers would balk at controlling for reported-crime rates in an assessment of racial disparity in police responses to crime. Because the stereotype of Black criminality is so pervasive among officers and citizens,[36] the use of arrests or reported-crime rates as a benchmark would tend to mask disparities in police be-

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32. *See* Ridgeway & MacDonald, *supra* note 14.

33. Data on crime victimization also provides its own challenges. National estimates often undercount vulnerable groups, such as women and immigrants, and until recently may not have asked about contemporary forms of crime (e.g., identity theft) or may have asked in ways that tend to reduce the likelihood of response. Ronet Bachman & Bruce H. Taylor, *The Measurement of Family Violence and Rape by the Redesigned National Crime Victimization Survey*, 11 Just. Q. 499 (1994).

34. *See generally* Tom R. Tyler, *Policing in Black and White: Ethnic Group Differences in Trust and Confidence in the Police*, 8 Police Q. 322 (2005); Christopher Muller & Daniel Schrage, *Mass Imprisonment and Trust in the Law*, 651 Annals Am. Acad. Pol. & Soc. Sci. 139 (2013)

35. *On Views of Race and Inequality, Blacks and Whites are Worlds Apart*, Pew Research Center (June 27, 2016), https://www.pewsocialtrends.org/2016/06/27/on-views-of-race-and-inequality-blacks-and-whites-are-worlds-apart/ [https://perma.cc/VHT7-QAJS] (finding that 84% of Black Americans and 50% of White Americans believe that police treat Black people less fairly than White people).

36. *See, e.g.*, Jennifer L. Eberhardt et al., *Seeing Black: Race, Crime, and Visual Processing*, 87 J. Personality & Soc. Psychol. 876, 876 (2004); Phillip A. Goff et al., *The Essence of Innocence: Consequences of Dehumanizing Black Children*, 106 J. Personality & Soc. Psychol. 526, 526 (2014).

havior: "if officers are in fact racially biased, then we cannot use their arrests to represent what we would expect of an unbiased police force."[37] Likewise, using calls for police assistance as a benchmark could underestimate racial disparities if, for example, members of the public are more likely to call police on Black or other non-White individuals than on White persons engaged in the same behavior.[38]

However, some kind of benchmark is needed, if only to address the powerful counter-hypothesis that the reason Black and Latinx people experience more frequent police contact is that they, or their communities, are involved in crime.[39] If the benchmarks against which we measure racial disparity in police stops or use of force tend to incorporate police biases or discrimination against these groups (as reported-crime rates and arrest rates do), this endogeneity makes our test a conservative one. In other words, if our analyses control for crime and poverty and still reveal significant disparities, it is far less plausible that those disparities result from factors entirely outside of police control. The extant literature using such benchmarks has robustly demonstrated that crime rates and neighborhood poverty tend not to fully explain such racial disparities.[40]

A C4J could thus provide a routine, conservative test that could identify the geographic locations or incident types that produce the widest disparities that cannot be explained by non-police factors—illuminating the locations or types of contact where a change to police policy or behavior would be most likely to make a difference.

The regular cadence of a C4J would identify priority areas, whether geographic or incident-based, where the portion of unexplained racial disparity is highest or where the trend is going in the wrong direction. These analyses would allow law enforcement agencies to identify where *their practices* might exacerbate racial disparity. This presents an opportunity to pinpoint changes to their policies, norms, and enforcement practices. Most importantly, they will be able to evaluate the effects of those changes in real time.

Like COMPSTAT (and unlike existing academic analyses of police behaviors), C4J could be ongoing and sustained, rather than

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37. Ridgeway & MacDonald, *supra* note 14, at 185.

38. *Id.* at 186.

39. *See* Robert D. Crutchfield et al., *Racial and Ethnic Disparity and Criminal Justice: How Much is Too Much?*, 100 J. Crim. L. & Criminology 903, 907 (2010); Ridgeway & MacDonald, *supra* note 14, at 185.

40. *See, e.g.*, Gelman, *supra* note 9; Nat'l Acads. of Scis, Eng'g, & Med., *supra* note 3; Goff et al., The Science of Justice, *supra* note 20.

finite and retrospective as most research on race and policing, until now, has had to be. Like other disparities that are broad and pervasive, racial disparities are unlikely to be eliminated by one-time interventions at the most disparate locations. For example, in 2015, Salesforce audited the gender equity of its employees' salaries. Salesforce discovered they paid women less than men in the same jobs, and equalized the salaries.[41] Nonetheless, a follow-up audit the next year found that the pay gap had returned. In the year since the initial audit, Salesforce had acquired a number of companies with similar pay disparities. Where a form of injustice is widespread and pervasive outside an organization, it is likely to persist within the organization, even where leadership has sterling intentions and adopts best practices.[42] Racism, like sex discrimination—or crime, for that matter—cannot be solved with a one-time assessment. It requires a sustained commitment to evaluation for justice.

To conduct such analyses, of course, researchers need access to a sustained flow of police data from departments across the country, and the capacity to analyze and report on it. They need a nationwide database of stops, searches, and use of force incidents. The best candidate to date is the National Justice Database (NJD), which has grown for the past seven years at the Center for Policing Equity (CPE). Currently the NJD contains data from departments serving roughly one third of the U.S. population. The better the data and the broader its sources, the better analysts would be able to check for anomalies (such as officers, precincts, or departments attempting to game the system) and refine the utility of the analyses.

III.
C4J: EMPOWERING INSTITUTIONAL CHANGE

The theory of change that informs our work at the CPE can be broken into four parts. To make real progress toward just processes and outcomes, a law enforcement agency, or anyone else who wants to make real change, must meet four challenges: (1) the issue must be a shared priority; (2) change agents should have a shared understanding of the problem; (3) those empowered to make changes must have access to solutions they can implement; and (4) those empowered to make changes must have the resources to implement

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41. Lesley Stahl, *Leading By Example to Close the Gender Pay Gap,* 60 MINUTES (Apr. 15, 2018), https://www.cbsnews.com/news/salesforce-ceo-marc-benioff-leading-by-example-to-close-the-gender-pay-gap/ [https://perma.cc/YJM4-JK9H].

42. *Id.*

them. The first challenge—the existence of a moral, fiscal, and democratic crisis in criminal justice—is now widely acknowledged. C4J would empower communities, law enforcement agencies, governments, and civil society to address the second, third, and fourth challenges.

First, the crisis: over the past five to ten years, a bipartisan consensus has emerged (though it is by no means unanimous) that our current practices of criminal justice yield consequences—extreme racial disparities and mass incarceration—that are unsustainable. Organizations from the Charles Koch Foundation to Black Lives Matter, from the ACLU to federal and state governments, recognize the moral urgency of this crisis.[43] All of these entities urge governments to act.[44]

But what should be done about this crisis? The first obstacle to meaningful solutions may be the lack of a shared understanding of the problem. Law enforcement agencies and community advocates do not necessarily agree on the nature or scope of the problem. Is the disparate representation of Black, Latinx, or Indigenous persons in stops, searches, arrests, and use of force justifiable, or does it reflect racial profiling? If there were no discrimination, what would the racial distribution of such policing activities look like? Furthermore, racism is too often framed as a problem of individual attitudes. For example, racial disparities are often attributed to implicit bias or explicit prejudice in individual hearts and minds.[45]

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43. *See Criminal Justice Reform*, Charles Koch Found. https://www.charles kochinstitute.org/issue-areas/criminal-justice-policing-reform/ [https:// perma.cc/ABR9-H76B]; Shanelle Matthews & Miski Noor, Black Lives Matter: Celebrating Four Years of Organizing to Protect Black Lives 6 (2017), https:/ /drive.google.com/file/d/0B0pJEXffvS0uOHdJREJnZ2JJYTA/view [https:// perma.cc/R2PF-CG2T]; *Criminal Law Reform*, ACLU, https://www.aclu.org/issues/ criminal-law-reform [https://perma.cc/EK3T-6CY8].

44. *See, e.g.*, First Step Act of 2018, Pub. L. No. 115-391, 132 Stat. 5194 (2018); California AB 953; Connecticut Racial Profiling Prevention Act.

45. For literature exploring this idea, see Jill K. Swencionis & Phillip A. Goff, *The Psychological Science of Racial Bias and Policing,* 23 Psychol., Pub. Pol'y, & L. 398 (2017); Phillip A. Goff, *Identity traps: How to think about race & policing,* 2 Behav. Sci. & Pol'y 11 (2016); Phillip A. Goff et al., *The Space Between Us: Stereotype Threat and Distance in Interracial Contexts,* 94 J. Personality & Soc. Psychol. 91 (2008). Many commentators have explored the impact of implicit bias on racial disparities in policing. *See, e.g.,* Kirsten Weir, *Policing in Black and White,* 47 Am. Psychol. Assoc. Monitor on Psychol. 36, 37 (2016); Fritz Risch, *After Atatiana Jefferson shooting, Fort Worth must confront institutional racism,* Fort Worth Star-Telegram (Oct. 17, 2019, 12:06 PM), https://www.star-telegram.com/opinion/opn-columns-blogs/ other-voices/article236360323.html [https://perma.cc/4YKH-38SS] (defining "institutionalized racism and sexism" as "unconscious biases and assumptions"). Other commentators have noted that explicit bias may also contribute to such dis-

Thus disparities in traffic stops are often attributed to conscious or unconscious biases in the minds of individual police officers.[46]

While some disparate treatment of non-White persons by police is certainly attributable to officers' intentional or unconscious biases,[47] to locate disparate outcomes in officers' hearts and minds

parities. *See* Clarence Edwards, *Race and the Police,* Nat'l Police Found. Blog, https://www.policefoundation.org/race-and-the-police/ [https://perma.cc/XU7A-66Y3] (noting that "negative attitudes and or stereotypes" and "personal prejudices or partiality" among police officers may affect the fairness of their behavior in low-income Black neighborhoods); Eoin O'Carroll, *When keepers of the peace harbor hate,* Christian Sci. Monitor (Sept. 11, 2019), https://www.csmonitor.com/USA/Justice/2019/0911/When-keepers-of-the-peace-harbor-hate (quoting an African-American homicide sergeant: "Most cops are not racist, she says, 'But if you think that there are no white supremacists, you're definitely wrong. You're definitely wrong.'").

46. *See, e.g.*, 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 (2017); Baumgartner, *Racial Disparities, supra* note 9, at 26 ("With marching orders to make a lot of stops in order to find drug dealers, but without any clear indicators of who the drug dealers are . . . police officers utilize stereotypical criminal profiles to decide who gets stopped. In America, people of color and young Black men in particular are associated (either implicitly or explicitly) with criminality and thus more likely to arouse police suspicions. Crucially, even if for most officers these biases are slight, with only a small marginal likelihood of affecting their behavior, the cumulative effect could still be very great. That is, even if most officers are only slightly more likely to search a Black driver, on average Black drivers would experience many more searches than whites."). *See generally* Lee Ross, *The Intuitive Psychologist and His Shortcomings: Distortions in the Attribution Process, in* 10 Advances in Experimental Soc. Psychol. 173, 183 (Leonard Berkowitz ed., 1977) (defining the "fundamental attribution error" as "the tendency for attributors to underestimate the impact of situational factors and to overestimate the role of dispositional factors in controlling behavior"); Andrew Taslitz, *Police Are People Too: Cognitive Obstacles to, and Opportunities for, Police Getting the Individualized Suspicion Judgment Right,* 8 Ohio St. J. Crim. L. 7, 17 (2010) (describing the fundamental attribution error by which behaviors are attributed to individual character or disposition rather than to the situation the person is in) (citations omitted); L. Song Richardson, *Cognitive Bias, Police Character, and the Fourth Amendment,* Ariz. St. L.J. 267, 269–71 (2012) (same). *But see* Kimberly B. Kahn & Karin D. Martin, *Policing and Race: Disparate Treatment, Perceptions, and Policy Responses,* 10 Soc. Issues & Pol'y Rev. 82, 88 (2016) (pointing out the difficulty of disaggregating effects of individual officer prejudice from those of situational factors such as institutional policy choices to deploy more officers to low-income, non-white neighborhoods or to mandate stop and frisk programs that target young men of color).

47. *See, e.g.*, Goff et al., *The Space Between Us, supra* note 45, at 104 (finding that officers' fears of being stereotyped as racist predicted greater use of force); Phillip A. Goff & Karin D. Martin, Unity Breeds Fairness: The Consortium for Police Leadership in Equity Report on the Las Vegas Metropolitan Police Department (2012) (finding that officers' experience of a masculinity threat predicted greater use of force).

makes racism seem nearly insoluble. Police officers and executives, like anyone else, can become defensive when they feel that others are deeming them racist.[48] Reforming the heart or mind requires an intervention that may be almost mystical: education, a personal relationship, a religious experience, or a powerful encounter with art. If we locate racism in hearts and minds, the solution is salvation—difficult to accomplish individually and even harder at scale.[49] If racism boiled down to bigotry, our solution would have to be a sea-change in culture of a kind the American experiment has not accomplished in its 243 years.

When we define the problem of racial justice in policing as a question of behavior, rather than attitudes, we can align the definition of the problem between law enforcement and communities. Fortunately, we do not need to discern the biases of police officers or impugn their motives. It is policing *behaviors* that have to change, not officers' hearts or minds.

Luckily, police behaviors may be quite amenable to change. In earlier decades, some criminologists predicted that police management had limited ability to influence officers' behavior, since officers' prejudices and preferences might not align with managerial directives[50] and supervisors generally cannot directly observe officers' behavior in the field.[51] These predictions may have let man-

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48. *See, e.g.*, Kim S. Buchanan & Phillip A. Goff, *Racist Stereotype Threat in Civil Rights Law,* 67 UCLA L. Rev. (forthcoming 2020) (on file with authors); Phillip A. Goff et al., Protecting Equity: The Consortium for Police Leadership in Equity Report on the San Jose Police Department 5, 11 (2012) (finding that police officers who believed that community members stereotyped them as racist were more likely to use force).

49. Even the most successful experiments with implicit bias training have found only limited effects, over a short term. *See, e.g.*, Patricia G. Devine et al., *Long-term reduction in implicit race bias: A prejudice habit-breaking intervention,* 48 J. Experimental Psychol. 1267, 1277 (2012).

50. *See, e.g.*, Fryer, *supra* note 9, at 33–40 (theorizing that racial disparity in use of force arises from the minds of police officers in one or both of two ways: either from the officer's assessment of the statistical likelihood that a person of a certain race may be dangerous, or from a taste-based preference for discrimination); John Brehm & Scott Gates, Working, Shirking, and Sabotage: Bureaucratic Response to a Democratic Public 40–44, 171 (1999) (arguing that officers are likely to comply with management directives where their "predispositions" favor the management policy, or where they fear a "credible threat of punishment").

51. *See, e.g.*, John Brehm & Scott Gates, *supra* note 50; Steve Herbert, *Police Subculture Reconsidered,* 36 Criminology 343, 354 (1998); Kenneth C. Davis, Discretionary Justice: A Preliminary Inquiry (1969); Joseph Goldstein, *Police Discretion Not to Invoke the Criminal Process: Low-Visibility Decisions in the Administration of Justice,* 69 Yale L.J. 543, 552–53 (1960); James Q. Wilson, Varieties of Police

agement off the hook too easily. Criminal and constitutional laws, as well as institutional rules and norms, can and do shape the behavior of individual police officers on duty.[52]

For example, a 2018 study of NYPD stop-and-frisk data, by John MacDonald and Anthony Braga, found that 2013—the year of the *Floyd v. City of New York* decision invalidating NYPD's stop-and-frisk policy as unconstitutional[53]—marked a transformation of NYPD's notorious "stop and frisk" practice.

For years prior to 2013, researchers and advocates had documented severe racial disparities among the people stopped and frisked by police in New York City, and the neighborhoods in which such stops and searches occurred. Nearly all the searches involved Black or Latinx boys and young men, and the neighborhoods where the stop-and-frisks occurred were disproportionately low-income, Black, and Latinx.[54]

In 2013, NYPD stop-and-frisk policy was transformed. In March 2013, during the final stages of the *Floyd* litigation, the NYPD issued

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BEHAVIOR: THE MANAGEMENT OF LAW & ORDER IN EIGHT COMMUNITIES 227 (1968); ELIZABETH REUSS-IANNI, TWO CULTURES OF POLICING: STREET COPS AND MANAGEMENT COPS (1983) (arguing that divergent subcultures of "management cops" and "street cops" lead to officers' divergence from managerial directives in the field).

52. John MacDonald & Anthony A. Braga, *Did Post-Floyd et al. Reforms Reduce Racial Disparities in NYPD Stop, Question, and Frisk Practices? An Exploratory Analysis Using External and Internal Benchmarks,* 36 JUST. Q. 954 (2019) (finding a steep decrease, from the later stages of the *Floyd* litigation through the end of 2015, in the number of stop-question-and-frisks, and finding that racial disparity of SQF stops (by race and by neighborhood demographics) was eliminated in 2014 and 2015, suggesting that court-ordered remedies could be effective). *See also* Devon W. Carbado, *From Stop and Frisk to Shoot and Kill:* Terry v. Ohio*'s Pathway to Police Violence,* 64 UCLA L. REV. 1508 (2017) (arguing that constitutional laws permitting stop and question practices create opportunities for interactions that end in violence by police).

53. *See* Floyd v. City of New York, 959 F. Supp. 2d 540, 667 (S.D.N.Y. 2013) (finding that the NYPD stop-and-frisk policy violated the Fourth and Fourteenth Amendments); Floyd v. City of New York, 959 F. Supp. 2d 668, 688–91 (S.D.N.Y. 2013) (granting injunctive relief, appointing a monitor, and requiring the parties to enter into an agreement with respect to stop-and-frisk and racial profiling).

54. *See, e.g.*, Floyd, 959 F. Supp. 2d at 660 (finding that racial disparity in stop-and-frisks was widespread and intentional); MacDonald & Braga, *supra* note 52, at 976–77 (finding significant racial disparities in stop-and-frisk by neighborhood racial demographics and between similarly-situated individuals prior to 2012; the disparities declined in 2013 and were eliminated in 2014 and 2015); Gelman, *supra* note 9, at 821–22; Report of Plaintiffs' Expert Dr. Jeffrey Fagan, Ligon v. City of New York, 2012 WL 8282311 (2012) (No. 44-5); N.Y. CIVIL LIBERTIES UNION, STOP-AND-FRISK 2011: NYCLU BRIEFING (2011), https://www.nyclu.org/sites/default/files/publications/NYCLU_2011_Stop-and-Frisk_Report.pdf [https://perma.cc/NU9Y-NPU6].

a department-wide rule requiring more detailed documentation of every stop-and-frisk;[55] in August, a federal district court held NYPD's stop-and-frisk practice unconstitutional, and ordered the city to enter an agreement supervised by a court-ordered monitor;[56] and in January 2014, the newly elected mayor, who had run on a platform of ending stop-and-frisk, announced an agreement with the *Floyd* plaintiffs to drop the city's appeal of the *Floyd* decision and cooperate with police, communities, and the court-ordered monitor to implement police reform.[57]

MacDonald and Braga analyzed NYPD's open-source data on stop-and-frisks from January 2012 through December 2015. As other analysts had observed, the racial disparity in 2012 was substantial. In 2013, the number of stop-and-frisks, and the racial disparity in such stops, declined steeply. In 2014 and 2015 (the last year for which they had data), MacDonald and Braga found that the racial disparity in such encounters had been eliminated.[58]

We can assume that the individual beliefs and prejudices of NYPD officers did not undergo any sudden transformation in 2013. Rather, the sudden and durable transformation of NYPD's stop-and-frisk practice demonstrates that departmental directives can and do affect officers' behavior, at least where officers understand that the formal changes are meant to signal meaningful changes in day-to-day policing practice. Racial justice in policing does not require changing how police officers feel. It requires changing how they act.

Once we define the problem of racial justice in policing in terms of behaviors, not attitudes, a third hurdle arises: what to do about it. Law enforcement leadership may want to reduce racial dis-

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55. A March 5, 2013 memorandum from the Chief of Patrol to "Commanding Officer, All Patrol Boroughs," made it mandatory, "effective immediately" for officers who conducted pedestrian stops to complete the narrative section of UF-250 form, describing the circumstances and reasons for the stop, rather than simply checking boxes. *See* Ryan Devereaux, *NYPD stop-and-frisk memo revealed in civil rights court battle,* GUARDIAN (Mar. 27, 2013, 6:34 PM), https://www.theguardian.com/world/2013/mar/27/nypd-stop-and-frisk-memo [https://perma.cc/5KWC-33JT]; *NYPD Reveals Memo Revising Stop-and-Frisk Procedure,* CTR. FOR CONSTITUTIONAL RTS. (Mar. 27, 2013), https://ccrjustice.org/home/press-center/press-releases/nypd-reveals-memo-revising-stop-and-frisk-procedure [https://perma.cc/68AW-WA4R].

56. Floyd, 959 F. Supp. 2d at 688–91.

57. Press Release, City of New York, *Mayor de Blasio Announces Agreement in Landmark Stop-and-Frisk Case* (Jan. 30, 2014), https://www1.nyc.gov/office-of-the-mayor/news/726-14/mayor-de-blasio-agreement-landmark-stop-and-frisk-case#/0 [https://perma.cc/AB3V-N5YL].

58. MacDonald & Braga, *supra* note 52, at 977–80.

parity in stops, searches, and use of force, but how?[59] Without knowing the sources of racial disparity, they lack an empirically-informed strategy for changing it. Which disparities are the most amenable to changes in policing practice? Where do they arise? And which changes, exactly, should police leadership make?

Fortunately, the behavior of police officers is readily amenable to objective measurement. Stops, searches, yield rates, arrest rates, and use of force can be measured, analyzed, and compared. The location of the encounters, the race of the person, the reasons for the encounter, and its results can all be tracked in real time. Our algorithm will assess police behaviors against their public safety objectives—for example by comparing search rates to the rates at which searches yield contraband, or tracking the charges filed against persons who are subjected to police use of force. Everyone can see what's being counted, and what's being measured can be changed.

Once C4J identifies the locations where disparity is most likely to result from police behaviors, the solutions would likely arise in the same way that they do in traditional COMPSTAT: police and communities would collaborate on a diagnosis and a solution. It could be as simple as choosing not to enforce quality-of-life offenses in a particular neighborhood, or as complex as a multi-agency collaboration to deal with homelessness, as the Minneapolis Police Department (MPD) recently did to address CPE's finding that a disproportionate number of MPD use of force incidents involved homeless people. After preliminary analyses revealed homelessness as a risk factor for force, MPD worked with the city to provide services to the homeless before law enforcement was called to respond. The result was a drop in use of force of roughly 18% during the three years CPE was active in Minneapolis.[60] While we cannot make strong causal inferences from these observations, this reduction followed a three-year uptick in MPD use of force during the three years prior to our active involvement (2013–2015).[61] This suggests that the reduction in use of force during our intervention was unlikely to have been wholly unrelated to the shift in MPD policy.

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59. On the difficulty of predicting the consequences of policing interventions, see generally David M. Jaros, *Perfecting Criminal Markets*, 112 COLUM. L. REV. 1947, 1983–85 (2012); Brandon C. Welsh & David P. Farrington, *Monetary Costs and Benefits of Crime Prevention Programs*, 27 CRIME & JUST. 305, 345–46 (2000).

60. Use of force incidents recorded by Minneapolis Police declined from 951 in 2016 to 778 in 2018, an 18.2% decrease. *Minneapolis Use of Force Incident Information*, MINNEAPOLIS POLICE DEP'T https://www.insidempd.com/datadashboard/ [https://perma.cc/JC35-739H] (last accessed March 23, 2020).

61. *See id.*

Because C4J would use data that law enforcement agencies already collect, its implementation would not require police departments to invest in additional data-collection training for their officers, which might otherwise pose a significant barrier to law enforcement adoption. While data quality would limit the number of departments who could benefit from the service, data engineers could help solve some existing data capture issues across law enforcement by creating software to clean, audit, and standardize police data automatically. This process could also produce best practices for new data capture protocols, which could help advance the national movement toward standardizing data collection.[62] Law enforcement agencies will need a research partner capable of gathering data from the U.S. Census and American Community Survey and integrating those with police data. This process is both labor intensive and time consuming, but is one that technologists could aid greatly by automating the capture, cleaning, auditing, and standardization of law enforcement data.

Aided by these kinds of technological innovations, C4J could offer a cost-effective, implementable solution that aligns the definition of the problem between law enforcement and communities, and empowers law enforcement agencies to take action to mitigate it. Whether or not C4J yields the dramatic effects seen in Minneapolis, it would illuminate the scope and sources of racial disparity, align police and community understandings of how law enforcement practices affect communities, and evaluate the effectiveness of disparity-reduction interventions. If we care enough to denounce racial injustice, we must care enough to measure it and to evaluate whether the actions we take to reduce racial disparity are doing the job.

CONCLUSION

Despite the distance between current national standards of police data capture and the ideal articulated in this essay, the notion of measuring the portion of racial disparity most likely associated with law enforcement policy and behavior is one that solves a number of intractable problems in the current crisis of police legiti-

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62. *See* Marie Pryor et al., Guidebook to Police Data Collection in California (2019) (manuscript on file with authors); Racial and Identity Profiling Act of 2015, Cal. Gov't Code § 12525.5 (West 2015) (requiring detailed data collection for every stop conducted by state or local police officers, and requiring annual reporting of such data); Cal. Gov't Code § 12525.2 (West 2015) (requiring data collection on use of force by and against state or local police officers); 21st Century Policing Task Force Report, *supra* note 4, at 13.

macy. Members of affected communities are concerned that police do not treat them fairly. Federal recommendations from the Task Force on 21st Century Policing urge departments to deploy data collection and analysis to achieve equity and legitimacy. The momentum in police accountability is towards data-driven metrics, yet the existing science of racial disparities in policing has yet to develop ways to hold police accountable for inequalities that are within their capacity to control. The biggest question about a C4J may be: why has it not happened yet?