RESEARCH ARTICLE

CRIMINAL JUSTICE

The role of officer race and gender in police-civilian interactions in Chicago

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Diversification is a widely proposed policing reform, but its impact is difficult to assess. We used records of millions of daily patrol assignments, determined through fixed rules and preassigned rotations that mitigate self-selection, to compare the average behavior of officers of different demographic profiles working in comparable conditions. Relative to white officers, Black and Hispanic officers make far fewer stops and arrests, and they use force less often, especially against Black civilians. These effects are largest in majority-Black areas of Chicago and stem from reduced focus on enforcing low-level offenses, with greatest impact on Black civilians. Female officers also use less force than males, a result that holds within all racial groups. These results suggest that diversity reforms can improve police treatment of minority communities.

Racial disparities in police-civilian interactions and high-profile incidents of excessive force continue to fuel allegations of abusive and discriminatory policing (*1*, *2*). Central to these critiques are the fact that throughout the history of policing in the United States, many police forces have been nearly all white and male (*3*). In turn, some of the most frequently proposed reforms aimed at reducing inequities and police brutality have centered on hiring more nonwhite (*4*) and female (*5*) officers. One agency that has undergone substantial diversification in recent decades is the Chicago Police Department (CPD), transforming from a mostly white and nearly all male force to one in which half of sworn officers are minorities and over one-fifth are female. This heterogeneity across race and gender lines, combined with newly acquired data on officers' daily patrols and enforcement activities, allows a thorough assessment of the practical consequences of diversity in law enforcement. Although we cannot directly infer the future impact of further diversification, we can examine the Chicago case in depth to provide the most credible microlevel evidence to date on the treatment civilians can expect when encountering officers of varied racial, ethnic, and gender identities.

Theories of social distance and intergroup relations in a range of contexts (*6*–*9*) imply that diversifying police agencies may improve the treatment of minorities (*3*, *8*). Individuals rely on stereotypes when evaluating members of social groups (*10*) and are thought to be less likely to engage in harassment toward in-group members (*11*). However, research on organizational culture and bureaucratic politics suggests that officers of different social backgrounds may ultimately behave similarly because of self-selection into service and socialization during training and on the job (*3*, *12*–*16*). To succeed and advance, women and minorities may also face pressure to adopt conventional enforcement practices (*3*, *17*, *18*).

Rigorous evaluation of the effects of police diversity has been stymied by a lack of sufficiently fine-grained data on officer deployment and behavior that makes it difficult or impossible to ensure that officers being compared are facing common circumstances while on duty. Studies typically rely on coarse geographic units, like agency- or precinct-level data (*19*–*21*), which forced previous scholars to invoke the strong assumption that, for example, "white and nonwhite officers are randomly assigned to neighborhoods" (*20*, p. 389). Furthermore, most policing data sets contain records of enforcement events only [e.g., logs of stops or arrests (*22*–*24*)]; events in which officers choose to take no action are unobserved, potentially distorting inferences. Other studies that make valid comparisons are often limited in scope to particular activities, like ticketing during traffic accident investigations (*25*). And although some prior work has leveraged the timing of diversity reforms to estimate agency-level effects (*26*–*29*), those aggregated approaches are by design unable to examine details of police-civilian interactions. Findings with regard to racial diversity in particular have been decidedly mixed: In an exhaustive review of the empirical literature, one prominent legal scholar concluded, "[t]he fairest summary of the evidence is probably that we simply do not know" (*30*).

To assess the impact of diversity in law enforcement, we draw on newly collected data, assembled through years of open-records requests, that allow us to overcome long-standing limitations. These include officer demographics, language skills, daily shift assignments, and career progression. We link these files to time-stamped, geolocated records of the same officers' decisions to stop, arrest, and use force against civilians. After aggressively pruning data to maximize analytic validity, we compile a panel of 2.9 million officer shifts and 1.6 million enforcement events by nearly 7000 officers covering the years 2012 through 2015. Most notably, we leverage fine-grained information on daily patrol assignments, which vary exogenously on the basis of fixed rules and preassigned rotations, to examine how officers of different groups behave when faced with comparable circumstances and civilian behaviors.

The deployment effects that we estimate are a critical first step in the systematic evaluation of widely proposed personnel reforms, which have historically focused on increasing racial and gender diversity among officers. If officers of different demographic profiles do not behave differently when faced with the same conditions, there is little hope that diversifying police agencies will yield tangible differences in the treatment of marginalized civilians. Indeed, we demonstrate that deploying officers of different demographic profiles to comparable environments does produce large differences in how police treat civilians. However, we caution that these deployment effects do not directly generalize to future effects of hiring reforms, for several reasons. Chief among these are that (i) the nature of police-civilian interactions is changing rapidly; (ii) racial, ethnic, and gender differences in current officers' behavior may not map perfectly to those of future cohorts; (iii) deployment patterns will necessarily change as more officers are hired from marginalized groups; and (iv) diversification reforms may exert additional, potentially powerful second-order effects, e.g., through agency culture.

Chicago as a case study

Our focus on one city provides unusually detailed data at the expense of geographic scope. Chicago is a large and racially diverse metropolis, with roughly half of residents identifying as nonwhite. Chicago is also heavily segregated, has a history of racial tensions between residents and police, and has come under recent scrutiny for controversial aggressive policing tactics such as "stop and frisk" (*31*). The agency received national attention for the 2014 killing of 17-year-old Laquan McDonald, an attempted cover-up, and ensuing social unrest (*32*). The CPD was condemned for its "code of silence" (*33*), and then-superintendent Garry McCarthy received widespread criticism for "encouraging

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the kind of aggressive cop culture under which McDonald's shooting took place" (*34*).

As (*26*) recounts, before a series of lawsuits in the 1970s, the CPD was slightly less than 20% Black, in a city that was one-third Black in 1970. The Afro-American Patrolmen's League (AAPL) filed a discrimination suit "on hiring, promotion, assignment, and discipline" (*35*), with the Department of Justice (DOJ) soon joining it (*26*). In the early 1970s, Black hiring shares were around 10%. In 1974, hiring quotas were imposed, and Black hiring shares increased to 40% by 1975 (*26*). These reforms had broader effects on CPD's composition of the department; women made up a larger proportion of Black recruits, with white women lagging in hiring and promotion at first (*36*). As of December 2016, roughly 22% of officers identified as Black, 23% as Hispanic, and 3% Asian; and 22% are female, a stark change from its 99% male workforce in 1970. (Text S1.1 discusses racial and ethnic classification of CPD officers; text S2.1 and fig. S1 provide additional details about the CPD's evolution.)

From one standpoint, it may be difficult to extrapolate from Chicago to settings lacking these racial tensions and history of diversification. But in other ways, it is these very conditions that make Chicago an important test case: Among major departments nationwide, it is arguably one in which reform has historically been sorely needed. A single case study cannot be the final word in an important debate. But Chicago offers an invaluable opportunity to study diversity in policing using unusually fine-grained data, in a setting where concerns over racial inequity are pronounced.

Data

We submitted a series of open-records requests and appeals to the CPD, the city's Department of Human Resources, and the Illinois Office of the Attorney General over 3 years, seeking data on officer demographics and behavior. The resulting records include the name, race, gender, language skill, unit assignments, and appointment date of each officer (*37*, *38*). We also obtained officers' stops, arrests, and uses of force, which we merged with daily patrol assignments and U.S. Census data, per text S1.2 and S1.3. Table 1 reports aggregate counts. Owing to sparse data on other groups, our analysis is limited to Black, Hispanic, and white officers (97% of officers in the sample). Stops and arrests are recorded in officer-shift data once per officer contributing to enforcement. In stop records, one is listed as "first" officer, suggesting a leading role, although arrest records contain no such labeling. (Text S3.9 and fig. S2 conduct additional analyses of first officers only, yielding a highly similar pattern of results.)

Figure 1 depicts a small slice of the data's temporal and geographic coverage: a 3-month window in CPD's Wentworth District (District 2), a highly segregated 7.5-square-mile territory on Chicago's South Side that is 95% Black and consistently ranks among the city's most violent districts in per-capita crime. The district spans 15 patrol areas, shaded according to racial composition. Points indicate geolocated stops, arrests, and uses of force during this period. The figure also offers a detailed portrait of four anonymized CPD officers working in District 2 in this time. For example, "Officer A" is female, Black, does not speak Spanish, and joined the CPD in 1994; "Officer C" is a white male who joined the CPD in 2006 and does not speak Spanish. The figure shows officers' specific patrol slots and each officer's behavior while on assignment.

Identifying racial, ethnic, and gender disparities in policing

Although the CPD has diversified over time, officer groups face substantially different working conditions. Figure 2 displays the average characteristics of districts—22 geographic regions delineated by the CPD—to which officer groups are assigned. Differences associated with officer race and ethnicity are most stark. In general, Black officers work in districts with 47% higher per-capita violent crime and large co-racial populations—on average 68% co-racial, far higher than the average 26 to 30% co-racial and co-ethnic districts where white and Hispanic officers serve. However, white officers are generally overrepresented relative to the resident population; 20% of the 95%-Black Wentworth District officers are white; in Austin (District 15), where residents are 93% Black, officers are 55% white. (Text S2.2 discusses district organization. Figures S3 to S5 present district-level data; assigned officer demographics somewhat track those of district residents, but officers are disproportionately white.) Even within districts, text S2.3 and figs. S6 and S7 demonstrate that marginalized groups are tasked with patrolling different beats, compared to white or male colleagues. (All p-values < 0.001.)

These patterns underscore a central difficulty in evaluating how officer behavior varies across demographic groups. Namely, white officers work in different environments from minority officers, on average. Men and women also work during different hours of the day (text S2.3 and figs. S9 and S10). This means that after aggregating to large geographic units and time periods, observed behavioral differences may simply reflect differing patrol environments, rather than differences in policing approaches.

To make valid comparisons, we assemble a panel dataset in which rows represent officer-shifts—roughly 8-hour patrol periods—and characterize officers' actions and their context. (Text S1.2 describes these datasets; text S1.4 and S1.5 elaborate on preprocessing.) In each of these 2.9 million patrol assignments, we measure officers' stops, arrests, and uses of force, whether they engaged in any of these activities or not. We compared officers of different demographic profiles working in the same specific combination of month and year (e.g., January 2012), day of week, shift time, and assigned "beat" (a patrol task, typically corresponding to small geographic areas less than one square mile; see text S1.6 for a detailed discussion of beat assignments)—a narrow slice of time and space that we abbreviate "MDSBs" (month, day of week, shift, beat). CPD also assigns officers to "day-off groups," which determine who works on rotating dates according to a scheme set late in each calendar year for the following year, representing a large exogenous source of variation in the officers that are available to serve in a particular patrol assignment on any given date. This procedure greatly mitigates threats from self-selection (e.g., officers choosing to take

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Table 1. Summary of data on officer behavior (counts), 2012-2015. Summary statistics after pruning officers, shifts, and event records aggressively to ensure common circumstances in our behavioral analysis.

	Black officers	Hispanic officers	White officers	Female officers	Male officers
Stops	253,576	356,493	729,000	264,526	1,074,543
Arrests	47,396	65,581	132,272	43,625	201,624
Uses of force	1,355	2,081	4,513	1,125	6,824
Shifts	829,818	689,091	1,413,771	740,015	2,192,665
Officers	1,834	1,674	3,439	1,785	5,162

Fig. 1. Detailed view of the data. The right panel maps police activity in a single CPD district (Wentworth, District 2), with green circles, blue squares, and red crosses respectively indicating the locations of stops, arrests, and uses of force. Polygons represent geographic beats and are shaded by their proportion of minority residents. Lower left panels chart the behavior of four anonymized officers over a 3-month period, with panel headers indicating the year officers joined CPD, gender, ethnicity or race, and language ability. Boxed incidents are described further in the left middle panel, which reports civilian and incident specifics. Finally, the top left panel indicates how the four selected officers are assigned to patrol beats over dates and times, with vertical gray bars indicating weekends.

days off when crime spikes), helping to ensure that the officers we compare are facing common circumstances, on average. This design also ensures that comparisons of officer activity have common denominators, as those working in comparable places and times have the same opportunity to take enforcement action. (See text S1.6 and figs. S11 and S12 for further details on CPD shift assignment procedures and related analytic strategy. Text S3.6 and fig. S13 demonstrate how common alternative approaches in prior work can mislead analysts about the magnitude or even the sign of these effects. Text S3.3 examines clock-in/out times by officer race and finds no meaningful differences in shift duration.)

Because our analytic approach relies on comparisons between officers deployed to the same MDSBs, our inferences are limited to MDSBs in which cross-group comparisons are feasible, e.g., in which both Black and white officers are both deployed. (See texts S3.1 and S3.2 for discussions of the data-generating process and statistical estimand, as well as how this analytic strategy circumvents the threats to inference posed by unobserved differences in patrol environments.) Thus, our estimates do not necessarily generalize to every officer, time, or location in Chicago. (Text S3.4 and fig. S8 provide details on the roughly 40% of patrol assignments where cross-group, within-MDSB comparisons are unavailable—typically smaller patrol tasks with fewer assigned officers—because assigned officers are all from the same demographic group. Feasibility does not meaningfully vary with resident racial composition, and nearly every officer rotates through patrol tasks with feasible comparisons.) Officers from different demographic groups also differ in unobserved ways. We therefore estimate the average difference in officer behavior resulting from deploying an officer of one demographic profile—and all the associated traits of that demographic label—relative to another, holding environmental conditions constant. Our results do not reflect the hypothetical effect of changing an officer's race or gender while holding their other traits fixed. Rather, they reflect average differences in treatment that civilians can expect when police commanders assign officers of one demographic group to their temporal and geographic vicinity, compared to another officer group, holding circumstances equal.

We present differences estimated using ordinary least squares with MDSB fixed effects, though our results are robust to several other estimators, including the addition of flexible controls for experience (see text S3 for estimation details and additional results). All statistical inferences are based on officer-level block bootstrap confidence intervals (CIs) that are robust to unobserved officer-specific peculiarities.

Results

Figure 3 displays average differences in the number of stops, arrests, and uses of force by Black and Hispanic officers (relative to white officers) and female officers (relative to male) working in the same MDSBs. Turning first to Black officers, Fig. 3 shows that when faced

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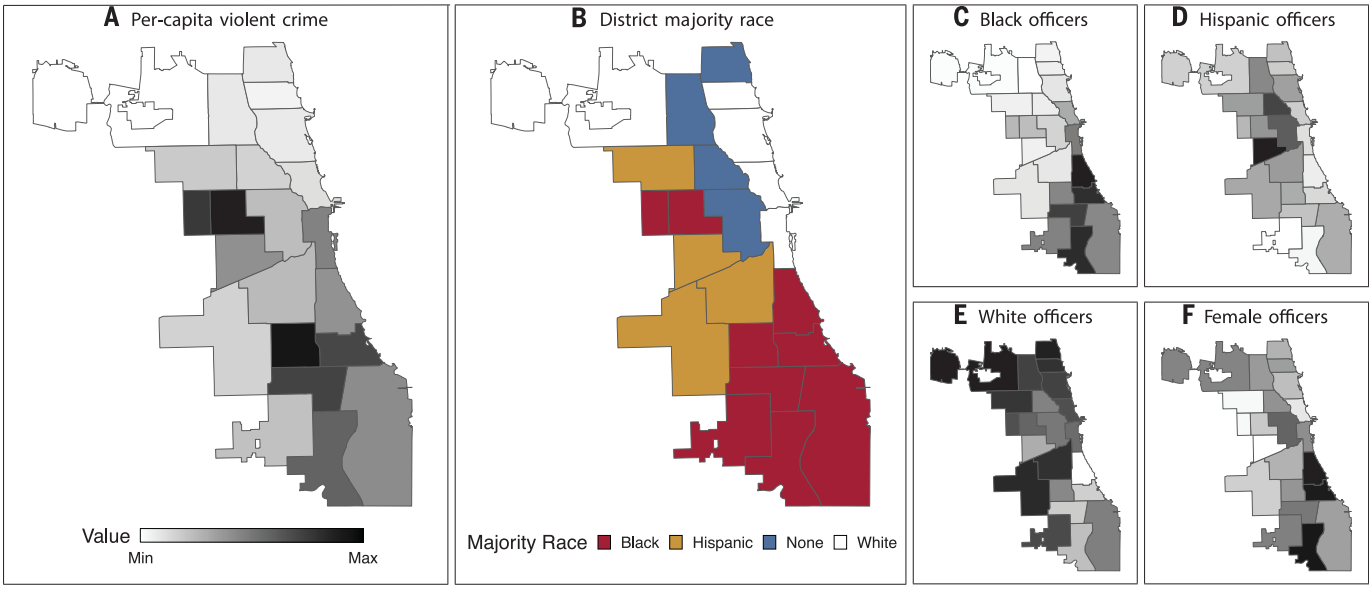

Fig. 2. Unit assignments of various officer groups. (**A** and **B**) Panels depict background information on CPD districts. (**C** to **F**) Panels show, for each district, the proportion of assigned officers belonging to a particular demographic group. Majority race of district residents is based on 2010 decennial Census data; all other plots use 2013–2016 CPD records.

with comparable working conditions over the course of 100 shifts, this group makes 15.16 fewer stops and 1.93 fewer arrests, and it uses force 0.10 fewer times than white counterparts on average—that is, compared to white officers given the same patrol assignment, in the same month, on the same day of the week, and at the same shift time (all $p_{adj} < 0.001$ after Benjamini-Hochberg multiple-testing correction for all cross-group comparisons and all categories and subcategories of enforcement). These gaps are large, representing 29, 21, and 32% of the average stop, arrest, and use-of-force volume for white officers citywide (see tables S1 to S3 for average enforcement activity by officer group. See tables S4 to S8 for full numeric results, including an additional analysis of Spanish language ability).

Figure 4 shows that these disparities are not uniform across situations but are driven by a reduced focus on Black civilians. For example, deploying Black officers instead of white yields 12.55 fewer stops of Black civilians per 100 shifts, a reduction equal to 39% of typical white-officer volume. By contrast, Black officers make only 1.31 fewer stops of white civilians per 100 shifts than their white counterparts (reduction equal to 17% of typical white-officer volume; all adjusted p-values < 0.001). The large differences in these scaled effects (39% versus 17%) suggest that they are not explained by the fact that police engage Black civilians in Chicago more often in general. Put another way, in 100 typical white-officer shifts, Black-civilian stops (32.45) are far more frequent than white-civilian stops (7.53), occurring with a baseline ratio of 4.31. By contrast, when deploying Black officers in lieu of white officers,

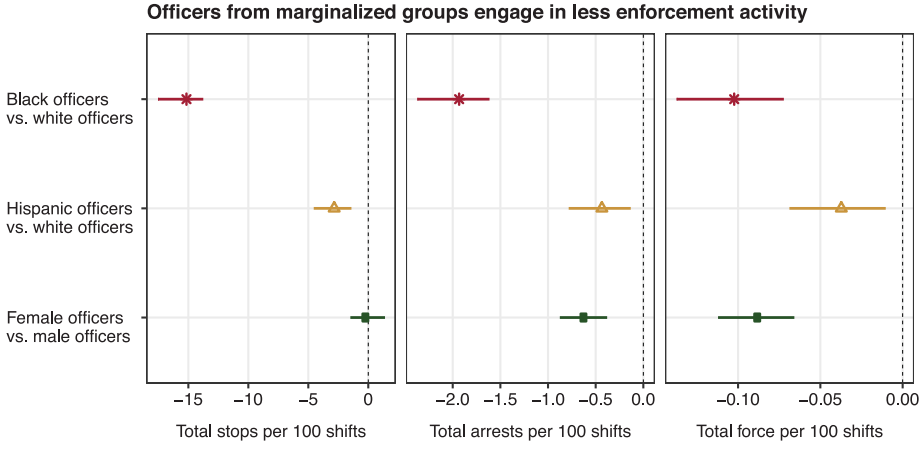

Fig. 3. Effects of deploying officers from marginalized groups on total enforcement activity. Average within-MDSB differences in rates of stops, arrests, and uses of force across officer groups. See tables S4 to S8 for numeric results.

the ratio of the reductions in stops of Black civilians (−12.55) to white civilians (−1.31) is twice as large: 9.60 (95% CI [8.00, 12.98]). Similarly, the ratio of the reductions on Black-civilian arrests (−1.46) to white-civilian arrests (−0.18) is 7.99 (95% CI [5.60, 15.01]). This is significantly larger than the ratio of typical white-officer enforcement volumes (5.90 for Black civilians, 1.17 for white civilians, ratio of 5.03). Black officers also deploy force against Black civilians 0.08 fewer times per 100 shifts than their white counterparts, and they use force that results in injury 0.03 fewer times per 100 shifts (reductions equal to 38 and 39% of typical white-officer volume, respectively; all adjusted p-values < 0.001). Reduced use of force against Black civilians accounts for 83% of the overall force disparity between white and Black officers.

Compared to white officers working in comparable places and times, Black officers also show reduced focus on enforcement activities that are more discretionary in nature. For example, Black officers make 5.72 fewer stops per 100 shifts for "suspicious behavior" (a reduction equal to 31% of average white-officer volume). The reduction resulting from deploying Black officers on drug arrests (−0.31 per 100 shifts) is also estimated to be larger than the effect on violent arrests (−0.23 per 100 shifts). Though the raw effects on drug and violent crime arrest counts are not statistically distinguishable from one another, comparing these effects to typical baseline enforcement

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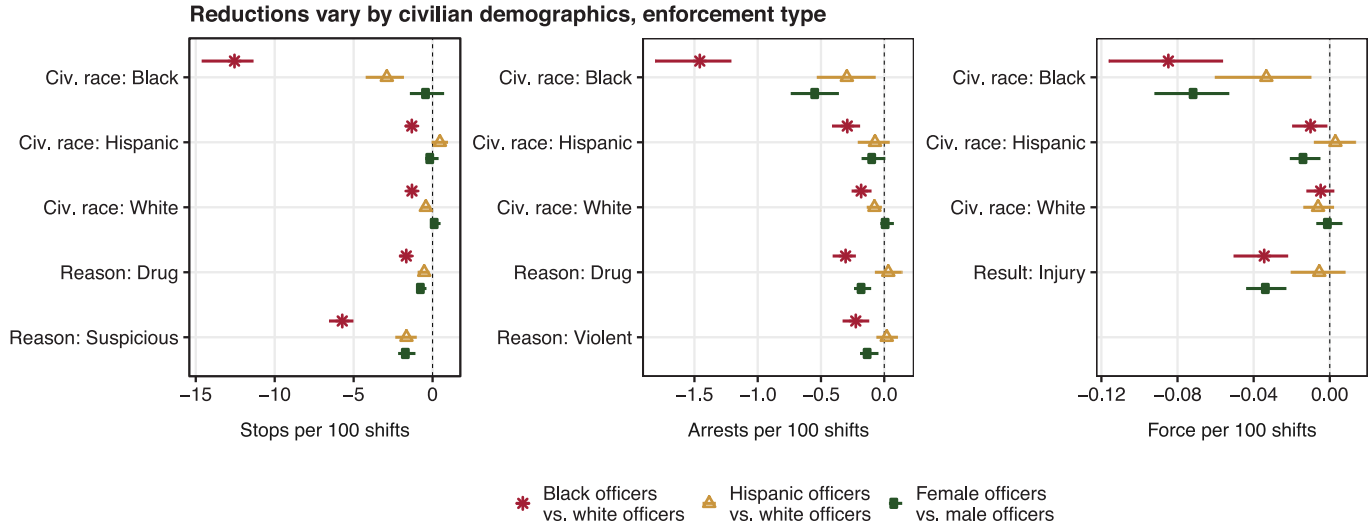

Fig. 4. Effects of deploying officers from marginalized groups, by enforcement subcategory. Average within-MDSB differences in rates of stops, arrests, and uses of force across officer groups, for selected subcategories of each enforcement type. See fig. S14 and tables S4 to S8 for complete subcategory results.

volume puts them in context. The ratio of these reductions, 1.36 (95% CI [0.87, 2.71])—i.e., slightly larger reductions in drug arrests versus violent-crime arrests—is larger than the baseline ratio of drug arrests (1.13 per 100 shifts) to violent arrests (2.16 per 100 shifts) typically made by white officers (ratio of 0.52). (See text S3.5, tables S4 to S8, and fig. S14 for detailed results, including additional enforcement subcategories. Text S3.8 and figs. S15 to S18 show that results obtained with a wide range of alternative estimators are almost identical.)

These patterns are largely in line with the hopes of proponents of racial diversification, who seek to reduce abusive policing and mass incarceration, especially in Black communities.

Like their Black colleagues, Hispanic officers facing the same working conditions conduct fewer stops, make fewer arrests, and use force less than white officers, though the gaps are more modest. Notably, disparities are primarily driven by less engagement with Black civilians; Hispanic officers exhibit nearly the same average volume of enforcement activity against Hispanic civilians as do white officers. Hispanic officers make 2.84 fewer stops per 100 shifts (a reduction equal to 6% of average white-officer volume, p_{adj} = 0.001); 0.44 fewer arrests per 100 shifts (p_{adj} = 0.012, 5%); and 0.04 fewer uses of force per 100 shifts (p_{adj} = 0.021, 12%). We caution that the descriptor "Hispanic" encompasses a range of cultures and national origins that our data do not allow us to parse and that may correspond to important heterogeneity in behavior. (For example, in tables S7 and S8, we show suggestive evidence for differences between Hispanic officers who can and cannot speak Spanish.) More fine-grained data on officers of Hispanic identity are needed to explore this finding.

We also find differences in female officers' behavior relative to male officers, though these are generally smaller in magnitude. Female officers make 0.61 fewer total arrests per 100 shifts (a reduction equal to 7% of average male officer arrests) and 0.54 fewer arrests of Black civilians per 100 shifts (reduction equal to 9% of average male volume, both $p_{adj} < 0.001$). Indeed, about 88% of this disparity in arrest rate is due to reduced arrests of Black civilians. We also find that female officers use force 0.09 fewer times overall (a reduction equal to 28% of average male volume) and 0.07 fewer times per 100 shifts against Black civilians (reduction equal to 31% of average male volume, both $p_{adj} < 0.001$), with the latter accounting for 81% of overall force reduction. (Figure S19 shows that within each racial and ethnic group, female officers use significantly less force than male counterparts.)

Figure 5 displays core results estimated separately in districts where different racial and ethnic resident groups represent majorities. The gap in activity between white and Black officers is most pronounced in majority-Black areas of the city—further evidence that reductions in stops, arrests, and uses of force by Black officers are driven by a reduced focus on Black civilians. Figure S20 illustrates how enforcement differences in these areas are particularly pronounced at night. We see much less heterogeneity across neighborhoods when comparing Hispanic and white officers. (For additional results on gender heterogeneity, see text S3.7 and fig. S19.)

Discussion

Violent and sometimes fatal encounters between white police officers and unarmed racial minorities continue to prompt widespread calls for law enforcement reforms. Protests against police brutality and racial bias remain ubiquitous, including recent unrest in the location of this study, Chicago. Prominent among the many proposed reforms is increasing the level of racial and gender diversity of police agencies. To evaluate the impact of this approach on police-civilian interactions, we leverage unusually rich data on police personnel and activity in Chicago, a jurisdiction that has already instituted diversity reforms.

We first show that minority officers receive vastly different patrol assignments. Without accounting for this disparity, there is no way to meaningfully characterize the differences in behavior across officer groups. In supplemental analyses (text S3.6 and fig. S13) we replicate our core analysis while iteratively imposing data restrictions common in previous analyses to show that common data constraints can lead to severely mistaken inferences, sometimes reversing substantive conclusions entirely. These disparities between analytic approaches suggest one explanation for the at-present mixed conclusions in studies on officer diversity: Data scarcity has imposed severe analytic constraints that can produce divergent, mistaken conclusions.

We account for these differences in working conditions by analyzing officers working in comparable places and times. We show that Black officers are less likely to stop, arrest, and use force against civilians, especially Black civilians, relative to white officers. These disparities are driven by reduced discretionary stops and arrests for petty crimes, including drug offenses, which have long been thought to fuel mass incarceration (*1*). By contrast, Black officers' violent crime enforcement is

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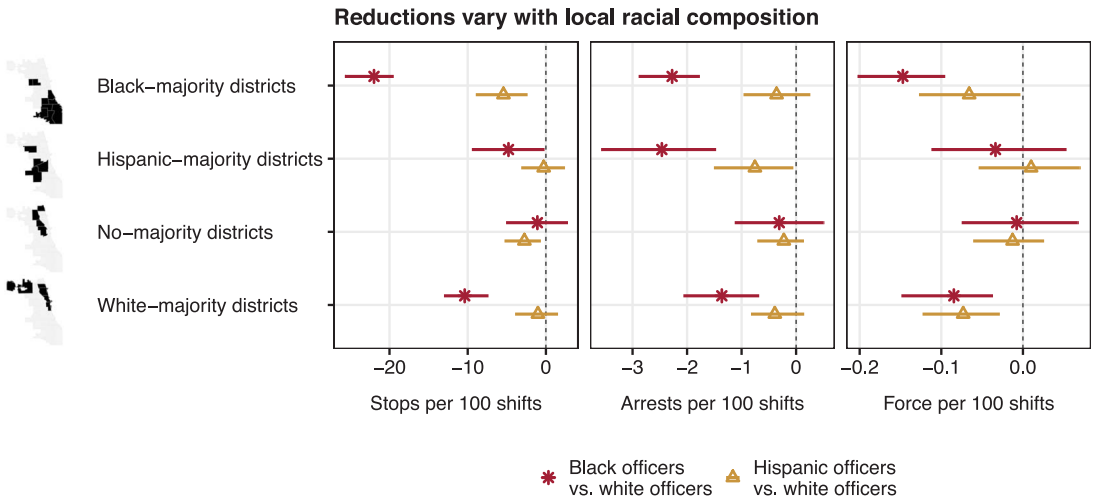

Fig. 5. Effects of deploying officers from marginalized groups, by local racial composition. Average within-MDSB differences in stops, arrests, and uses of force across officer groups, disaggregating CPD districts by majority-resident demographics.

only slightly lower than white officers'. Hispanic officers display lower levels of enforcement activity than whites overall, but their behavior toward Hispanic civilians is broadly comparable to that of white officers, a pattern that deserves further investigation with more fine-grained data on this ethnic group. We also find substantial differences in the behavior of female officers—both relative to male officers generally and within racial and ethnic groups—with the most substantial differences pertaining to use of force. The vast majority of gendered reductions stem from a reduced focus on arresting and using force against Black civilians.

Our results also reveal patterns requiring further study, especially with regard to causal mechanisms. One explanation for these disparities centers on racial bias, i.e., white officers are more likely than Black officers to harass Black civilians. Technically, it is also possible that Black officers respond more leniently when observing crimes in progress (*25*). Though we cannot fully disentangle these observationally equivalent explanations, our data show that these enforcement disparities are predominantly focused on relatively minor crimes, not violent offenses, suggesting little trade-off in terms of public safety. Arbitrating between these competing mechanisms will require objective information on civilian behavior.

Nevertheless, these results help evaluate the promise of proposed personnel reforms by showing what average behavior can be expected when deploying officers of a given demographic profile, relative to their counterparts, holding environmental factors fixed. If we were unable to discern disparities in behavior across these officer groups, diversity reforms would be unlikely to meaningfully alter the volume and character of policing. In fact, not only do we observe differences in enforcement patterns, we also find that these gaps remain nearly identical when adjusting for officer experience (see figs. S15 to S17), an important consideration when extrapolating from retrospective assessments to the future hiring of inexperienced officers. Despite these effects, and even in this highly diverse department, Black and Hispanic civilians in Chicago are engaged by police at rates disproportionate to their shares of the population (though such disparities can arise from a variety of sources, including deployment patterns, civilian behavior, or officer bias). Although our results show that diversity in law enforcement can narrow these gaps, it cannot, on its own, fully address the substantial racial disparities that characterize the American carceral system.

Our analysis uses data from a single city, allowing for an unusually detailed analysis at some cost in generalizability. At present, a patchwork of nonstandard record-keeping and disclosure practices across roughly 18,000 U.S. police agencies (*39*) has severely impeded broader policy evaluations. Our approach, patrol-assignment analyses, offers a useful and widely applicable template for other scholars to follow when testing whether our findings hold in other places and times. But these efforts will require collection of similar data elsewhere, likely necessitating open-records requests, litigation, or data-transparency reforms to compel the release of patrol records that have rarely been shared freely. Acquiring data in these ways can also help mitigate selection bias that can result from forming research partnerships with police agencies, an approach that may skew the literature by focusing on cooperative jurisdictions.

Taken together, these results strongly suggest that diversification can reshape police-civilian encounters. But extrapolation to future hiring hinges on whether recruits come from a comparable pool of potential employees and are deployed in comparable ways. Policing is evolving rapidly, and a complete understanding of the efficacy of reforms requires continued, in-depth research. As officers from marginalized communities increasingly join police forces, their presence will necessarily lead to shifts in deployment and department norms. In turn, shifting deployment patterns may reshuffle officers with particular dispositions to different locations. This could produce different results if, for example, the white officers who are most violent toward Black civilians are then removed from Black neighborhoods, which could shrink the gap in force rates relative to Black officers. If so, the cost-benefit calculus of diversification would be further complicated. The framework that we provide in this study provides a template for future scholars to reevaluate these effects as necessary.

The effects of diversification are likely neither simple nor monolithic. Officers are multidimensional, and crafting effective personnel reforms will likely require thinking beyond the coarse demographic categories typically used in diversity initiatives and consideration of how multiple attributes relate police to the civilians they serve.

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ACKNOWLEDGMENTS

Data for this project were gathered in collaboration with the Invisible Institute, with the help of S. Stecklow and E. Herman. We thank R. Ryley and the Lucy Parsons Lab for generously sharing data. We thank R. Austin, P. Bayer, S. Black, T. Burch, B. Canes-Wrone, T. Clark, J. Grimmer, A. Harris, D. Kronick, A. Harvey, H. Jefferson, G. Lenz, B. Magaloni, T. Mendelberg, V. Weaver, A. White, and attendees of the 2019 Princeton Policing Conference for helpful feedback. This project was approved by institutional review boards at Columbia University; Princeton University; University of California, Irvine; and University of Pennsylvania. **Funding: Author contributions:** All authors contributed equally to this article. **Competing interests:** D.K. and J.M. are paid consultants for the U.S. Department of Justice Civil Rights Division and the American Civil Liberties Union. R.R. worked for the Invisible Institute and the plaintiffs in *Campbell v. City of Chicago* between 2017 and 2018. **Data and materials availability:** All data, interactive replication materials, and guaranteed reproducible results are publicly available as a Code Ocean capsule (*40*). We encourage readers to probe and extend our analyses.

SUPPLEMENTARY MATERIALS

science.sciencemag.org/content/371/6530/696/suppl/DC1
Supplementary Text
Figs. S1 to S20
Tables S1 to S8
References (*41*–*46*)

17 July 2020; accepted 7 December 2020
10.1126/science.abd8694

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Science

The role of officer race and gender in police-civilian interactions in Chicago

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Science, 371 (6530), • DOI: 10.1126/science.abd8694

Diversity in policing

In the wake of high-profile police shootings of Black Americans, it is important to know whether the race and gender of officers and civilians affect their interactions. Ba *et al.* overcame previous data constraints and found that Hispanic and Black officers make far fewer stops and arrests and use force less than white officers, especially against Black civilians. These differences are largest in majority-Black neighborhoods in the city of Chicago (see the Perspective by Goff). Female officers also use less force than male officers. These effects are supportive of the efficacy of increasing diversity in police forces.

Science, this issue p. 696; see also p. 677

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