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IZA DP No. 17729

Empirical Analysis of Racial Disparities in Policing

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ABSTRACT

Empirical Analysis of Racial Disparities in Policing*

Racial disparities within the criminal justice system continue to be a pressing issue in the U.S. In this paper, we analyze data for almost four million stops by California's fifteen largest law enforcement agencies in 2019, examining the extent to which people of color experience searches, enforcement, intrusiveness, and use of force differently from white people. Black Californians are more likely to be searched than white Californians, but searches of Black civilians reveal less contraband and evidence. Black people are overrepresented in stops not leading to enforcement as well as in stops leading to an arrest. While differences in location and context for the stop significantly contribute to racial disparities, notable inequities remain after accounting for such factors. These disparities are concentrated in traffic stops. A notable proportion of which lead to no enforcement or discovery—suggesting that gains in efficiency and equity are possible. Through a "veil of darkness" analysis, we find evidence that racial bias may be a contributing factor to disparities in traffic stops for Black and Latino drivers. These findings suggest that traffic stops for non-moving violations deserve consideration for alternative enforcement strategies.

JEL Classification: J15, K42, K14, H41

Keywords: policing, racial disparities, racial bias, stops, searches, enforcement

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Introduction

California's Racial Justice Act (RJA) recently went into full effect, enshrining extra legal protections for equal racial treatment under the law. It outlines protections against cases of explicit racism and implicit bias in court or from law enforcement and racially disparate charging, convicting, or sentencing.[1] Though the scope of RJA claims is still being determined by courts, data and research will be pivotal in determining where these disparities persist. As PPIC research has shown, significant racial disparities exist throughout the criminal justice system, including law enforcement stops and arrests. In this piece, we examine the legislation, potential data sources that could be used, and existing PPIC work that could illuminate the RJA claims related to systemic disparities.

Inequities in policing are especially stark between Black and white individuals: while Black residents make up about 6% of California's population, roughly 16% of all arrests are of Black residents.[2] Disparities are even greater at later stages in the criminal justice process, where Black people account for about 25% of county jail populations, about 26% of the probation population, and 29% of the prison population.[3]

A recent PPIC survey found that 62% of Californians believe that the criminal justice system is biased against African Americans.[4] Among African Americans, 88% hold this view.[5] And while 54% of adults in California say police treat all racial and ethnic minorities fairly "almost always" or "most of the time," only 18% of African Americans share that view.[6]

Recognizing the need for data and research on law enforcement stops, the California legislature passed the Racial and Identity Profiling Act (RIPA) in 2015.[7] The legislation—which was rolled out in waves based on the size of the agency—now requires all law enforcement agencies in California to collect officer-perceived demographic and other detailed data for all pedestrian and traffic stops.[8] The data from 2019, before the COVID-19 pandemic, had four million stops made by the fifteen largest law enforcement agencies in the state.[9]

This article builds on the authors' previous work on arrests in California that found that criminal justice reforms implemented over the last decade have reduced racial disparities in arrests, bookings, and incarceration.[10] However, wide gaps remain. The RJA elevates the importance of understanding these gaps across the full spectrum of criminal justice outcomes. Here, we broaden the scope of outcomes to law enforcement stops and eventually traffic stops, which include the many interactions Californians have with law enforcement that do not lead to arrests.

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[1] CAL. PENAL CODE § 745.
[2] *See* Sarah Bohn et al., *Racial Disparities are Widespread in California*, PUB. POL'Y INST. OF CAL. (Jun. 3, 2020), https://www.ppic.org/blog/racial-disparities-are-widespread-in-california/; Heather Harris & Sean Cremin, *California's Prison Population*, PUB. POL'Y INST. OF CAL. (Sept. 2024), https://www.ppic.org/publication/californias-prison-population/.
[3] *See* Bohn et al., *supra* note 2; *see also* Harris & Cremin, *supra* note 2.
[4] MARK BALDASSARE ET AL., PUB. POL'Y INST. OF CALI., PPIC STATEWIDE SURVEY: CALIFORNIANS AND THEIR GOVERNMENT (2021), https://www.ppic.org/publication/ppic-statewide-survey-californians-and-their-government-march-2021.
[5] *Id.*
[6] Rachel Lawler & Deja Thomas, *Black Californians Stand Out in Views of Police Treatment,* PPIC BLOG, (Apr. 16, 2021), https://www.ppic.org/blog/black-californians-stand-out-in-views-of-police-treatment/.
[7] A.B. 953, 2015 Gen. Assemb., Reg. Sess. (Cal. 2015).
[8] *Id.*
[9] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT (2021) https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.
[10] Magnus Lofstrom et al., *Proposition 47's Impact on Racial Disparity in Criminal Justice Outcomes*, PUB. POLICY INST. OF CAL. (Jun. 2020), https://www.ppic.org/publication/proposition-47s-impact-on-racial-disparity-in-criminal-justice-outcomes/.

Given that the starkest disparities are between Black and white Californians, our research focuses on inequities between these groups in frequency of stops, reasons for stops, and outcomes to provide a more complete picture of what those experiences are like. We examine the likelihood that the individual stopped is searched, whether the search yielded any contraband or evidence, and if the stop resulted in any enforcement measures. We also examine intrusiveness and use of force, measured by reported outcomes such as being asked to step out of the vehicle, being handcuffed, and the involvement of an officer's weapon. We then separately analyze outcomes by statewide (California Highway Patrol) and local (police and sheriff's departments) jurisdictions. Finally, we investigate the potential role of racial bias in traffic stops, and we conclude with additional considerations for policy and practice based on this research.

Background on the Racial Justice Act

The RJA, passed in 2020, prohibits the state from "seeking a criminal conviction or sentence on the basis of race, ethnicity, or national origin" for a person in any case beginning on or after January 1, 2021.[11] In 2022, AB 256 amended the RJA to be applicable retroactively for a person in any case prior to 2021.[12] From the narrow standard set in *McCleskey v. Kemp*, which required a defendant to prove that purposeful and explicit discrimination was applied against them,[13] the RJA fundamentally shifts how equal protection under the law is applied to Californians by expanding how a defendant can prove racially disparate treatment in their case. Defendants in California can now establish claims of discrimination in their cases by showing legal system actors exhibited explicit or *implicit* racial bias toward them or their race, *or* by showing statistical disparities in charging, convicting, or sentencing by race, ethnicity, or national origin in the same county.[14] As this landmark legislation has the potential to transform California's criminal justice system, it also highlights the urgent need to use data and research to identify where systemic racial disparities occur.

Understanding how data and evidence are important to RJA claims requires a closer look at the specific Penal Code language. An RJA violation is established if the defendant proves at least one of four claims. Under the first two claims, a violation occurs if a defendant proves that a judge, attorney, law enforcement officer, expert witness, or juror involved in the case exhibits bias or uses "racially discriminatory language"[15] toward a defendant's race, ethnicity, or national origin, "whether or not purposeful," in court or during proceedings.[16] Importantly, these first two provisions allow for explicit or implicit bias directed toward defendants or their race by legal system actors to be sufficient for an RJA violation.

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[11] A.B. 2542, 2020 Gen. Assemb., Reg. Sess. (Cal. 2020).
[12] *See Racial Justice Act Retroactivity AB 256*, OFFICE OF THE STATE PUB. DEFENDER, https://www.ospd.ca.gov/wp-content/uploads/2023/06/AB-256-Racial-Justice-Act-retroactivity_Accessible.pdf.
[13] McCleskey v. Kemp, 481 U.S. 279 (1987).
[14] CAL. PENAL CODE § 745.
[15] *Id.* at § 745(h)(4). According to this code, racially discriminatory language is defined as "language that, to an objective observer, explicitly or implicitly appeals to racial bias, including, but not limited to, racially charged or racially coded language, language that compares the defendant to an animal, or language that references the defendant's physical appearance, culture, ethnicity, or national origin. Evidence that particular words or images are used exclusively or disproportionately in cases where the defendant is of a specific race, ethnicity, or national origin is relevant to determining whether language is discriminatory." *Id.*
[16] *Id.* at §§ 745(a)(1)-(2).

This paper provides evidence related to the third and fourth RJA claims because they are focused on the use of statistical data to reveal potential systemic disparities by race, ethnicity, and national origin. The third type of RJA violation relates to whether a person is charged or convicted of more serious offenses than people of other races who have "engaged in similar conduct and are similarly situated" *and* the evidence establishes that the prosecution "more frequently sought or obtained" convictions for these more serious offenses against people with the same race as the defendant in the same county.[17] The fourth violation is similar to the third but applies to sentencing. It says that a violation occurs if a longer or more severe sentence is imposed on a defendant relative to "other similarly situated individuals" convicted of the same offense *and* longer sentences were "more frequently imposed" for that offense on people of the same race as the defendant in the same county.[18] In sum, an RJA violation may be established if defendants prove that racial disparities exist in charging, convicting, or sentencing for similar offenses in the same county that disproportionately impact people from their racial group. If a court rules that a violation has occurred, it is required to impose a specific remedy to the violation.[19] Remedies include declaring a mistrial, discharging the jury and empaneling a new one, dismissing enhancements or special circumstances, reducing charges, and vacating convictions or sentences and ordering new proceedings.[20]

Importantly, the 745(a)(3) and (a)(4) claims do not have any mentions of bias, which suggests that the appropriate test is examining racial disparities of individuals who engage in similar conduct after contextual factors are considered (similarly situated). Bias, implicit or explicit, implies some prejudicial behavior from a person, whereas a test of racial disparities highlights differing treatment under the law, regardless of intent or determinant of disparity, after ensuring similar conduct and situation.

Additional provisions of the RJA shed light on how and which types of data can be used to inform RJA claims of racial disparity and wider discussions of racial disparities in California's criminal justice system. First, the law clarifies that disparities in "more frequently sought or obtained" charges or convictions or "more frequently imposed" sentences are established if the "totality of the evidence demonstrates a significant difference . . . comparing individuals who have engaged in similar conduct and are similarly situated" and the prosecution cannot establish race-neutral reasons for this difference.[21] Importantly, this "significant difference" does not require "statistical significance"—though the court may consider it—and evidence can include "statistical evidence, aggregate data, or non-statistical evidence."[22] When evaluating the "totality of evidence," the law requires courts to "consider whether systemic and institutional racial bias, racial profiling, and historical patterns of racially biased policing and prosecution may have contributed to, or caused differences observed in, the data or impacted the availability of data overall."[23]

Although the RJA legislation does not formally define individuals engaged in "similar conduct," one possible interpretation is individuals who commit similar criminal offenses. "Similarly situated" individuals refer to there being similar factors relevant in charging and sentencing across groups, but do not require individuals to be identical.[24] However, "conviction history may be a relevant factor to the severity of the charges, convictions, or sentences"—that is, when comparing outcomes between groups, one may need to consider criminal histories (i.e.,

[17] *Id.* at § 745(a)(3).
[18] *Id.* at § 745(a)(4).
[19] *Id.* at § 745(e).
[20] *Id.* at §§ 745(e)(1)-(4). Once an RJA violation has been found in court, the defendant is no longer eligible for the death penalty.
[21] *Id.* at § 745(h)(1).
[22] CAL. PENAL CODE § 745(h)(1).
[23] *Id*.
[24] *Id*.

only comparing people with no criminal histories across racial groups).[25] As mentioned above, when comparing criminal histories, the court does need to consider whether systemic racial bias, profiling, and/or biased *policing* played a role in generating any differences in the criminal histories. Solidified through the *Young* decision (discussed below),[26] the RJA makes clear the value in understanding racial disparities in police stops, which provides essential context for understanding disparities in charging, sentencing, and convicting. Taken together, these RJA provisions motivate a range of analyses that can be used to identify racial gaps relevant not only to individual RJA claims, but also for accomplishing the legislation's ultimate intent to "eliminate racially discriminatory practices in the criminal justice system."[27] However, this can only be accomplished if relevant, high-quality criminal justice data exists.

Relevant RJA Court Cases

Given the unprecedented nature of the RJA, court cases continue to inform its implementation in practice. A 2022 appellate court ruling provided initial guidance on the RJA's discovery provision allowing a defendant to obtain relevant evidence of a violation "[u]pon a showing of good cause."[28] In *Young v. Superior Court of Solano County*, the defendant used publicly available statistics to argue that racial profiling in traffic stops led to his arrest for drug possession.[29] The defendant's discovery motion under the RJA that showed racial disparities in charges of drug possession was originally denied by a trial court.[30] However, an appellate court vacated that decision, ruling that Young was entitled to discovery based on "the minimal threshold showing that is required to . . . provide . . . *Pitchess* discovery."[31] Although the appellate court did not go as far to grant Young's request for discovery, the decision signaled that potential racial disparities in traffic stop data is sufficient to trigger discovery in any relevant RJA claim. This decision underscores the importance of investigating potential disparities in law enforcement stops, which may inform RJA claims.

Subsequent court cases have set meaningful legal precedents regarding the RJA's application and how data can impact RJA litigation. An important early case addressed the "prima facie" standard of the RJA. Once a motion is filed in trial court and a defendant makes a prima facie showing of an RJA violation, the law states the court must hold a hearing.[32] The law clarifies that a prima facie showing requires the defendant to establish that there is a "substantial likelihood"—more than a mere possibility, but less than more likely than not—that a violation occurred.[33] In *Finley v. the Superior Court of San Francisco,* the trial court determined that the defendant did not establish a prima facie violation of the RJA, as the defense's argument did not meet the substantial likelihood standard.[34] However, the *Finley* appellate ruling reversed this decision, holding that an RJA prima facie standard requires a lower threshold than a general habeas claim.[35] The appellate ruling also held that courts must accept a

[25] *Id*.
[26] Young v. Super. Ct. of Solano Cnty., 79 Cal. App. 5th. 138 (Cal. Ct. App. 2022).
[27] A.B. 2542, 2020 Gen. Assemb., Reg. Sess. (Cal. 2020).
[28] CAL. PENAL CODE § 745(d).
[29] *Young,* 79 Cal. App. 5th. at 141.
[30] *Id.* at 144.
[31] *Id*. at 141.
[32] CAL. PENAL CODE § 745(c).
[33] *Id.* at § 745(h)(2).
[34] Finley v. Super. Ct. of S.F. Cnty., 95 Cal. App. 5th 12, 18 (Cal. Ct. App. 2023).
[35] *Id*. at 22.

defendant's factual allegations as true (unless allegations are clearly unsupported by evidence) at the prima facie stage and not make credibility determinations until evidentiary hearings.[36]

Defendants are beginning to use data and evidence in court to support claims of RJA violations based on systemic racial disparities (745(a)(3) and 745(a)(4) RJA violations). In *People v. Windom*, four Black co-defendants were charged with murder, conspiracy, and gang allegations including a gang murder special circumstance—which carries life without parole—by the Contra Costa County District Attorney's Office.[37] Pursuant to the RJA, specifically California Penal Code Section 745(a)(3), the defendants successfully filed a motion to dismiss the gang murder special circumstance after showing racial disparities in charging practices in the county.[38] The defense used prosecutorial data to show that Black defendants who were "similarly situated" and engaged in "similar conduct" as non-Black defendants were 44% more likely to be charged with gang murder special circumstances in Contra Costa County.[39] The court found that this disparity was "significant" and "more likely than not" was caused by a defendant's race rather than random chance.[40] The court also found that the prosecution failed to show a "race-neutral cause of explanation" and the gang murder special circumstance charges were dismissed.[41] This first-of-its-kind ruling highlights the relationship between data that show systemic racial disparities and the impact it can have on RJA litigation.

Data Sources

California provides some key databases to examine racial disparities in criminal justice outcomes. However, availability, granularity, and reliability vary between sources. In terms of publicly available data, the California Department of Justice (DOJ)'s OpenJustice Data Portal houses stop, use of force, and arrest information.[42] The RIPA police stop data is the main focus of this article and is discussed in more detail below. We use RIPA data to examine racial disparities in law enforcement interactions and traffic stops.

Publicly available arrest data includes race and location information helpful for understanding aggregate trends. While this data is helpful to understand general disparities in arrests, more granular data is needed to satisfy the RJA's definition of racial disparity. The DOJ's Automated Criminal History System (ACHS), which is not publicly available, includes incident-level arrest information on offense level, violation type, and arrestee information such as gender, age, and race/ethnicity.[43] With more detailed criminal history information, ACHS data is helpful for satisfying the RJA's definition of "similar conduct" of "similarly situated" individuals. Researchers are already using ACHS data to highlight disparities, though data limitations remain.[44] Those

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[36] *Id*. at 22-23.
[37] *See* Annelise Finney, *California's Groundbreaking Racial Justice Act Cuts its Teeth in Contra Costa*, KQED (Feb. 13, 2024), https://www.kqed.org/news/11975584/californias-groundbreaking-racial-justice-act-cuts-its-teeth-in-contra-costa.
[38] CAL. PENAL CODE § 745(a)(3); Finney, *supra* note 30.
[39] Evan Kuluk, *Disparate Racial Impact of Discretionary Prosecutorial Charging Decisions in Gang-Related Murder Cases: Litigating the Racial Justice Act in People v. Windom*, 29 BERKELEY J. CRIM. L. 71, 76 (2024).
[40] *Id*. at 77.
[41] *Id*. at 77-78.
[42] *See OpenJustice Data Portal*, CA DOJ, https://openjustice.doj.ca.gov/data (last visited Oct. 17, 2024).
[43] *See Data Request Process*, ROB BONTA ATTORNEY GENERAL, https://oag.ca.gov/research-services/request-process (last visited Oct. 17, 2024).
[44] *See e.g.*, Colleen Chien, W. David Ball & William Sundstrom, *Proving Actionable Racial Disparity Under the California Racial Justice Act*, 75 U. CAL. COLL. LAW JOURNAL 1 (2023).

researchers have created a RJA data tool for practitioners to assess racial disparities in a variety of criminal justice outcomes, from arrest to conviction and sentencing.[45]

In California, certain district attorneys have partnered with data-proficient organizations to clean, format, and visualize trends in their data, which can be disaggregated by race. For example, the Yolo County District Attorney has partnered with Measures for Justice to develop a data dashboard that can examine the breakdown of case flows in the office by race to increase transparency and evaluate policy goals,[46] while the Los Angeles District Attorney has partnered with the California Policy Lab to release a Prosecution Data Hub to provide this information to researchers so they can evaluate the efficacy of policies.[47] Other datasets that could inform RJA-related claims are the New York University's (NYU) Jail Data Initiative,[48] which provide data on a handful of localities within California, and the Stanford Open Policing Project,[49] which maintains a website that houses stop data from many localities across the U.S. and produces its own research using these data.

RIPA data on police stops

The California state legislature passed the Racial and Identity Profiling Act (RIPA) in 2015 (AB 953), which required all law enforcement agencies in California to collect perceived demographic and other detailed data regarding all pedestrian and traffic stops by 2023.[50] A "stop" is defined as "any detention by a peace officer of a person, or any peace officer interaction with a person in which the officer conducts a search."[51]

The requirements for collecting California traffic and pedestrian stop data are arguably the largest and most expansive efforts in the United States, although other states have collection requirements as well. According to the NYU School of Law Policing Project, as of 2019, approximately twenty states have laws that mandate collection of stop data on varying amounts of traffic stops.[52] Of these twenty states, only California, Oregon, and Illinois mandate data collection for both traffic and pedestrian stops.[53]

States such as California, Illinois, North Carolina, and Maryland make their data publicly available and include regular reports that analyze that data.[54] The remaining states vary in their data availability and published reports. A number of cities and counties, in states with data collection laws and without, publish their own stop data.[55]

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[45] *See Racial Justice Act Tool [beta]*, PAPER PRISONS (Sept. 16, 2024), https://rja.paperprisons.org/.
[46] *See Yolo County, CA Case Flow Data*, COMMONS SHARED BY MEASURES FOR JUST. (May 28, 2024), https://commons.measuresforjustice.org/prosecutor/yoloda/case-flow.
[47] *See Los Angeles Prosecutorial Data Hub*, CAL. POL'Y LAB, https://capolicylab.org/data-resources/los-angeles-prosecution-data-hub/ (last visited Oct. 17, 2023).
[48] *See Jail Data Initiative*, SOC. SCI. RSCH. COUNCIL PUB. SAFETY LAB, https://jaildatainitiative.org/ (last visited Oct. 17, 2023).
[49] *See The Open Policing Project*, THE STANFORD OPEN POLICING PROJECT (2023), https://openpolicing.stanford.edu/ (last visited Oct. 17, 2023).
[50] A.B. 953, 2015 Gen. Assemb., Reg. Sess. (Cal. 2015); *see infra* Technical Appendix A for more details.
[51] *Id*.
[52] Marie Pryor, PhD, et al., *Collecting, Analyzing, and Responding to Stop Data: A Guidebook for Law Enforcement Agencies, Government, and Communities*, POLICING PROJECT NYU SCHOOL OF LAW, https://www.policingproject.org/stopdata (last visited Oct. 17, 2023).
[53] *See* Hannah Rose Anderson and Alexa Perlmutter, *It's time to start collecting stop data: A case for comprehensive statewide legislation, POLICING PROJECT 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.
[54] *Id*.
[55] *See Stop, Question and Frisk Data from New York Police Department,* https://www.nyc.gov/site/nypd/stats/reports-analysis/stopfrisk.page.

The data elements mandated by the RIPA statute include person-level and stop-level information. For person-level data, which we refer to throughout as personal traits, officers are required to record their perception of the identity characteristics for each individual stopped, including:

- race or ethnicity
- gender
- approximate age
- lesbian, gay, bisexual, or transgender (LGBT) status
- English fluency
- disability (including behavioral health status).[56]

Officers are prohibited from asking the person stopped to self-identify these characteristics.[57]

Stop-level elements include:

- the reason for the stop (including a traffic violation, reasonable suspicion, parole/probation/mandatory supervision, knowledge of an outstanding arrest warrant/wanted person, and consensual encounter resulting in search)
- any action taken by an officer during the stop (such as whether the suspect was removed from the vehicle, removed from the vehicle by physical contact, subject to curbside detention, handcuffed, subject to canine search, or an officer's use of an electronic device, chemical spray, or firearm)
- the reason for search (probable cause, consent, search warrant, visible contraband, odor of contraband, etc.)
- any contraband or evidence discovered (such as guns, drugs, drug paraphernalia, alcohol, money, or stolen property)
- the enforcement result of stop (including no action, warning, citation, cite and release, and booking).[58]

The data do not allow for corroborating the accuracy of the reported information, including the race and identity of the individual stopped and the specific actions taken by the officer. Nor do the data include information on the race and ethnicity of the officer.

The data collection mandate for the pedestrian and traffic stops began in 2018, rolling out according to agency size based on the number of peace officers employed.[59] The largest agencies were required to submit their first reports by April 1, 2019 (commonly called Wave 1).[60] Wave 1 included the eight largest agencies in CA employing 1,000 or more peace officers and stop data collected between July 1 and December 31, 2018.[61] Wave 1 agencies include the California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, and San Francisco, and the sheriff's departments of Los Angeles, San Bernardino, Riverside, and San Diego

[56] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT 21 (2021) https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.
[57] CAL. GOV'T CODE § 12525.5(b)(7).
[58] *Id.* at § 12525.5(b)(8).
[59] *Id.* at § 12525.5(a)(2).
[60] *Id.*
[61] *Id.*

Counties.[62] The second group of agencies, employing between 667 and 1,000 peace officers, began collecting stop data on January 1, 2019.[63] Wave 2 agencies included the police departments of the cities of Fresno, Long Beach, Oakland, Sacramento, and San Jose, and the sheriff's departments of Orange and Sacramento Counties.[64] After January 1, 2022, virtually all law enforcement agencies in California were required to collect stop data.[65]

We examine pre-pandemic stops in 2019 from the fifteen largest law enforcement agencies in California. This includes California Highway Patrol (CHP), eight police departments (Los Angeles, San Diego, San Francisco, Sacramento, Fresno, San Jose, Long Beach, and Oakland) and six county sheriff's departments (Los Angeles, San Bernardino, Sacramento, San Diego, Riverside, and Orange County). These agencies recorded 3,992,074 stops of motorists and pedestrians during the 2019 calendar year.[66] Technical Appendix A provides details and a discussion of how the distribution of stops and outcomes vary across agencies.

Disparities in Stops and Reasons for Stops

A primary objective of this article is to examine disparities between the experiences and outcomes Black and white Californians have during a stop. To start, we must examine racial disparities in the frequency of being stopped by law enforcement, and disparities in the reported reason for the stop.

When we compare shares each group represents in stops to shares by population, we find considerable disproportionality statewide. Black residents accounted for 16% of stops made by all participating law enforcement agencies during 2019, but constituted only 7% of the state's population.[67] Residents identified by law enforcement as Middle Eastern or South Asian were also overrepresented in stops (5%) compared to their share of the state's population (2%).[68]

White residents were represented fairly proportionally in stops (33%), compared with their population share (34%), as were Latino residents (39% and 41%, respectively).[69] Asian individuals were underrepresented in stops (6%) compared with their share of the population (12%), as were multiracial residents (1% and 3%, respectively).[70]

Individuals identified as Pacific Islanders were overrepresented (0.5% of stops, compared with 0.3% of the population) and those identified as Native American were underrepresented (0.2% and 0.3% for stops and population, respectively).[71] The percentage-point differences are small, but as a proportion of the population

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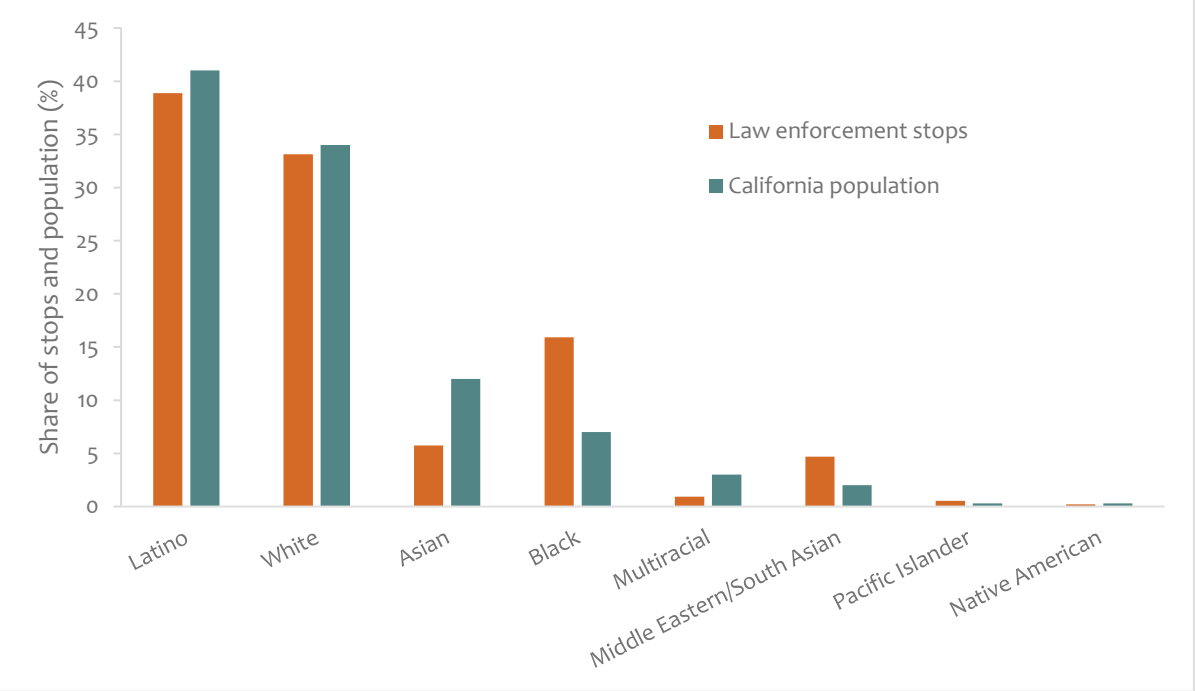
[62] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT 16 (2021) https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.
[63] CAL. GOV'T CODE § 12525.5(a)(2).
[64] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT 16 (2021) https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.
[65] CAL. GOV'T CODE § 12525.5(a)(2).
[66] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT 8 (2021) https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.
[67] *See infra* Figure 1.
[68] *See infra* Figure 1.
[69] *See infra* Figure 1.
[70] *See infra* Figure 1.
[71] *See infra* Figure 1.

share, these differences are considerable. Again, the racial/ethnic identification comes solely from the officer making the stop.

FIGURE 1
Black residents are overrepresented in police stops

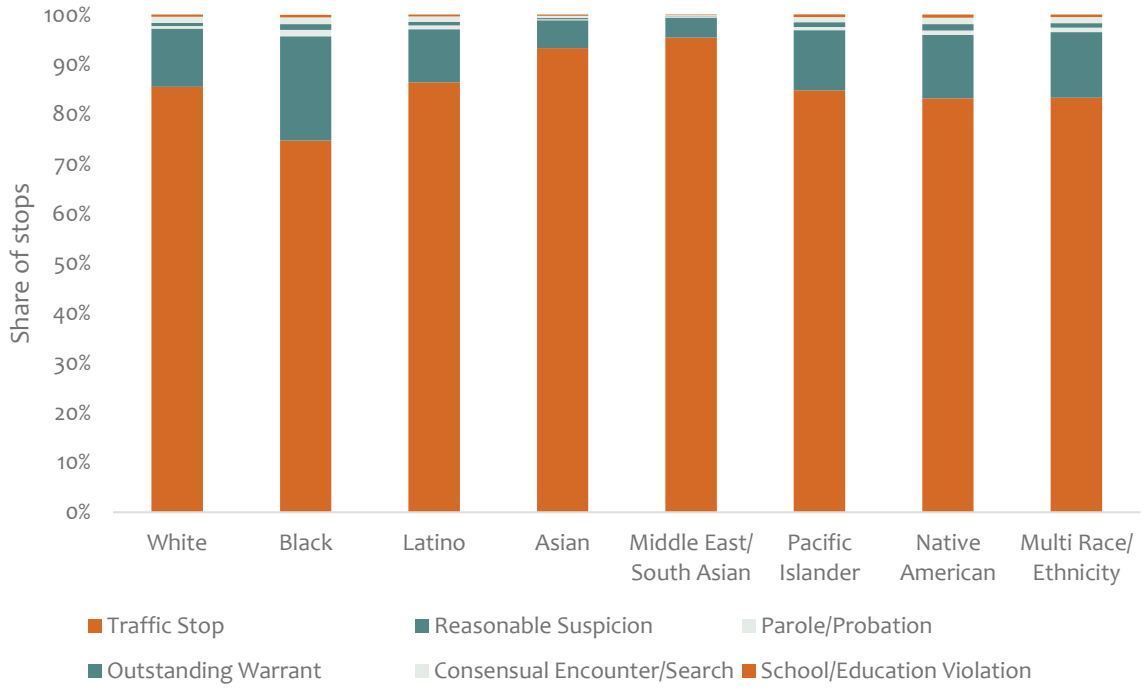


SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019; RIPA Board Report 2021 population calculations using American Community Survey (2018).

The data also reveal differences between reasons for stopping people of different races. For example, while more than 90% of stops of individuals perceived to be Asian or of Middle East/South Asian origin are stopped for traffic violations, about 75% of Black Californians stopped are for traffic violations.[72] Conversely, officers report reasonable suspicion in 21% of stops of Black people, while 11.7% of white people and 5.6% of Asian people are stopped for reasonable suspicion.[73]

FIGURE 2
A greater share of Black people than white people are stopped for reasonable suspicion

[72] *See infra* Figure 2.
[73] *See infra* Figure 2.



SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

While fewer stops involve individuals known by the officer to be on parole or probation or to have an outstanding warrant, their status provides officers with rights to stop and search without consent or reasonable suspicion.[74] The percent of Black residents stopped who are on parole or probation is twice that of white residents (1.2% vs. 0.6%), and it is notably higher than Latino (0.8%) and Asian (0.2%) residents stopped as well.[75]

The share of stops for an outstanding warrant is also twice as high for Black compared to white residents, also at 1.2% versus 0.6%.[76] Technical Appendix Table A2 details differences across race and ethnicity in officer-perceived gender, age, mental health status, and whether the officer was responding to a call for services.

Differences in Stop Experiences

A key way this article extends the 2021 RIPA Board report is by taking a closer look at racial disparities in the experiences and outcomes of individuals after they are stopped by law enforcement.[77] More specifically, we analyze the following four stop outcomes:

- likelihood the individual stopped was searched;

[74] *See* CAL. PENAL CODE § 3067(b)(3).
[75] *See supra* Figure 2.
[76] *See supra* Figure 2.
[77] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT (2021) https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.

- likelihood contraband or evidence (weapons, property, drugs or other, such as alcohol or cell phones) was found, if the person was searched;
- likelihood of enforcement, hierarchically defined below:
    - at least a warning was issued;
    - at least a citation (for an infraction, such as a speeding ticket) was issued;
    - an arrest (cite and release or booked into jail); or
    - booked into jail.
- likelihood of experiencing intrusive action or use of force, hierarchically defined below:
    - at least asked to step out of the vehicle;
    - at least some physical contact (such as removed from car);
    - at least detained (curbside or patrol car);
    - at least handcuffed;
    - involved an officer's weapon (such as aiming a firearm, but not necessarily firing the weapon); or
    - officer weapon used (including use of firearm, electronic device, chemical spray, or baton).

Of the almost four million reported stops in 2019, slightly more than 452,000 led to a person or property being searched.[78] In close to 97,000 of those searches—about 21%—the officer found some contraband or evidence.[79] That is, officers found contraband or evidence in about 2.4% of *all* police stops.[80]

The most common contraband was drugs or drug paraphernalia, found in a little more than 60,000 searches.[81] The second most common category is other, which includes alcohol and cell phones (presumably evidence).[82] In 18,507 searches, the officer found a weapon or ammunition.[83] In more than 11,000 instances, the officer found property, which includes money that was either illegally held or was evidence.[84]

In the vast majority of stops, about 88%, the officer issued at least a warning.[85] The officer issued at least a citation in 64% of all stops.[86] Officers made an arrest—either a cite and release, or a booking—in 11% of stops, and booked over 6% of stopped individuals into jail.[87]

While most stops led to some level of enforcement, intrusive actions were less common. For example, individuals were at least asked to step out of the vehicle during about one in six stops.[88] Officers report some physical contact in over 14% of stops, most of which involved detaining a person curbside or in the patrol car.[89]

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[78] *See infra* Table 1.
[79] *See infra* Table 1.
[80] *See infra* Table 1.
[81] *See infra* Table 1.
[82] *See infra* Table 1.
[83] *See infra* Table 1.
[84] *See infra* Table 1.
[85] *See infra* Table 1.
[86] *See infra* Table 1.
[87] *See infra* Table 1.
[88] *See infra* Table 1.
[89] *See infra* Table 1.

In about 8% of stops, the person was at least handcuffed.[90] The percentage of stops that involved an officer's weapon (which captures an officer pointing a firearm as well as when the officer uses the firearm or other weapon) is relatively small, at 0.42%.[91] However, while the percentage is small, there are 16,918 stops where the officer reports that their weapon was involved.[92] In 1,930 instances (0.05% of stops), the officer used a weapon—meaning the officer discharged a firearm or electric device such as a Taser, used a chemical spray or a baton, or a canine bit the stopped individual.[93] The stop data did not capture whether anyone was injured as a result of the use of a weapon, or any other action taken during the stop.

TABLE 1

Post-Stop Outcomes, All 15 Law Enforcement Agencies, 2019.

	Total Number	Share of All Stops	Share of Searches
Stops	3,992,074		
Searches	452,164	11.3%	
Contraband/Evidence Found			
Any	96,807	2.42%	21.4%
Drugs	60,493	1.52%	13.4%
Other	25,880	0.65%	5.7%
Weapon	18,509	0.46%	4.1%
Property	11,415	0.29%	2.5%
Enforcement, at least			
Warning	3,515,247	88.1%	
Citation	2,553,928	64.0%	
Arrest	452,501	11.3%	
Booking	262,511	6.6%	
Intrusiveness/Use of Force, at least			
Step Out of Vehicle	653,728	16.4%	
Physical Contact	581,602	14.6%	
Detained (curbside/car)	571,713	14.3%	
Handcuffed	336,330	8.4%	
Officer Weapon Involved	16,918	0.42%	
Officer Weapon Used	1,930	0.05%	

SOURCES: Authors calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Black Californians are notably overrepresented in police stops and officers report reasons for stops that can vary across race and ethnicity, and across law enforcement agencies. We next consider the role of context of a stop in an effort to better understand underlying factors to the patterns observed in outcomes.

[90] *See infra* Table 1.
[91] *See infra* Table 1.
[92] *See infra* Table 1.
[93] *See infra* Table 1.

Differences Across Agencies

Unsurprisingly, stops were not distributed evenly among law enforcement agencies. As shown below in Figure 3, the California Highway Patrol, with jurisdiction over the entire geography of the state and an emphasis on enforcing traffic violations, had the lion's share of stops recorded by these fifteen agencies: 2,172,023, or more than half of the total for the year, 54%. Among the fifteen largest law enforcement agencies, stops made by police departments account for about 31% of total stops, with Los Angeles PD accounting for more than half of these stops, or 712,807, followed by San Diego PD with 187,231 stops.[94] Oakland PD reported the fewest stops, 24,395, among the state's eight largest police departments.[95] California's six largest county sheriff's departments account for about 15% of the stops, with the Los Angeles Sheriff's Department making the most stops, 196,850, followed by San Bernardino Sheriff's Department with 157,715 stops in 2019.[96]

Of course, each of these agencies serves a different jurisdiction, each with different populations and number of officers. For example, with a primary mission of highway safety, the CHP is a qualitatively different entity from either a county sheriff's department or a municipal police department, and is unique in that it patrols the entire state. To account for differences in size of the agencies, we also present in Technical Appendix Table A1 the number of stops per non-jail sworn officers. Combined, the fifteen agencies report about 105 stops per officer in 2019.[97] Breaking it down by type of agency, we observe CHP with the highest number of stops per officer, 300, compared to sixty-eight stops per officer for the eight police departments and forty-six stops per officer for the six sheriff's departments.[98] San Diego and Sacramento PDs report the highest number of stops per officer among police departments, 106 and 100 per officer in 2019 respectively, while Oakland PD had the lowest ratio of thirty-three stops per officer.[99] Among sheriff's departments, the highest number of stops per office was in San Bernardino County at 120, four times that of the Los Angeles Sheriff's Department's thirty stops per officer.[100]

Undoubtedly many factors contribute to differences in the number of stops made by agencies and the reasons for stops, including law enforcement agencies' primary mission, crime rates and types of crime, population density, driving patterns, and policing strategies. The RIPA data include information on the officer's reported reason for the stop, such as whether an officer stopped a motorist for a traffic violation; a reasonable suspicion of the individual having committed a crime; knowledge of an outstanding arrest warrant or the person being on probation or parole supervision; a juvenile believed to be truant or having violated education code, or if the stop was a consensual encounter (a situation where the individual and an officer interact, and the person is free to leave or decline to speak with the officer).[101]

As Figure 3 shows, traffic violations constituted by far the most commonly reported reason for a stop, at 85% across all fifteen agencies. Reasonable suspicion of some other violation accounted for another 12%, and consensual encounters represented about 1%, and remaining reasons constituted less than 1% each.[102]

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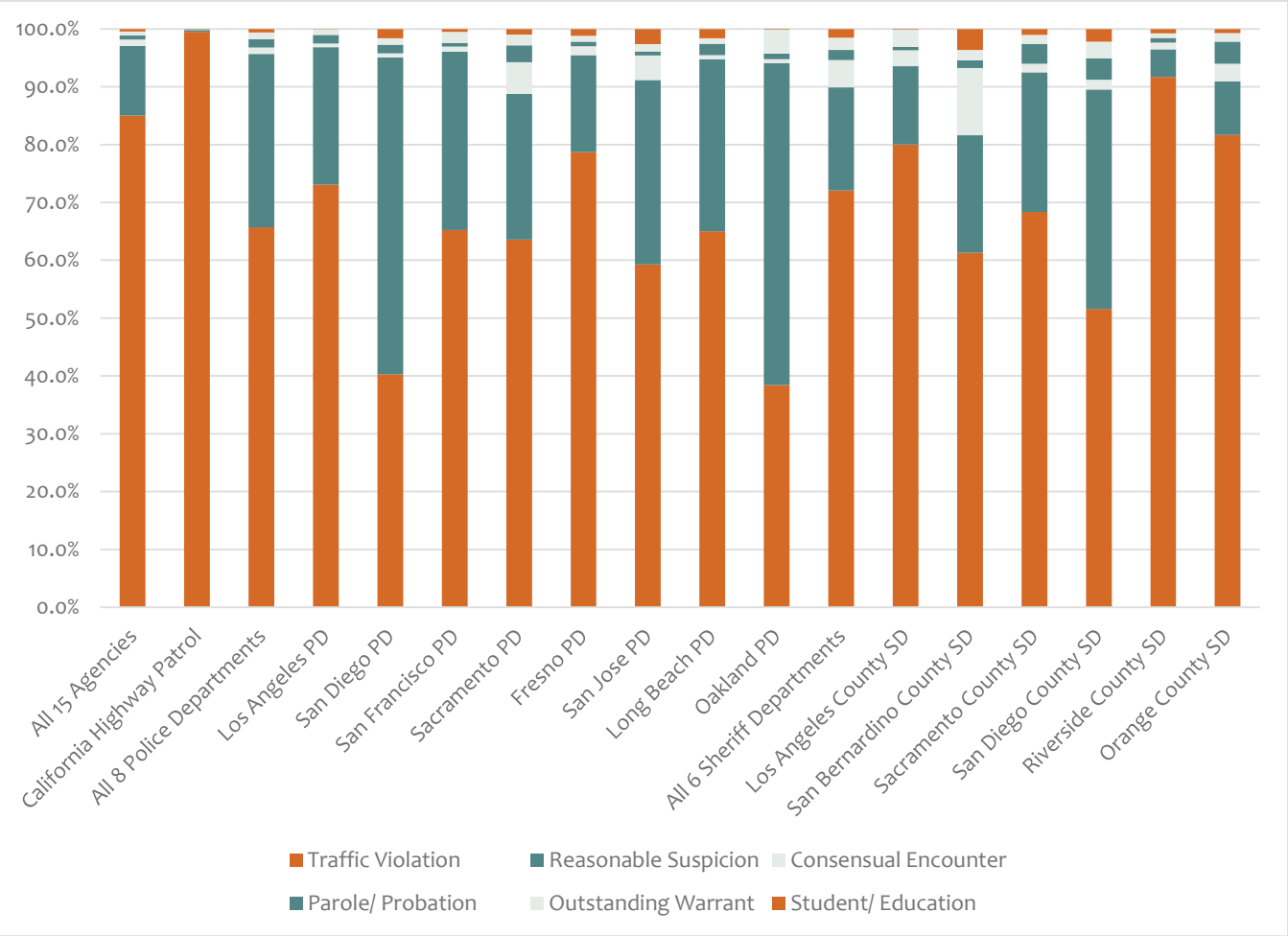
[94] *See infra* Technical Appendix Table A1.
[95] *See infra* Technical Appendix Table A1.
[96] *See infra* Technical Appendix Table A1.
[97] *See infra* Technical Appendix Table A1.
[98] *See infra* Technical Appendix Table A1.
[99] *See infra* Technical Appendix Table A1.
[100] *See infra* Technical Appendix Table A1.
[101] CAL. GOV'T CODE § 12525.5(b)(8).
[102] *See infra* Figure 3.

FIGURE 3

Most stops are for traffic violations but reasons for stops vary greatly across agencies.



SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

However, as Figure 3 shows, this breakdown varies considerably between law enforcement agencies. While traffic violation was the most commonly reported reason for a stop in most of the law enforcement agencies, the percentage varied from 99.5% for CHP to 38.4% for Oakland PD.[103] Reasonable suspicion was the reported reason for the majority of stops, about 55% by Oakland and San Diego PDs, but only about 5% and 9% respectively in stops by Riverside and Orange Counties' Sheriff's Departments.[104] While stops for consensual encounters represent the third most common reason for a stop, it is only 0.1% of stops made by the CHP and 1.1% of stops made by police departments, but makes up 4.7% of stops by sheriff's departments.[105] The highest shares of consensual encounter stops, 11.6%, were reported by San Bernardino Sheriff's Department.[106]

Technical Appendix Table A2 shows the percentage of stops by detailed race and ethnicity category, and by the law enforcement agency conducting the stop. Column percentages add to 100%. It begins with the shares of demographic characteristics—gender, sexual orientation, age, English language proficiency, and disability, as perceived and reported by the law enforcement officer—of the persons stopped in 2019. Overall, officers

[103] *See supra* Figure 3.
[104] *See supra* Figure 3.
[105] *See supra* Figure 3.
[106] *See supra* Figure 3.

perceived 71% of stops to be of cisgender male subjects, and 29% to be of cisgender female subjects, with considerable variation by race and ethnicity.[107] Officers perceived fewer than 0.2% of their stops to be of transgender persons.[108]

Whether accurate or not, officers perceived much higher percentages of Latino and Asian subjects to have limited English proficiency.[109] (Recall that the recorded race and ethnic designations are also as perceived by the officer, not as self-reported by the subject.) Officers also reported higher-than-average rates of disability among subjects they perceived to be Native American.[110] At this level of disaggregation, however, those figures may be mainly a product of small sample sizes—at 0.2% of recorded 2019 stops, Native American subjects constitute the smallest race/ethnic group.[111]

Technical Appendix Table A2 continues with the distribution of the reason for a stop, by race/ethnicity. This granular treatment of race/ethnicity demonstrates some distinctions that are typically elided by the grouping of smaller populations. For instance, people who appear to be Pacific Islanders are stopped much more frequently for "reasonable suspicion" than are people of apparent Asian or Middle Eastern/South Asian descent: 12.1%, compared to the 5% rate for all three groups in aggregate.[112] The rate of stops made in response to a call for service is more than twice as high for Pacific Islanders than for their Asian or Middle Eastern/South Asian counterparts.[113]

The incidence of the stated reason for a search also varies considerably by race/ethnicity. Note that these incidences are *not* contingent upon the officer having conducted a search. Rather, they are simply the number of times an officer recorded a certain reason for a search, divided by the number of times a person of that race/ethnicity was stopped. For instance, in 1.34% of stops made of a Black person, the officer recorded that visible contraband prompted a search.[114] This percentage reflects many stops that did not result in a search.

Technical Appendix Table A2 also shows the incidence of an officer finding contraband as a result of a search. Similarly, these numbers are not contingent upon a search having been conducted. So, for instance, an officer found drugs in 1.86% of the stops conducted on a person who appeared to be Latino.[115]

Of the fifteen agencies contributing to the 2019 record keeping, the California Highway Patrol made the majority of the stops: 54% overall, but with considerable variation by race and ethnicity.[116] That variation stems in part, of course, from the circumstances of the stop and the decisions each officer makes, but also from the different demographic makeup of the populations in the various geographic regions each agency serves.

[107] *See infra* Technical Appendix Table A2.
[108] *See infra* Technical Appendix Table A2.
[109] *See infra* Technical Appendix Table A2.
[110] *See infra* Technical Appendix Table A2.
[111] *See infra* Technical Appendix Table A2.
[112] *See infra* Technical Appendix Table A2.
[113] *See infra* Technical Appendix Table A2.
[114] *See infra* Technical Appendix Table A2.
[115] *See infra* Technical Appendix Table A2.
[116] *See infra* Technical Appendix Table A2.

Accounting for the Context of Stops

California passed the RIPA legislation in 2015 based on concerns about bias in policing that leads to different groups having different experiences with law enforcement. Beyond mandating collection of stop data, the legislation expanded and clarified the definition of racial and identity profiling to consider and rely on protected group status, such as race and ethnicity, in "deciding which persons to subject to a stop or in deciding upon the scope or substance of law enforcement activities following a stop."[117]

Research consistently finds evidence of racial bias, explicit and/or implicit, broadly in society.[118] Furthermore, research has also found racial discrimination within the criminal justice system in jury, judge, and prosecutor decisions.[119] It is perhaps unsurprising that these racial biases extend to policing, providing support to concerns historically raised by communities of color—concerns renewed in the wake of the killing of George Floyd.[120]

Many factors contribute to whether an officer stops someone and to the officer's subsequent actions. And while the RIPA data quite strongly point toward differences in stop outcomes across race and ethnicity,[121] these differences may echo circumstances that do not reflect an individual officer's bias. The reason and context for the stop likely influence an officer's decisions and actions—for example, an officer may simply warn a driver stopped for speeding. Hence, differences in stop experiences between Black and white people may reflect differences in the reasons for the stop.[122]

Regardless of race and ethnicity, if an officer observes a person committing a crime or has an outstanding warrant or a weapon, that person likely will be detained and searched, and possibly booked into jail after a stop. Such situations may be more adversarial—including the potential for use of force—than a traffic stop. If an individual

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[117] A.B. 953, 2015 Gen. Assemb., Reg. Sess. (Cal. 2015).
[118] See *generally* Marianne Bertrand & Sendhil Mullainathan, *Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination*, 94 (4) AM. ECON. REV. 94 991, 991–1013 (2004); Patrick Bayer et al., *Racial and Ethnic Price Differentials in the Housing Market*, 102 J. OF URBAN ECON. 91, 91–105 (2017); RICHARD ROTHSTEIN, THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA (2017); Carlos Avenancio-Leon & Troup Howard, *The Assessment Gap: Racial Inequalities in Property Taxation* SOC. SCI. RSCH. NETWORK SCHOLARLY PAPER ID 3465010 (October 16, 2019), https://doi.org/10.2139/ssrn.3465010; Raj Chetty et al., *Race and Economic Opportunity in the United States: An Intergenerational Perspective*, 135 (2) THE QUARTERLY J. OF ECON.711, 711–83 (2020); Patrick M. Kline, Evan K. Rose & Christopher R. Walters, *Systemic Discrimination Among Large U.S. Employers*, WORKING PAPER 29053, NATIONAL BUREAU OF ECON. RSCH. (2022), https://doi.org/10.3386/w29053.
[119] See *generally* Shamena Anwar, Patrick Bayer & Randi Hjalmarsson, *The Impact of Jury Race in Criminal Trials*, 127(2) THE QUARTERLY J. OF ECON. 1017, 1017–55 (2012); David Arnold, Will Dobbie & Crystal S Yang, *Racial Bias in Bail Decisions*, 133(4) THE QUARTERLY J. OF ECON. 1885, 1885–1932 (2018); CarlyWill Sloan, *Racial Bias by Prosecutors: Evidence from Random Assignment*, WORKING PAPER, CLAREMONT GRADUATE UNIVERSITY (2019), https://economics.nd.edu/assets/348622/sloan_jmp_cels2019_143.pdf.
[120] See *generally* Roland G. Fryer, *An Empirical Analysis of Racial Differences in Police Use of Force*, 127(3) JOURNAL OF POL. ECON. 1210, 1210–61 (2019); Elizabeth Luh, *Not So Black and White: Uncovering Racial Bias from Systematically Misreported Trooper Reports*, SOC. SCI. RSCH. NETWORK SCHOLARLY PAPER ID 3357063 (2019), https://doi.org/10.2139/ssrn.3357063; Mark Hoekstra & CarlyWill Sloan, *Does Race Matter for Police Use of Force? Evidence from 911 Calls*, WORKING PAPER 26774 NATIONAL BUREAU OF ECON. RSCH. (2020), https://doi.org/10.3386/w26774; Bocar A. Ba et al., *The Role of Officer Race and Gender in Police-Civilian Interactions in Chicago*, 371 (6530) SCIENCE 696, 696–702 (2021); Benjamin Feigenberg & Conrad Miller, *Would Eliminating Racial Disparities in Motor Vehicle Searches Have Efficiency Costs?* 137 (1) THE QUARTERLY J. OF ECON. 49, 49-113 (2022); Felipe Goncalves & Steven Mello, *A Few Bad Apples? Racial Bias in Policing*, 111 (5) AM. ECON. REV. 1406, 1406–41 (2021); Magnus Lofstrom, Brandon Martin & Steven Raphael, *Effect of Sentencing Reform on Racial and Ethnic Disparities in Involvement with the Criminal Justice System: The Case of California's Proposition 47*, 19 (4) CRIMINOLOGY & PUB. POL'Y, 1165, 1165-1207 (2020); Deepak Premkumar et al., *Police Use of Force and Misconduct*, PUB. POL'Y INSTITUTE OF CAL. (Oct. 2021), https://www.ppic.org/publication/police-use-of-force-and-misconduct-in-california/.
[121] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, ANNUAL RIPA REPORT (2021), https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-board-report-2021.pdf.
[122] *See supra* Figure 2.

is acting erratically, possibly due to behavioral health issues, an officer may shift decisions and actions. The prevalence of such situations across race and ethnicity may contribute to differences in outcomes.

Additionally, younger/inexperienced drivers may be more likely to violate traffic laws, and hence are plausibly more likely to be stopped than older and more experienced drivers. With men and adolescents/younger adults engaging in relatively more criminal activity, officers may place more scrutiny on younger men when they are stopped than on older individuals or women, independent of race/ethnicity.[123]

On average, Black Californians stopped by law enforcement are perceived to be younger compared to white Californians who are stopped.[124] People stopped are also more often males.[125] Relatively higher shares of Black persons are stopped for reasonable suspicion, outstanding warrant for an arrest, or mandatory supervision of a parolee/probationer.[126] The latter two categories make a search more likely, as a warrant for a search is not needed, nor is cause, in California.[127] Officers also report visibly seeing contraband in a higher share of stops of Black people than of white people.[128]

Among the fifteen largest law enforcement agencies, California Highway Patrol made more than 60% of all stops in 2019 of white individuals, but only about 35% of stops of Black individuals.[129] And while Los Angeles Police Department (LAPD) accounts for almost 31% of stops of Black Californians, the agency made only 10% of stops of white Californians; partly reflecting that a higher share of the Los Angeles population is Black (about 8%) compared to statewide (about 6%).[130] Agency level differences in policing strategies, missions and roles, as well as officer behavior and biases, are also possible contributing factors.

Accounting for differences in personal traits and contexts

Differences in contexts, location, and agencies likely contribute to racial disparities in stop outcomes. Our goal here is to use regression models that adjust to account for differences across race/ethnic groups in such factors and move us towards more "apples-to-apples" comparisons. That is, we seek to compare stop outcomes across race/ethnicity for, say, individuals of the same age and gender, stopped for the same reasons by a given law enforcement agency. We also adjust for whether the officer reported seeing contraband and whether the person had an outstanding warrant or is on parole or probation. As we make these adjustments, we are evaluating differences of similarly situated individuals engaged in similar conduct. However, this analysis is far more restrictive and conservative about estimating racial differences than we interpret as necessary for a RJA claim, but is helpful in addressing concerns that the differences are associated with other environmental factors.[131]

Interpreting these findings

[123] See *generally* Jeffery T. Ulmer & Darrell Steffensmeier, *The Age and Crime Relationship: Social Variation, Social Explanations*, IN THE NURTURE VERSUS BIOSOCIAL DEBATE IN CRIMINOLOGY: ON THE ORIGINS OF CRIM. BEHAV. AND CRIMINALITY 377, 377-396 (2014).
[124] *See infra* Technical Appendix Table A2.
[125] *See infra* Technical Appendix Table A2.
[126] *See infra* Technical Appendix Table A2.
[127] *See* CAL. PENAL CODE § 3067.
[128] *See infra* Technical Appendix Table A2.
[129] *See infra* Technical Appendix Table A1.
[130] *See infra* Technical Appendix Table A1.
[131] *See infra* Technical Appendix B for a detailed discussion of the analysis and regression model.

This exercise should not be interpreted as a causal analysis of race and ethnicity on outcomes and experiences, where after we account for reported relevant factors and contexts, any remaining disparities between Black and white individuals represent police bias. It may overestimate actual officer bias because the data does not capture *all* relevant factors and contexts (e.g., history of violent crimes or substance abuse). Furthermore, crime rates are often higher in some areas of a jurisdiction than in others, and hence are likely to lead to different levels of police presence and activity. If people of color are overrepresented in low-income and high-crime areas of a jurisdiction, this difference can also contribute to racial disparities in police stops. Unfortunately, the data do not allow us to account for such a possibility.

The exercise might also underestimate the prevalence of police bias if the factors that we control for, such as the reported reason for the stop, themselves represent police bias. One example may be the higher likelihood of Black individuals being stopped for reasonable suspicion than white individuals. Additionally, while an individual's status of being on parole or probation or having an outstanding warrant, is a relevant factor to adjust for since officers have additional latitude in those cases, the status itself is influenced by myriad biases in the criminal justice system.[132]

It is also important to keep in mind that the data examined is based on information an officer reports after the stop is completed, and hence provides an opportunity to report information aimed at hiding biases.[133] It is plausible that the fully adjusted racial gaps represent a conservative, lower-bound estimate of racial bias in policing, but further certainty on this point is beyond the scope of this report.

These estimated differences in outcomes across race and ethnicity serve as a starting point for understanding how experiences with law enforcement differ for people of color compared to white people. We aim to provide a more complete picture of what the data tell us these differences look like. As we will show, the approach provides information on how context affects an officer's actions and decisions, which may contribute to different experiences during a stop. Moreover, it also directs us towards contexts that deserve closer examination as particular sources of disparity.

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[132] See *generally* Shamena Anwar, Patrick Bayer & Randi Hjalmarsson, *The Impact of Jury Race in Criminal Trials*, 127 (2) THE QUARTERLY J. OF ECON. 1017–55 (2012); David Arnold, Will Dobbie & Crystal S. Yang, *Racial Bias in Bail Decisions*, 133(4) THE QUARTERLY J. OF ECON. 1885, 1885–1932 (2018); CarlyWill Sloan, *Racial Bias by Prosecutors: Evidence from Random Assignment*, WORKING PAPER, CLAREMONT GRADUATE UNIVERSITY (2019), https://economics.nd.edu/assets/348622/sloan_jmp_cels2019_143.pdf; Evan K. Rose, *Who Gets a Second Chance? Effectiveness and Equity in Supervision of Criminal Offenders,* 136(2) THE QUARTERLY J. OF ECON. 1199, 1199–1253 (2021).

[133] See *generally* Elizabeth Luh, *Not So Black and White: Uncovering Racial Bias from Systematically Misreported Trooper Reports*, SOC. SCI. RSCH. NETWORK SCHOLARLY PAPER ID 3357063 (2019), https://doi.org/10.2139/ssrn.3357063. Additionally, recent research suggests that since administrative police data, such as the RIPA data, necessarily do not include individuals who officers observe, possibly engage with, but do not detain (as is a requirement for inclusion in the RIPA data), that this likely lead to underestimates of racial bias (*See* Dean Knox, Will Lowe & Jonathan Mummolo, *Administrative Records Mask Racially Biased Policing*, 114 (3) AM. POL. SCI. REV. 619, 619–37 (2020)).

Differences in Searches

Over 10% of all stops involve a search of the person or property.[134] For Black Californians, the likelihood of being searched is more than twice that of white Californians—a search rate of 20.5% and 8.2% respectively.[135] The disparity between Black and white people stands out compared to all other race/ethnic groups; furthermore, individuals perceived to be Asian or of South Asian/Middle East origin are less likely to be searched than white individuals.[136]

Black people are more likely than white to be searched, partly due to context of stop

Focusing on the Black-white inequities, after we adjust for officer-perceived personal traits such as age, gender, and disabilities, the gap shrinks somewhat, to 10.9 percentage points.[137] When we additionally adjust for differences in the reported reason for the stop, the gap in Black-white search rates drops to 7.2 percentage points.[138]

This difference is driven by significantly higher search rates of individuals on parole/probation and with outstanding warrants compared to traffic violations, combined with more Black than white persons stopped for being on correctional supervision or having an outstanding warrant.[139] Search rates vary notably across law enforcement agencies, reflecting differences in factors such as the mission of the agency (CHP vs. police department vs. sheriff's departments), jurisdictional crime rates, and policing practices.[140]

Furthermore, demographic characteristics differ across jurisdictions. For example, Los Angeles has a higher share of Black people than San Francisco, while San Francisco has a higher share of Asians than Los Angeles.[141] If, for example, Black residents tend to live in cities where law enforcement may conduct searches more often across all racial and ethnic groups, then the Black-white disparity in search rates may partly reflect location.

When we adjust for average differences in search rate across law enforcement agencies and for fixed characteristics of a jurisdiction, the Black-white gap drops further to 4.1 percentage points.[142] In other words, adjusting for perceived personal traits, context of stop, and location reduces the gap by about two-thirds. And while this suggests that these factors matter, we also find that Black people are still 1.5 times more likely to be searched during a stop than white people.[143]

FIGURE 4
Disparities in searches narrow when adjusting for personal traits and context of stop

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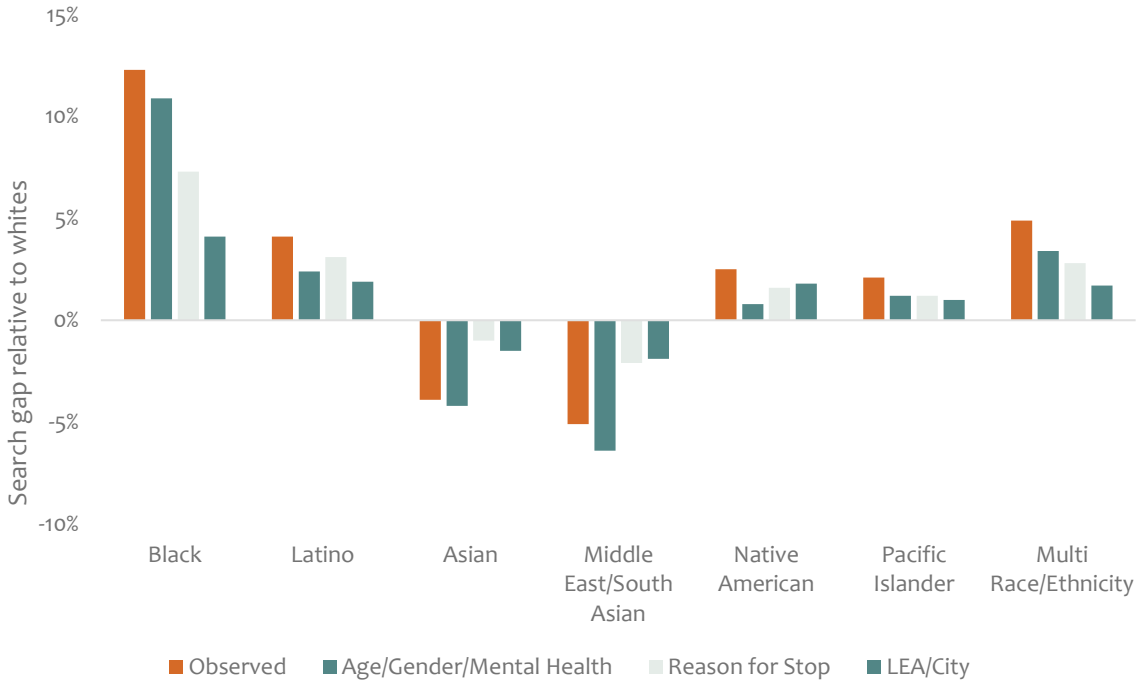
[134] *See infra* Technical Appendix Table A6.
[135] *See infra* Figure 4.
[136] *See infra* Figure 4.
[137] *See infra* Figure 4, second column.
[138] *See infra* Figure 4, third column.
[139] *See infra* Technical Appendix Table A2.
[140] *See infra* Technical Appendix Table A2.
[141] *See* U.S. Census Bureau, QuickFacts: San Francisco County, California (2023), https://www.census.gov/quickfacts/fact/table/sanfranciscocountycalifornia/PST045222; U.S. Census Bureau, QuickFacts: Los Angeles County, California (2023), https://www.census.gov/quickfacts/fact/table/losangelescountycalifornia/PST045223.
[142] *See infra* Figure 4.
[143] *See infra* Figure 4.



SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of being searched between white Californians and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95% confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies (LEA): California Highway Patrol; the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose; and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange, and Sacramento Counties. Bars represent estimated gaps relative to white residents with consecutively added controls. Detailed regression results are presented in the Technical Appendix.

Contraband and evidence are found less in searches of Black people than white

As a share of *stops*, contraband and evidence are found relatively rarely—in only about 2.4% of stops.[144] So-called *unconditional* discovery or yield rates—the share of *stops*, as opposed to the share of *searches*, in which contraband or evidence was found—vary across perceived race and ethnic origin.[145] For example, officers found some contraband and evidence in 4.4% of stops of Black persons, 2.5% of Latino persons, 1.8% of white persons, and 1% of Asian persons.[146]

As a share of *searches*, contraband or evidence was found more often—in 21.4% of searches.[147] The discovery rate, also known as *conditional* discovery or yield rate, varies little by race/ethnicity,[148] from 19.3% for those perceived to be of South Asian/Middle Eastern origin to 23.9% for those perceived to be multi-race/ethnicity.[149] Searches yield contraband or evidence in 0.6 percentage points fewer searches of Black people compared to searches of white people, or at rates of 21.6% and 22.2%, respectively.[150]

The small Black-white gap *increases* as we control for personal traits and contexts reported by the officer. Officers are more likely to find contraband and evidence in searches of teenagers and younger adults compared to

[144] *See infra* Technical Appendix Table A6.
[145] *See infra* Technical Appendix Table A6. Although officers find the majority of contraband or evidence when they search a person or property, about 30% of the time contraband or evidence are found without a search.
[146] *See infra* Technical Appendix Table A7.
[147] *See infra* Technical Appendix Table A6.
[148] *See infra* Figure 5.
[149] *See infra* Technical Appendix Table A7.
[150] *See infra* Technical Appendix Table A7.

older adults, and in searches of men compared to women.[151] Adjusting for perceived personal traits increases the gap to -0.8 percentage points, and adjusting for reason for the stop increases it to -1 percentage point.[152]

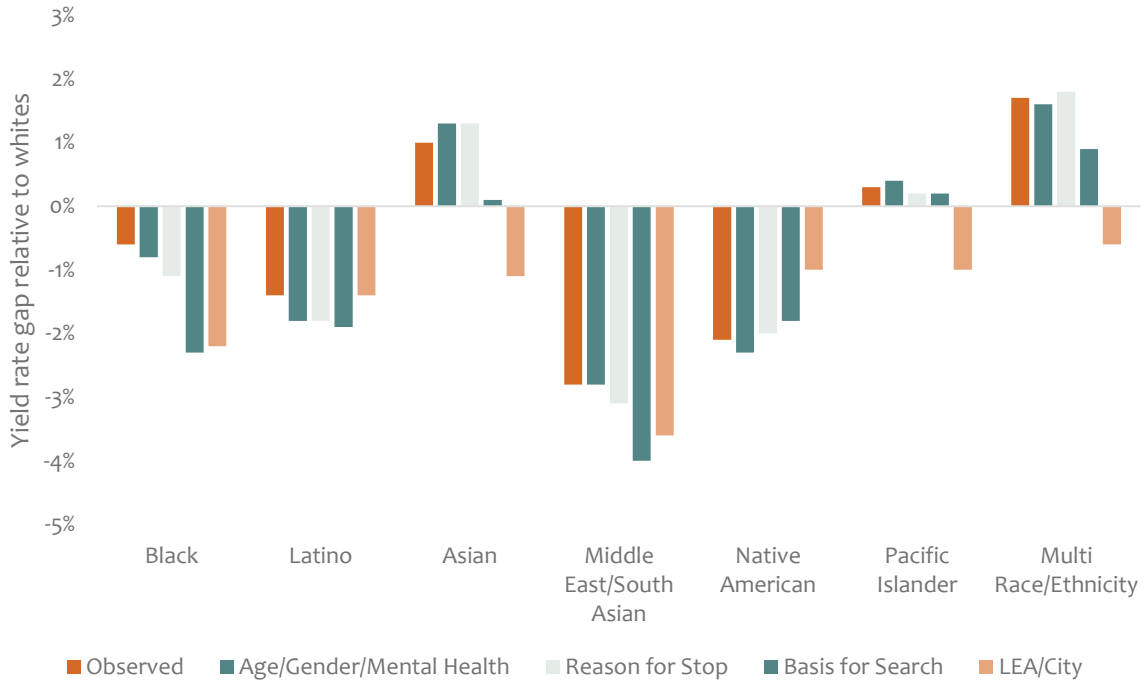
The data also include information on the basis for the search, and searches most likely to yield contraband or evidence are searches that occur when the officer reports either seeing or smelling (which includes canines) contraband or evidence. Officers more often report such basis for searches in stops of Black individuals than white, which in turn means that when we adjust for the basis, the gap more than doubles to -2.3 percentage points.[153] Put differently, officers discover contraband in their searches of Black people about 10% less than in searches of white people.

Adjusting for differences across law enforcement agencies does not appreciably change the Black-white gap in yield rates. Furthermore, when we break down contraband and evidence by separate categories (weapons, drugs, property, or other), the discovery rate gap is entirely driven by a lower likelihood of finding drugs in searches of Black than white Californians. The estimated gap, adjusted for all factors, is a statistically significant difference of -2.7 percentage points between the Black and white yield rate for drugs.[154]

[151] *See infra* Technical Appendix Table B2.
[152] *See infra* Figure 5.
[153] *See infra* Technical Appendix Table A2.
[154] *See infra* Technical Appendix Table B5.

FIGURE 5

Contraband or evidence is found in fewer searches of Black and Latino individuals than of white individuals



SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of discovering something while being searched between white Californians and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95-perent confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies: California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange and Sacramento Counties.

Differences in Enforcement

Officers issue at least a warning in about 88% of all stops; thus, most stops lead to some enforcement.[155] However, Black Californians are more likely to be stopped without any enforcement.[156]

Black people are overrepresented in stops with no enforcement and with arrests

Officers issue at least a warning in fewer stops of Black persons compared to white, at 79.3% and 89.8% respectively.[157] Put differently, about one-fifth of stops of Black persons lead to no enforcement versus one-tenth of stops of white persons. The percentage-point gap is roughly the same if enforcement is at least a citation (53% and 64% respectively).[158]

[155] *See infra* Technical Appendix Table A8.
[156] *See infra* Technical Appendix Table A8.
[157] *See infra* Figure 6; *see also infra* Technical Appendix Table A11.
[158] *See infra* Technical Appendix Table A11.

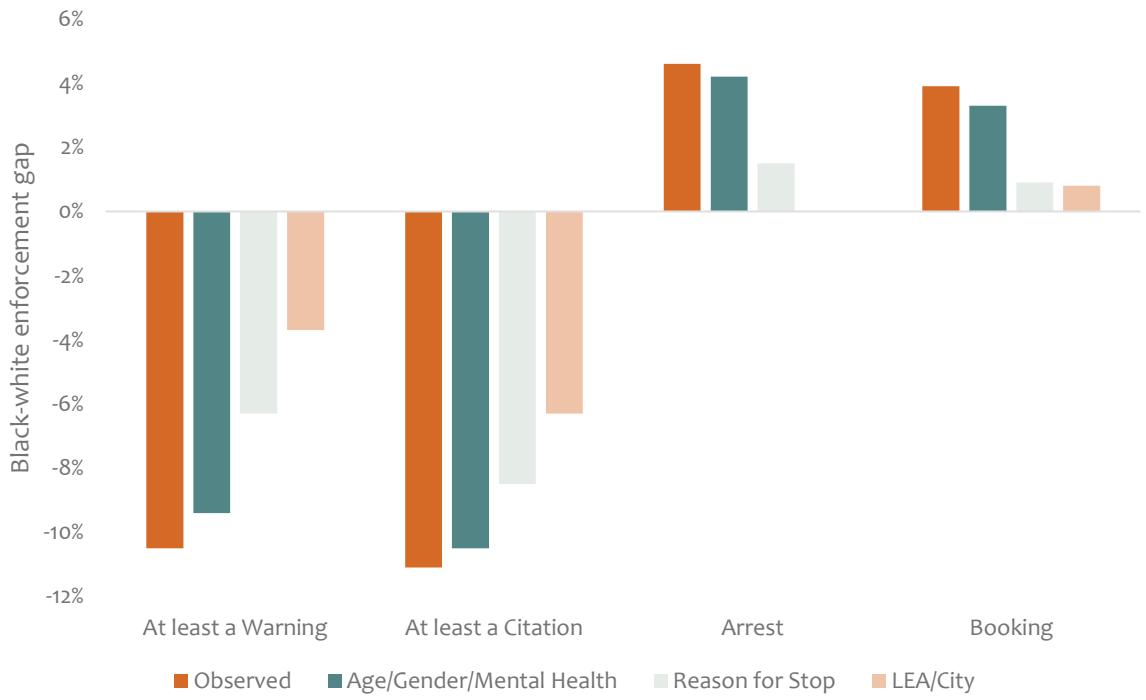
However, stops of Black individuals are *more* likely to result in an arrest, at 9.5% of stops compared with 5.6% of stops of white individuals resulting in a jail booking.[159] In other words, almost one in ten Black people stopped are booked, while slightly more than one in twenty white people are.

Adjusting for perceived personal traits reduces the Black-white gaps somewhat, by about one percentage point for lower levels of enforcement and about half a percentage point for the highest enforcement.[160] When we adjust for the reason for the stop, it reduces the estimated gaps notably: -6.3 percentage points for issuing at least a warning and 0.9 percentage points for likelihood of a booking.[161] This is driven by more stops of Black people for reasons that do not lead to enforcement compared to white people, as well as high shares of booking, such as reasonable suspicion and parole/probation stops.

The drop in the gap around the likelihood of a booking is also partly due to most stops for an outstanding warrant that to a booking (almost 70%), and Black Californians are overrepresented in stops for this reported reason.[162] Lastly, when we adjust for enforcement rates across law enforcement agencies, the Black-white gap in the likelihood of the stop leading to at least a warning narrows notably.[163] This shows that differences in enforcement rates are partly driven by more Black Californians than white Californians being stopped by law enforcement agencies that make more stops without enforcement. And while adjusting for all factors considered here lowers the observed gap notably, it also points towards widespread differences in enforcement across agencies.

FIGURE 6

Adjusting for stop context and enforcement rates across agencies reduces Black-white enforcement rates



[159] *See infra* Technical Appendix Table A11.
[160] *See infra* Figure 6.
[161] *See infra* Figure 6.
[162] *See infra* Technical Appendix Table A11.
[163] *See infra* Figure 6.

SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of enforcement between whites and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95% confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies: California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange, and Sacramento Counties.

Differences in Intrusive Actions

When law enforcement stops an individual, the interaction may be limited to verbal communication or it can widen to involve the use of force and weapons. With the reported information captured by the data, we can create hierarchical variables of increasing levels of intrusiveness up to the level of an officer's weapon being used.

Black people are more likely than white to experience intrusive actions

In 27.8% of stops of Black Californians, the officer asks the individual to step out of the vehicle or something more intrusive.[164] For stops of Latino Californians, the share is 17.2%, while for stops of white and Asian Californians, the shares are 12.8% and 7.5% respectively.[165]

In other words, Black people are slightly more than twice as likely as white to at least be asked to step out of the vehicle. More generally, Black people are at least twice as likely as white people to experience each of the levels of intrusiveness defined here.[166]

Adjusting for personal traits and context of the stop greatly reduces Black-white gaps in our measures of intrusiveness and use of force. While Black civilians are 7.5 percentage points more likely than white civilians to be at least handcuffed, that gap drops to 6.5 percentage points more when we adjust for personal traits.[167] Adjusting for the reason for the stop shrinks the gap to three percentage points.[168]

Furthermore, there is tremendous variation across law enforcement agencies in the race/ethnicity of individuals stopped and in the level of intrusiveness. For example, CHP makes about 60% of all stops of white Californians versus 35% of all stops of Black Californians.[169] CHP also has the lowest share of stops where individuals are handcuffed, at 1.5% of all stops.[170]

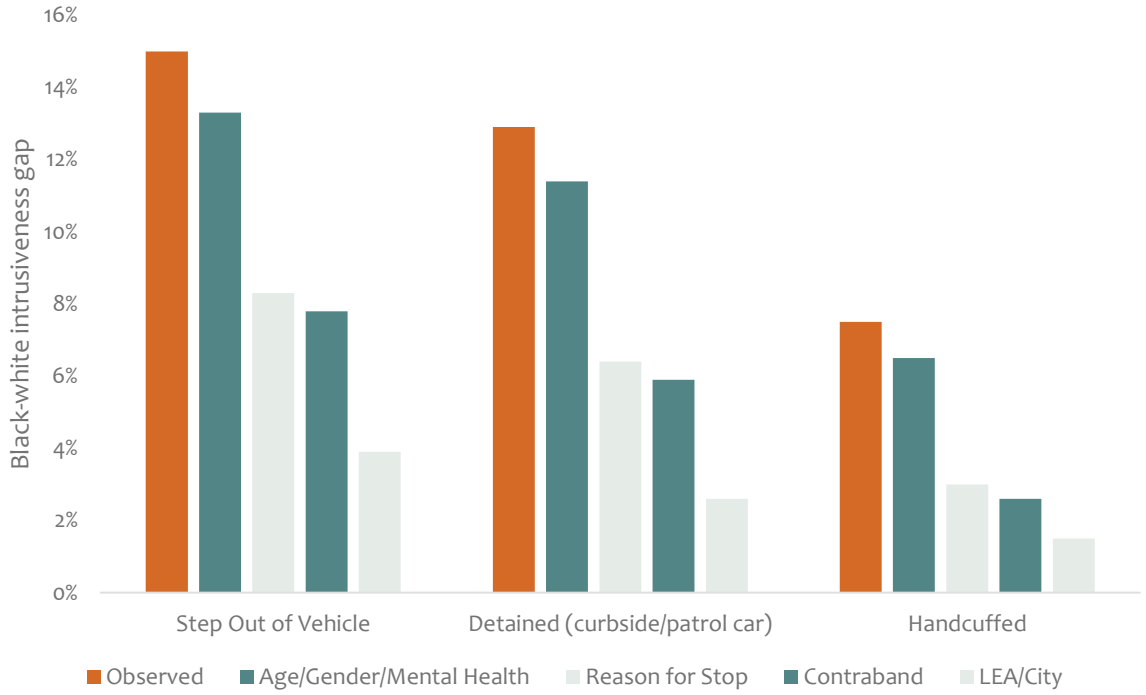
[164] *See infra* Technical Appendix Table A9.
[165] *See infra* Technical Appendix Table A9.
[166] *See infra* Figure 7.
[167] *See infra* Figure 7.
[168] *See infra* Figure 7.
[169] *See infra* Technical Appendix Table A2.
[170] *See infra* Technical Appendix Table A5.

Therefore, when we adjust for differences across agencies, the Black-white gap related to handcuffing drops to 1.5 percentage points.[171] In other words, for a Black person with otherwise the same personal traits as a white person, stopped for the same reason, by the same law enforcement agency, the likelihood of being handcuffed is one-fifth of the gap of 7.5 percentage points.[172] Still, Black Californians are statistically significantly more likely to be handcuffed than white Californians, even after adjusting for the above factors—by 1.5 percentage points.[173]

[171] *See infra* Figure 7.
[172] *See infra* Figure 7.
[173] *See infra* Figure 7.

FIGURE 7

Black Californians are more likely than white Californians to experience greater intrusiveness



SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of the mentioned intrusive action between whites and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95% confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies: California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange and Sacramento Counties.

An officer's weapon is more likely to be involved in stops of Black people than white

Officers report that 16,918 out of the 3,992,074 stops (0.4%) involve an officer's weapon.[174] This includes an officer pointing a firearm at the individual (14,988 of stops) as well as an officer's weapon being used, which includes firearm, electric device such as a Taser, chemical spray, baton, or bitten by a canine (1,930 of all stops).[175]

Stops of Black individuals are more likely to involve an officer's weapon than stops of white individuals.[176] But adjusting for differences in shares of stops where either a weapon is found, the stop is made for reasonable suspicion, or includes an individual with an outstanding warrant for an arrest reduces the Black-white gaps markedly.

Black Californians are roughly three times more likely than white Californians to experience a stop that involves a weapon, at about a 0.6 percentage point higher likelihood.[177] Adjusting for personal traits—such as more young Black adults than white stopped—reduces the gap to about 0.5 percentage points.[178] As stops based on reasonable suspicion—especially an outstanding warrant—are more likely to involve weapons than all other reasons for

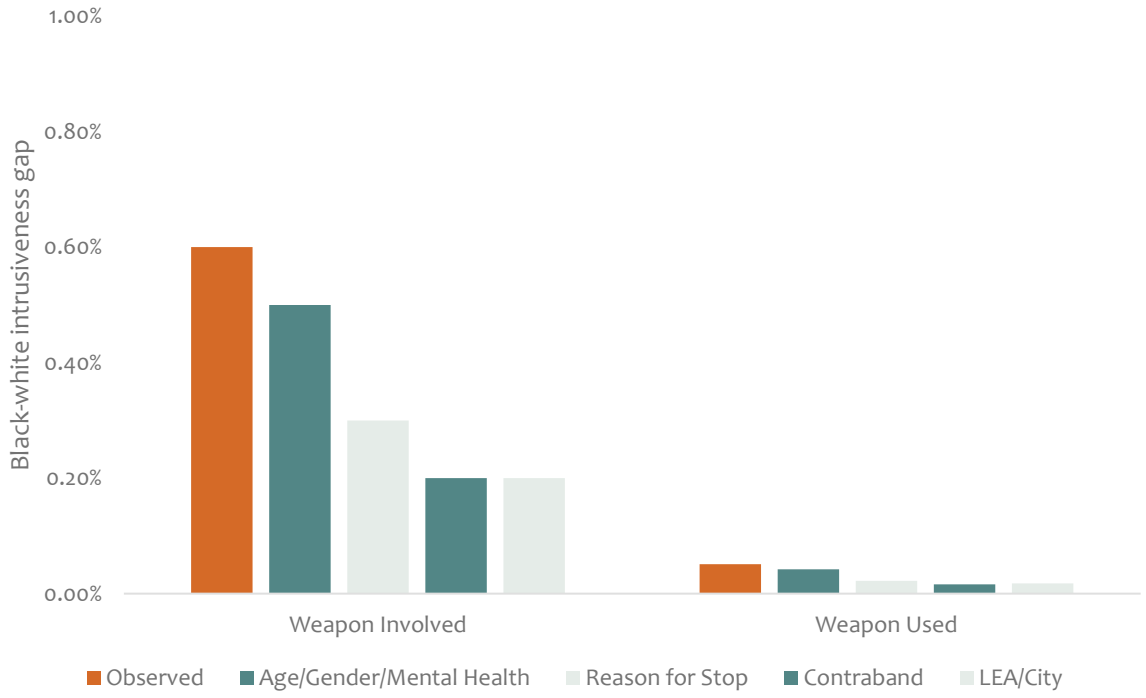
[174] *See infra* Technical Appendix Table A9.
[175] *See infra* Technical Appendix A9.
[176] *See infra* Figure 8; *see also infra* Technical Appendix Table A9.
[177] *See infra* Figure 8.
[178] *See infra* Figure 8.

stops, and with Black individuals overrepresented in these categories, adjusting for such differences reduces the Black-white gap to 0.3 percentage points.[179]

However, a weapon found during a search is most strongly associated with a stop involving an officer's weapon, increasing the likelihood by almost ten percentage points versus no contraband or evidence found.[180] This adjustment reduces the Black-white gap to about 0.2 percentage points.[181] While reported incidents of officers using a weapon are rare, the Black-white gap and patterns of adjustments are similar.

FIGURE 8

When a weapon is found a stop is more likely to involve an officer's weapon



SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of having a weapon involved between whites and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95% confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies: California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange and Sacramento Counties.

Differences in Agency Stops

Are racial disparities in outcomes greater in traffic stops than in stops for reasonable suspicion—the two most common reasons for stops? Do they differ across agency type? To answer these questions, we examine Black-

[179] *See infra* Figure 8.
[180] *See infra* Technical Appendix Table A9.
[181] *See infra* Figure 8.

white differences in outcomes separately by reason for stop and agency: the statewide California Highway Patrol compared to local law enforcement (that is, police and sheriff's departments).

Traffic stops by police and sheriff's departments show greatest disparities

Generally, traffic stops have the greatest Black-white disparities, especially among local law enforcement agencies. Roughly two-thirds of traffic stops are for moving violations, while about one-third are for equipment and non-moving violations; in these traffic stops, more than three times the share of Black Californians than white Californians are then searched by police and sheriff departments.[182]

CHP traffic stops rarely result in a search, and the Black-white disparity is notably less; Black drivers are searched at a rate of 1.5% of stops, and white drivers are searched at a rate of 1.2%.[183] While search rates are much higher in stops for reasonable suspicion, for individuals with a warrant, or for someone on parole/probation, the disparity is much less.[184] This is true whether the stop is made by local law enforcement agencies or CHP, but for those types of CHP stops, search rates of Black people are even lower than for stops of white people.[185]

When drivers are searched during stops for traffic violations, the search is less likely to yield contraband or evidence than when the stop is for reasonable suspicion, outstanding warrant, or known parole/probation, especially in the relatively rare searches in CHP stops.[186]

However, when local law enforcement agencies search white Californians during traffic stops, the yield rate is somewhat higher than during stops for reasonable suspicion, outstanding warrant, or parole/probation.[187] The Black-white gap for yield rate is notable: some contraband is found in 25.1% of searches of white people and in 19.1% of searches of Black people.[188] Both local and statewide agencies report higher yield rates for Black than white Californians when stopping for reasonable suspicion.[189]

FIGURE 9
Traffic stops by local law enforcement show higher Black-white gaps for searches and discovery rates

[182] *See infra* Figure 9; *see also* Technical Appendix Table A10.
[183] *See infra* Technical Appendix Table A10.
[184] *See infra* Figure 9; *see also* Technical Appendix Table A10.
[185] *See infra* Technical Appendix Table A10.
[186] *See infra* Technical Appendix Table A10.
[187] *See infra* Technical Appendix Table A10.
[188] *See infra* Technical Appendix Table A10. Another notable disparity is searches of individuals with a warrant or on parole/probation made by CHP, but they are quite uncommon (230 in 2019).
[189] *See infra* Technical Appendix Table A10.

SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of enforcement between whites and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95% confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies: California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange and Sacramento Counties.

When police and sheriff's departments make stops for traffic violations, a higher share of Black drivers are stopped without the officer issuing a warning compared to white drivers: 23.3% and 11.2% respectively.[190] In CHP stops for traffic violations, almost everyone, Black or white, receives at least a warning, 98.5% and 98.6%, respectively.[191] While being stopped for a traffic violation rarely results in a booking, both state and local law enforcement agencies book Black drivers more often than white, about 3.5% and 2.5% respectively.[192]

FIGURE 10

Black-white gaps for no-enforcement and booking are greatest among local law enforcement agencies

[190] *See infra* Figure 10; *see also* Technical Appendix Table A10.
[191] *See infra* Technical Appendix Table A10.
[192] *See infra* Technical Appendix Table A10.

SOURCE: Author estimates using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: The bars represent percentage point differences in the likelihood of enforcement between whites and each of the racial/ethnic groups identified in the RIPA data. All estimates are statistically significant at the 95% confidence level. The stop data are limited to the state's fifteen largest law enforcement agencies: California Highway Patrol, the police departments of the cities of Los Angeles, San Diego, San Francisco, Fresno, Long Beach, Oakland, Sacramento, and San Jose and the sheriff's departments of Los Angeles, San Bernardino, Riverside, San Diego, Orange and Sacramento Counties.

Furthermore, when local law enforcement agencies make stops for traffic violations, Black drivers are more likely to experience more intrusive actions than white drivers. For example, in stops by the fourteen police and sheriff's departments included in the 2019 RIPA data, 8.6% of Black drivers were handcuffed compared to 3.5% of white drivers. For CHP, the shares were 1.5% and 1.1% respectively.[193]

Traffic stops that involve an officer's weapon are very unusual, but Black drivers are overrepresented in those instances (0.17% and 0.05% of traffic stops for Black and white drivers, respectively).[194] Stops made for reasonable suspicion or of individuals with a warrant or on parole/probation are markedly more likely to involve a weapon than traffic stops, and also more likely in stops of Black Californians than white Californians.[195] For example, when local law enforcement agencies stop for reasonable suspicion, interactions involve a weapon in almost twice the share of stops of Black people compared to white people, 2.9% and 1.5% respectively (for CHP stops for reasonable suspicion, the shares are 2.4% for Black people and 1.6% for white people).[196]

Given the notable differences between CHP and the local law enforcement agencies, and the type of stop, we also estimated regression models restricted to traffic stops separately for statewide and local law enforcement

[193] *See infra* Technical Appendix Table A10.
[194] *See infra* Technical Appendix Table A10.
[195] *See infra* Technical Appendix Table A10.
[196] *See infra* Technical Appendix Table A10. We estimated all of the separate regression models by reason for the stop, and also broke them down by CHP and local law enforcement agencies, but given the numerous regressions involved, the results are not all presented in the technical appendix. The regressions that were excluded are available upon request. We do find that the factors discussed above contribute to the observed disparity, and when adjustments are made, the disparities are reduced. This is arguably not surprising given that we found that adjustments for reason for the stop, as well as law enforcement agency, were important factors.

agencies.[197] Broadly, the results show that the estimated Black-white gaps in the post-stop experiences in traffic stops made by police and sheriff's departments are much less sensitive to inclusion of demographics and the contextual factors included in our analysis.[198] In other words, the notable disparity discussed above remains, and additionally, fully adjusted Black-white gaps in traffic stops made by CHP are substantially smaller. Black-white disparities in the likelihood of being booked, however, are not appreciably smaller for CHP traffic stops than for those made by local law enforcement agencies and are greater once we adjust for all of the factors.

Traffic Stops are a Key Driver of Disparities

Because of the stark racial disparities in traffic stops, in this section, we work to identify traffic stops that may deserve consideration for alternative enforcement practices. Traffic stops that could be enforced using alternative methods would be those that are unlikely to jeopardize public or road safety but that could: (1) improve safety for officers and civilians, (2) increase police efficiency, and (3) reduce racial disparities. Since agencies have substantial differences in their primary missions, objectives, and jurisdictions, we examine stop outcomes by type of law enforcement agency (the California Highway Patrol or local law enforcement; the latter can be further separated into police and sheriff's departments). Furthermore, we analyze traffic stops for both moving violations (e.g., speeding or failure to stop) and non-moving violations (e.g., improper display of a license plate, expired registration tag, or failure to maintain vehicle light equipment). Non-moving violations may especially be an area where alternative enforcement—such as mailing the vehicle owner a "fix-it ticket" and/or citation[199]—is feasible and safe.

Traffic stops that do not lead to any enforcement or discovery of contraband or evidence deserve special attention—while these incidents are a small minority of all stops, they fall disproportionately on people of color and may not be an efficient use of law enforcement officers' time. The "intrusiveness" of these stops, as measured by outcomes such as whether individuals were asked to step out of the vehicle, searched, detained, or handcuffed, and whether an officer aimed or used a weapon, is another critical factor that could affect the relationship between community members and law enforcement. Such information can be used to determine when changes in policing practices may be warranted and could help guide potential changes.

One key question is whether racial disparities in traffic stops occur because of bias or targeting from law enforcement. While disparities could be driven by racial bias, other factors may also play a role. For example, vehicle condition as well as driving patterns and behavior may differ across race/ethnicity and could lead to disparities in the likelihood of being stopped for a traffic violation. To examine the potential role of racial bias in traffic stops, we employ the "veil of darkness" theory, which posits that it is more difficult for officers to ascertain a person's race or ethnicity during dark hours. If officers are racially profiling drivers, the share of people of color in traffic stops would be lower during dark hours, compared to light hours, holding everything else constant. Using the shift to and from Daylight Saving Time, we examine if people of color are more or less likely to be

[197] *See infra* Technical Appendix Tables B17-B21.
[198] *See infra* Technical Appendix Tables B17-B21.
[199] See Megan Cassidy, "Why S.F. might be about to prohibit police from making low-level traffic stops," San Francisco Chronicle (2022), https://www.sfchronicle.com/sf/article/Why-S-F-might-be-about-to-prohibit-police-from-17166395.php.

stopped for a traffic violation when, for a given time of the day, sudden changes in light conditions make it easier or harder, respectively, to determine an individual's race or ethnicity.

Note that the test of the "veil of darkness" theory only applies to the likelihood of being stopped for a traffic violation and cannot be applied to other stop outcomes, as once a stop has been made, the officer has determined (the perceived) race/ethnicity of the driver. Furthermore, while nighttime conditions make it more difficult to determine a driver's race/ethnicity than during daytime, there are contexts and locations, such as where there are streetlights, when racial/ethnic identification may still be possible. Officers may also use type, make, and condition of a vehicle to infer race/ethnicity. If such factors are indeed correlated with race/ethnicity, racial profiling may also be possible during dark hours.

Breakdown of traffic stops

We focus on all traffic stops in the 2019 RIPA data (3,394,392 stops, about 85% of all 2019 stops) reported by the fifteen largest law enforcement agencies in the state.[200] Consistent with its organizational mission, the CHP makes many more traffic stops than police or sheriff's departments. Overall, the CHP made 64% of the nearly 3.4 million traffic stops (almost 2.2 million), while the eight police departments made 24% of these stops (about 809,000) and the six sheriff's departments made about 12% of these stops (about 425,000).[201]

About two-thirds of traffic stops are for moving violations, while about one-third are for equipment and non-moving violations.[202] Examples of some of the most common equipment/non-moving violations are lack of registration (287,900 stops), improper display of a license plate (167,800), and failure to maintain vehicle light equipment (67,100).[203]

Stops with no enforcement or discovery of contraband

In the vast majority of stops, there is at least some enforcement, measured here as at least a warning being issued. Traffic stops that lead to *no* enforcement and that *do not* yield any contraband or evidence are arguably the types of stops most deserving of closer examination, as they could potentially be considered for alternative enforcement methods without endangering public safety.

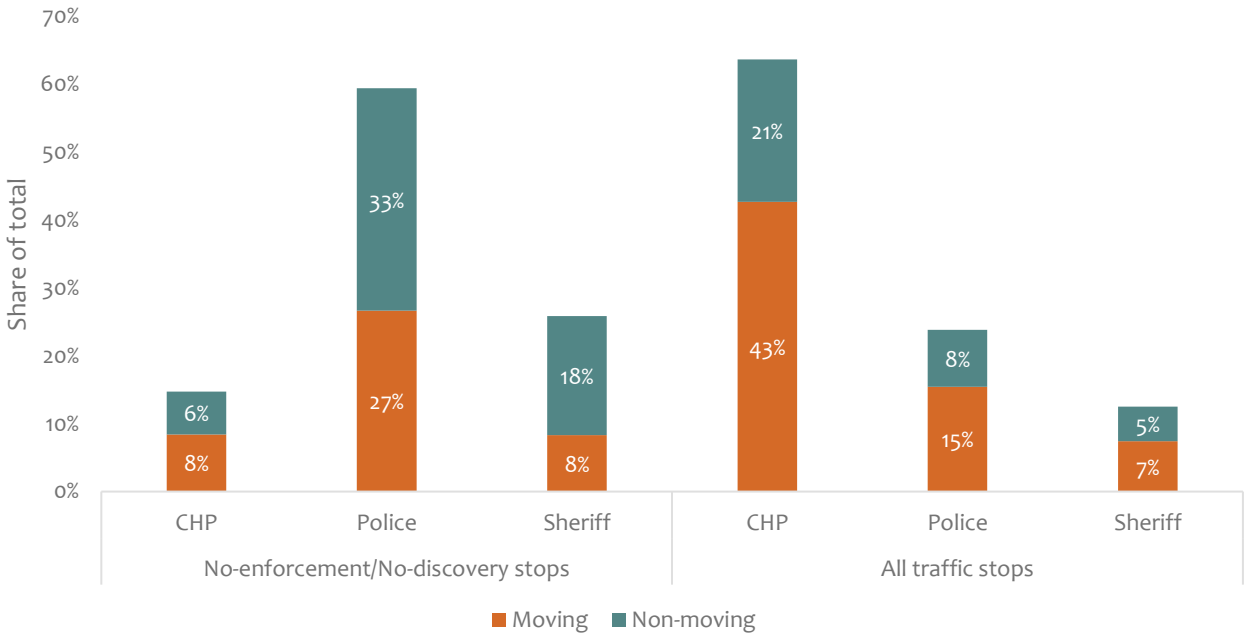
We define enforcement in this report as a warning, a citation, an arrest resulting in cite and release, or an arrest resulting in a booking into jail. While most searches—roughly four out of every five—do not yield contraband or evidence, most traffic stops result in some enforcement.[204] Of the close to 3.4 million traffic stops made by these fifteen law enforcement agencies in 2019, only about 6% (about 211,000 stops) led to no enforcement or discovery of any contraband or evidence.[205] When we extend the definition of no enforcement to define a warning as no enforcement (i.e., enforcement is defined to be a citation, an arrest resulting in cite and release, or an arrest

[200] RACIAL AND IDENTITY PROFILING ADVISORY BOARD, APPENDICIES – 2021 RIPA BOARD REPORT (2021), https://oag.ca.gov/sites/all/files/agweb/pdfs/ripa/ripa-appendices-2021.pdf?.
[201] *See infra* Technical Appendix Table A3.
[202] *See infra* Figure 11.
[203] Authors' estimates from the California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
[204] *See infra* Figure 11; *see also* Technical Appendix Table A6.
[205] *See infra* Technical Appendix Table A5.

leading to a jail booking), the number of no-enforcement/no-discovery stops increases to about 1.1 million, or 33% of traffic stops.[206]

Figure 11 shows that stops by local law enforcement officers, especially police officers, disproportionately result in no enforcement or discovery. The CHP makes only 15% of traffic stops that result in no enforcement or discovery, despite making the majority of stops overall (64%).[207] While the eight police departments account for slightly less than a fourth of overall traffic stops (24%), they make more than half of the traffic stops with no enforcement or discovery (59%).[208] The six sheriff's departments make about 13% of overall traffic stops and 26% of those with no enforcement or discovery.[209] For local law enforcement, these stops are more likely to be for non-moving violations rather than moving violations.[210]

FIGURE 11
Stops by local law enforcement disproportionately result in no enforcement or discovery



SOURCES: Authors' calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
NOTES: No enforcement is defined as not even a warning was issued. The figure shows the shares of moving and non-moving violation traffic stops made by each type of law enforcement agency in which there is no enforcement/no discovery of contraband or evidence (left three bars) and amongst all traffic stops (right three bars).

Lastly, as shown in Table 2, stops with no enforcement or discovery comprise a meaningful amount of officers' (and civilians') time. On average, these stops last about twenty-three minutes, but this is skewed by a relatively small share (about 5%) of stops in which the officer reports a duration longer than an hour.[211] The median duration for this kind of traffic stop is ten minutes.[212] In addition, the length of the stop varies by agency type and

[206] Authors' estimates from the California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
[207] *See infra* Figure 11.
[208] *See infra* Figure 11.
[209] *See infra* Figure 11.
[210] *See infra* Figure 11.
[211] *See infra* Table 2.
[212] *See infra* Table 2.

to some extent the type of traffic violation. Notably, officers spent more than 80,000 total hours in 2019 on these types of stops (or 7% of total officer hours spent on traffic stops).[213] For police departments, close to 28,000 of these hours were stops made for non-moving violations.[214]

TABLE 2

Officers spent more than 80,000 hours on no-enforcement/no-discovery stops in 2019

Traffic Stops with No Enforcement/No Discovery	All LEAs	CHP		Police		Sheriff	
		Moving	**Non-Moving**	**Moving**	**Non-Moving**	**Moving**	**Non-Moving**
Number of Stops	211,086	17,777	13,296	56,215	69,193	17,599	37,006
Share	100%	8.4%	6.3%	26.6%	32.8%	8.3%	17.5%
Stop Duration							
Median (minutes)	10	10	15	12	12	7	7
Average (minutes)	23	30	39	27	24	10	10
Total (hours)	80,307	8,963	8,652	25,340	27,937	3,042	6,374

SOURCES: Authors' calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
NOTE: No enforcement is defined as not even a warning was issued.

In stops that lead to no enforcement or discovery, local agencies are more likely than the CHP to take intrusive actions

The interaction between a civilian and an officer during a traffic stop can vary considerably. In addition to searches, officer actions can range from verbal communication to the civilian being asked to step out of the vehicle, to the civilian being detained or handcuffed, to—in rare cases—an officer aiming or using a weapon. We refer to this wide range of potential officer behaviors that extend beyond verbal communication as "intrusive actions."

While the majority of no-enforcement/no-discovery traffic stops entail only verbal communication with the officer, a number of these stops include intrusive actions, as shown in Table 3. For example, in 24% of these stops (nearly 50,000), the individual was asked to step out of the vehicle.[215] The individual and/or vehicle was searched for contraband or evidence in about 18% of these stops (almost 37,400), and the person was detained curbside or in a patrol car during 17% of these stops (about 35,700).[216] In about 7% of no-enforcement/no-discovery stops (nearly 15,000), the person was temporarily handcuffed and then released.[217] Out of the roughly 211,000 no-enforcement/no-discovery stops, an officer aimed a weapon in 361 of these stops (0.1%) and used a weapon in thirty-three of these stops (0.02%).[218]

[213] *See infra* Table 2.
[214] *See infra* Table 2.
[215] *See infra* Table 3.
[216] *See infra* Table 3.
[217] *See infra* Table 3.
[218] *See infra* Table 3.

TABLE 3

Many traffic stops with no discovery or enforcement involve intrusive actions, especially in stops by police

Traffic Stops with no enforcement/no discovery	All LEAs	CHP		Police		Sheriff	
		Moving	**Non-Moving**	**Moving**	**Non-Moving**	**Moving**	**Non-Moving**
Search	37,377	81	63	13,264	17,694	1,942	4,333
Intrusiveness (at least)							
Out of Vehicle Curbside/Patrol Car	49,971	148	108	16,609	22,681	3,275	7,150
Detention	35,661	96	98	11,741	15,785	2,331	5,610
Handcuffed	14,951	81	82	5,889	7,364	434	1,101
Involves Weapon	361	8	6	139	98	51	59
Weapon Used	33	2	3	11	12	0	5
Total number of stops	211,086	17,777	13,296	56,215	69,193	17,599	37,006

SOURCES: Authors' calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
NOTE: No enforcement is defined as not even a warning was issued.

These patterns differ across law enforcement agencies and types of violations. Table 3 shows that regardless of level, intrusive experiences are most common in stops for non-moving violations made by local law enforcement agencies. For example, in the nearly 15,000 instances in which the officer reported handcuffing the individual without any further enforcement or discovery, almost half were in stops for a non-moving violation made by the eight police departments.[219]

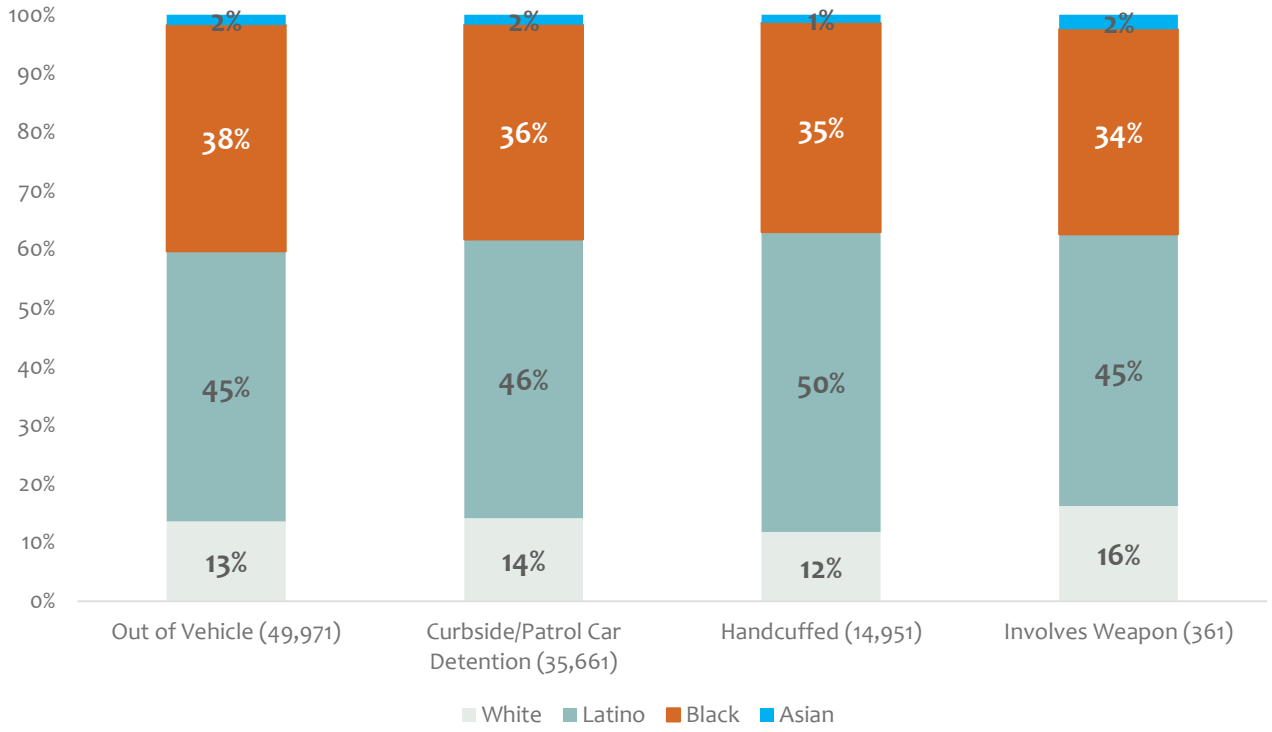
Black and Latino drivers are overrepresented in these intrusive no-enforcement/no-discovery

As noted above, a small number of traffic stops involve intrusive actions despite not even a warning being issued and no contraband or evidence being found. Such stops occur disproportionately with Latino and Black individuals. For example, out of almost 36,000 traffic stops that involve at least a curbside or patrol car detention, 46% are in stops of Latino drivers and 36% in stops of Black drivers.[220] The Black share is especially striking: Black drivers are about 2.5 times more likely than white drivers (14%) to be detained, despite comprising a significantly lower share of the population.[221] Similar levels of racial disparity are present across other intrusive actions.

FIGURE 12

Black drivers comprise over a third of no-enforcement/no-discovery stops that involve intrusive actions

[219] *See supra* Table 3.
[220] *See infra* Figure 12.
[221] *See infra* Figure 12.



SOURCE: Authors' calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
NOTE: The numbers in parentheses refer to the total number of stops where the person experienced at least this level of intrusiveness, out of the 211,089 traffic stops with no enforcement and there was no discovery of contraband or evidence.

The main source of inequity in intrusive experiences is local law enforcement stops, especially police stops, and the majority of these are for non-moving violations. For example, police departments account for 89% of the nearly 15,000 no-enforcement/no-discovery stops in which the individual is handcuffed (49% for non-moving violations; 40% for moving violations).[222] Meanwhile, sheriff's departments account for 10% of these stops (7% non-moving violations; 3% moving violations).[223] Finally, the CHP makes up only 1% of no-enforcement/no-discovery stops in which the individual is handcuffed (0.5% non-moving violations; 0.5% moving violations).[224]

Overall, Black drivers are notably overrepresented in traffic stops relative to their share of the population (14% of traffic stops vs. 6% of the population), and these disparities vary by agency type.[225] In stops by police departments, for example, Black drivers make up as many as a third of traffic stops in the hours after midnight, roughly twice the share of white drivers.[226] Racial disparities in search and discovery rates are also more evident among local law enforcement stops. We also see racial disparities in enforcement. For local law enforcement agencies, almost a third of stops of Black drivers around midnight do not result in any enforcement or discovery.[227] Finally, Black and Latino drivers are overrepresented among no-enforcement/no-discovery stops that involve intrusive actions, including being asked to step out of the vehicle, being detained, being handcuffed, or an officer aiming or using a weapon.[228]

[222] *See supra* Table 3.
[223] *See supra* Table 3.
[224] *See supra* Table 3.
[225] *See infra* Technical Appendix Table A2.
[226] Authors' estimates from the California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
[227] *Id.*
[228] *See supra* Figure 12.

Public safety implications

Interactions between civilians and police, whether for a traffic stop or another reason, carry inherent risks. In 2019, 799 assaults on police officers occurred during traffic pursuits and stops in California (7.6% of total assaults on law enforcement)— fifty-five of which involved a firearm (19% of all firearm-related assaults on law enforcement).[229] In addition, in a study of police use of force, Premkumar et al. found that traffic and pedestrian stops account for about 15% of police encounters in which a civilian is seriously injured or killed.[230] Overall, there are stark racial disparities in civilians injured during law enforcement encounters.[231] Black Californians are about three times more likely to be seriously injured, shot, or killed by the police relative to their share of the state's population.[232] Concerns about these racial disparities in use of force have motivated several statewide policing reforms. In addition, a few cities in California, including Los Angeles,[233] San Francisco,[234] and Berkeley,[235] have implemented reforms to the enforcement of some traffic violations.

However, a small share of these traffic stops involves a firearm being confiscated. In 2019, these fifteen law enforcement agencies made 905 traffic stops that resulted in officers confiscating firearms (0.03% of 3,394,392 traffic stops, 0.5% of 171,472 searches during traffic stops).[236] Of these stops, 51% (463) were for non-moving violations (320 by police officers, 98 by sheriff deputies, and 45 by the CHP).[237] Altogether, traffic stops involving seizure of a firearm represented about 30% of the 3,024 stops of any kind in which a firearm was seized by these law enforcement agencies in 2019.[238] Looking at the eight largest police departments in the state (Los Angeles, San Diego, Sacramento, San Francisco, San Jose, Fresno, Long Beach, and Oakland), departments that conduct proportionally more searches during traffic stops typically confiscate lower shares of firearms.[239] Two types of searches that require a lower level of evidence of criminal misconduct— those conducted with the consent of a stopped individual and those based on supervision status (e.g., parole or probation)—result in notably smaller shares of firearm confiscation with fewer than a fifth and a half of the share of firearms confiscated on average, respectively.[240] Other search types—such as warrant searches, searches prompted by evidence of a crime, and searches under exigent circumstances (urgent or dangerous situations where discretion is low)—resulted in much higher shares of firearm confiscation.[241]

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[229] Authors' estimates from the California Department of Justice, Law Enforcement Officers Killed or Assaulted data, 2019.
[230] Deepak Premkumar et al., *Police Use of Force and Misconduct in California*, PUB. POL'Y INST. OF CAL. 3 (2021), https://www.ppic.org/publication/police-use-of-force-and-misconduct-in-california/.
[231] *Id.* at 18-19.
[232] *Id.* at 3.
[233] Kevin Rector, *New Limits on 'Pretextual Stops' by LAPD Officers Approved, Riling Police Union,* L.A. TIMES (March 1, 2022, 7:32 PM), https://www.latimes.com/california/story/2022-03-01/new-limits-on-pretextual-stops-by-lapd-to-take-effect-this-summer-after-training.
[234] Megan Cassidy, *Why S.F. Might be About to Prohibit Police From Making Low-Level Traffic Stops,* S.F. CHRONICLE (May 11, 2022 6:36 PM), https://www.sfchronicle.com/sf/article/Why-S-F-might-be-about-to-prohibit-police-from-17166395.php.
[235] Sarah Ravani, *Berkeley Adopts Sweeping Police Reforms Including Taking Cops Off Routine Traffic Stops,* S.F. CHRONICLE (Feb. 23, 2021 9:16 PM), https://www.sfchronicle.com/bayarea/article/Berkeley-to-consider-sweeping-police-reforms-15971071.php.
[236] There are eighty traffic stops where a firearm was confiscated without a search being performed, but the overall confiscation rate rounded to the nearest tenth of a percent is the same. Authors' estimates from the California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
[237] *Id.*
[238] *Id.*
[239] Deepak Premkumar et al., *How Often Are Firearms Confiscated During Traffic Stops?*, PUB. POL'Y INST. OF CAL. (2023), https://www.ppic.org/blog/how-often-are-firearms-confiscated-during-traffic-stops/.
[240] *Id.*
[241] *Id.*

Testing for Racial Bias in Police Stops for Traffic Violations

Does racial bias in policing contribute to racial disparities in traffic stop outcomes? Given the previously mentioned research findings and literature that demonstrate the broad prevalence of bias in our society, it may not be surprising to find evidence of racial bias in the RIPA data.

Our analysis above shows that Black drivers are overrepresented in traffic stops relative to their share of the population.[242] However, this in and of itself is not necessarily indicative of racial bias. Driving patterns and behaviors (due to work, school, shopping, and entertainment)—as well as vehicle conditions—may also differ across race/ethnicity.[243] These differences mean that the demographic composition of drivers in any particular area and at a particular time may differ from the residential population, rendering the residential population an inappropriate benchmark to represent the likelihood that different racial/ethnic groups would be stopped for traffic violations. To circumvent some of these challenges, we employ an analytical method based on the "veil of darkness" theory to test for racial bias in traffic stops.

The veil-of-darkness theory posits that light conditions affect officers' ability to determine the race/ethnicity of a driver and that it is more difficult to ascertain a person's race or ethnicity during dark hours.[244] If racial profiling is a factor influencing officers' decisions to stop drivers, the share of people of color in traffic stops would be lower during dark hours, compared to light hours, holding everything else constant. But simply comparing daytime and nighttime stops would not account for differences in driving patterns and behaviors across racial/ethnic groups and times of day. Instead, we exploit the sudden change in daylight that occurs at specific and location-dependent times in early March and November during the annual shift to and from Daylight Saving Time (DST). For example, in Southern California, it was light between 6:00 a.m. and 6:55 a.m. before DST started on March 10, 2019, but dark between 6:00 a.m. and 6:55 a.m. right after the switch. There was also an opposite switch, from dark to light, between 6:40 p.m. and 7:35 p.m. on March 10. Similar changes in light conditions can also be identified in November. The veil-of-darkness theory predicts that if there is racial bias in traffic stops, the share of people of color stopped will decrease when light conditions switch from light to dark and increase when light conditions switch from dark to light.[245]

Given that there are light-to-dark and dark-to-light switches on each DST switch date in March and November, our approach has the benefit of predicting opposite changes to the shares of Black and Latino drivers for a given DST switch date and is hence less susceptible to concerns about underlying trends and seasonality. Given that we see distinct differences in racial disparity in traffic stops between CHP and local law enforcement, and that their

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[242] *See supra* Figure 1 and accompanying text.
[243] *See* Jeffrey Grogger & Greg Ridgeway, *Testing for Racial Profiling in Traffics Stops From Behind a Veil of Darkness*, 101 (475) J. AM. STAT. ASS'N 878, 878-87 (2006); William C. Horrace & Shawn M. Rohlin, *How Dark is Dark? Bright Lights, Big City, Racial Profiling*, 98(2) REV. ECON. & STAT. 226, 232 (2016).
[244] The veil-of-darkness approach was first used in the police bias context by Grogger and Ridgeway who examined 7,600 traffic stops made by the Oakland Police Department in 2003. Grogger & Ridgeway, *supra* note 228 at 880. The study finds no convincing evidence of racial profiling in traffic stops. *Id.* at 885. Since then, a number of studies have been produced examining traffic stops in a number of states (including Connecticut, Minnesota, New York, Oregon, Rhode Island, and Texas), generating mixed results regarding bias in policing. *See* Jesse Kalinowski, Matthew B. Ross & Stephen L. Ross, *Addressing Seasonality in Veil of Darkness Tests for Discrimination: An Instrumental Variables Approach*, UNIV. OF CONN., DEP'T OF ECON. WORKING PAPER NO. 2019-07 (2019) for a summary of findings. In an application of this approach using a comprehensive dataset covering law enforcement agencies throughout the country, Emma Pierson et al., found that Black drivers were less likely to be stopped after sunset than white drivers, suggesting bias in officer stop decisions. Emma Pierson et al., *A Large-Scale Analysis of Racial Disparities in Police Stops across the United States*, 4 NATURE HUM. BEHAV. 4: 736, 745 (2020).
[245] Grogger & Ridgeway, *supra* note 228.

missions and objectives differ, we separately test this theory for each type of law enforcement agency. In our analysis, we assume that driving behavior and patterns do not sharply change during these sudden switches in light conditions, or that changes are uniform across race/ethnicity.[246] As light conditions are seasonal and change over time, we limit our study period to the two-week periods before and after the DST switches in March and November.[247]

As with most tests of the veil-of-darkness theory, our analysis may be limited by lack of statistical power—meaning we may not find evidence of bias even if it exists. Given that we focus on brief, specific times of the day, for only four weeks, and we examine racial/ethnic groups and law enforcement agencies separately, our sample sizes are limited. This is a particular concern for studying Black drivers, who, although they are overrepresented compared to their share of the statewide population, are a relatively small minority of drivers during the hours examined here.[248]

Another important note is that this is a single and specific test of racial bias. Though an affirmative result would provide evidence that racial bias contributes to the observed racial disparities, a negative result would not conclusively show that there is no racial bias in policing, but rather indicate that there is no evidence of it in the decision to stop someone for a traffic violation during the morning and evening hours analyzed—times of the day when racial disparities are not especially large, as our analysis above shows.

RIPA data shows some evidence of racial bias in policing

Our estimates provide some evidence of racial bias in the likelihood of being stopped for a traffic violation. As Figure 13 shows, in stops made by local law enforcement agencies, we find *decreases* in stops of Black and Latino drivers when conditions suddenly switch from light to dark.[249] Specifically, the shares of stops fall by 2.2 percentage points when we combine Black and Latino drivers, and by 2.5 percentage points and 2.8 percentage points, respectively, when we estimate the effects separately.[250] Conversely, the shares of stops of Black and

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[246] To adjust for possible broader changes that coincide with the DST switches, we subtract out pre-post changes in the racial composition during the same hours, but on calendar dates adjacent to the DST we switch dates (in other words, we are estimating "difference-in-differences" models). The number of local law enforcement agency traffic stops of white, Latino, and Black drivers drops somewhat from the two-week pre-DST switch period compared to the two-week post-DST switch period, from 71,731 to 66,847, a decrease of 6.8%. Importantly, the percentage decrease is identical, 6.8%, during the hours subject to changes in light conditions as a result of DST as they are during the comparison hours (those hours in which the light conditions remain the same). The number of CHP traffic stops also decline by about 7% in the post-DST switch period compared to the pre-DST period (from 141,714 to 131,524). However, the percentage decrease is somewhat greater for traffic stops during the so-called treatment hours (dropping from 20,719 to 18,238, a decrease of 12%) compared to the comparison hours (decreasing by 6.4%, from 120,995 to 113,286).

[247] Specifically, we estimate linear probability models (LPM) of the likelihood that the person stopped is a person of color, estimated jointly for Black and Latino individuals, as well as separately, relative to white individuals:
$POCit=0+1LTtoDarkt+2DarktoLTt+3Postt+4Post*LTtoDarkt+5Post*DarktoLTt+it$
where *LTtoDark* and *DarktoLT* are indicator variables for the relevant time period in which light conditions switch from light to dark and dark to light, respectively, at the date of DST, and *Post* is an indicator variable equal to one for the two-week period on and after the DST switches. We limit the sample to traffic stops two weeks pre- and post-DST switches, and to stops between 4 a.m.–8 a.m. and 4 p.m.–8 p.m. Some models include demographic controls. The estimated coefficients and standard errors are shown in Tables C1–C5 in Technical Appendix C.

[248] The number of CHP stops of white, Latino, and Black drivers during the hours subject to changes in light conditions as a result of DST are 16,492, 18,123, and 4,342, respectively, over the four-week period examined (two weeks prior to the DST switch and two weeks after the DST switch). For local law enforcement, the numbers are 5,294, 9,787, and 4,721, respectively. Authors' estimates from the California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

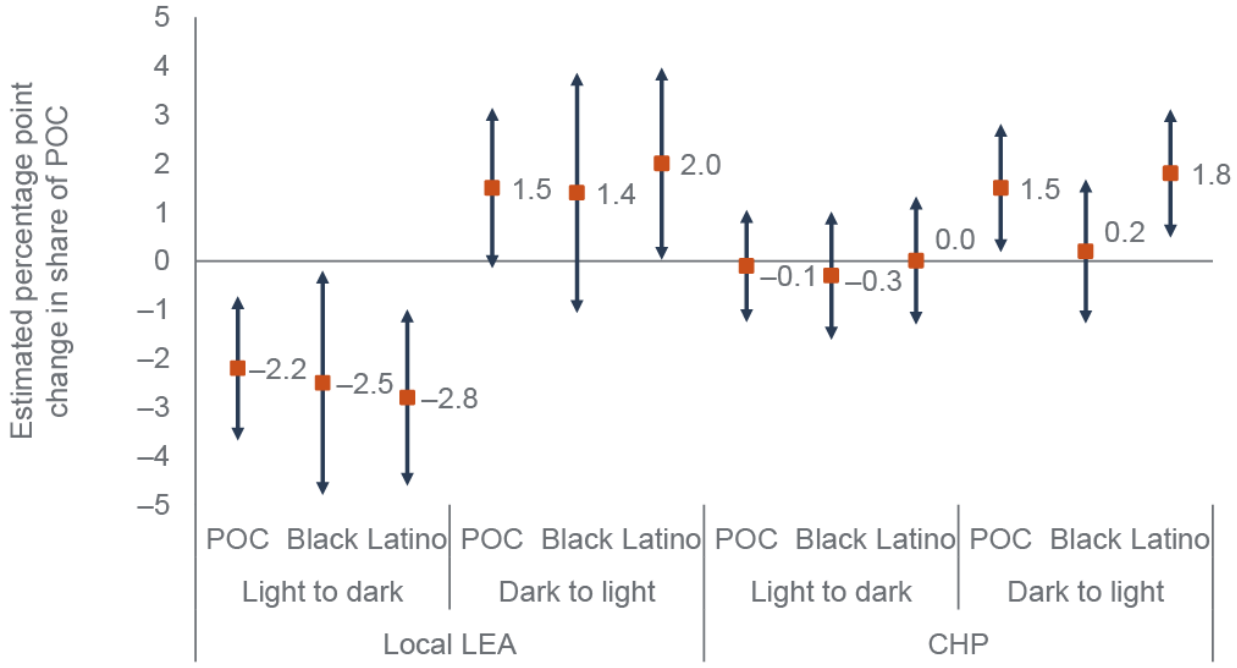
[249] *See infra* Figure 13.

[250] This change translates to about 3% when we combine Black and Latino drivers, and about 5% and 4% fewer stops, respectively, when estimated separately. *See infra* Technical Appendix Tables C1-C5.

Latino drivers *increase* by 1.4–2.0 percentage points when light conditions switch suddenly from dark to light.[251] The estimates are at least statistically significant at the 10% level, except for the change in the share of Black drivers during the switch from dark to light.

For CHP stops, we do not find evidence of police bias for Black drivers, but there is some evidence of bias in stops of Latinos, limited to the switch from dark to light. The share of Latino drivers stopped increases by 1.8 percentage points, while the share of Black drivers is essentially unchanged.[252]

FIGURE 13
RIPA data provide some evidence of racial bias in local law enforcement's stopping behavior before and after Daylight Savings Time



SOURCE: Authors' calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) data, 2018–2020.
NOTES: The numbers by the orange markers represent the estimated change in the share of Black and Latino drivers stopped for a traffic violation, relative to white drivers, as a result of the sudden changes in light conditions, as a result of DST switches. The length of the bars represent 90% confidence intervals. Estimates with bars not crossing the horizontal axis (at zero) are statistically significant at the 10% level.

In some cases, it is possible that officers could have more difficulty ascertaining a driver's race and ethnicity for moving violations (such as a speeding violation) than for non-moving violations (such as improper display of license plate).[253] To examine and account for such possible differences, we estimate separate models for moving

[251] This change translates to about 3% for both Black and Latino drivers. *See infra* Technical Appendix Tables C1-C5 for detailed results.
[252] *See infra* Figure 13; *see also infra* Technical Appendix Tables C1–C3. The size of these estimates are generally not very sensitive to the inclusion of other controls, such as differences in officer-perceived demographic traits and characteristics, whether the stop was in response to a call for service and/or for a moving or non-moving violation. However, when we include these controls, the estimates are not statistically significant at conventional levels, with the exception of our estimates of the combined share of people of color in stops by local law enforcement officers. Estimates for the effects during both switches from light to dark and dark to light are statistically significant at least at the 10% level (and at the 5% level for switches during the dark-to-light time period). These patterns are likely a result of the very small sample sizes for anyone of a given demographic characteristic and type of violation. When we combine Black and Latino drivers (hence increasing the sample size), statistical significance remains.
[253] Key factors affecting the ability of an officer to determine a driver's race or ethnicity are the speed and proximity of the officer's and driver's vehicles.

and non-moving violations. This approach, however, is challenged further by sample size limitations, resulting in less precise estimates.

The estimates potentially suggest greater racial bias in stops by local law enforcement of Black drivers for non-moving violations. The share of Black drivers stopped for non-moving violations decreases by about four percentage points when conditions switch from light to dark, and it is statistically significant at the 10% level.[254] This is roughly twice the estimated decrease in the share of Black drivers in stops for moving violations. The estimated increase in the share of Black drivers when light conditions switch from dark to light is roughly the same for moving and non-moving violations.[255]

In contrast, the estimates for local law enforcement stops point toward greater racial bias in stops of Latino drivers for moving violations. The share of Latino drivers decreases by a statistically significant 2.7 percentage points (at the 10% level) when light conditions switch from light to dark and increases by 3.1 percentage points (statistically significant at the 5% level) when conditions change from dark to light.[256] The estimates for non-moving violations are not statistically different from no change, but given their imprecision (possibly due to the fact that the sample size is less than half of the sample size for stops for moving violations), we also cannot reject the hypothesis that they are the same as for stops for moving violations.

The analysis of CHP stops does not reveal any evidence of racial bias for moving violations but provides some evidence of racial bias for non-moving violations. The shares of Black and Latino drivers decrease with the switch from light to dark but only the change in the share of Black drivers (dropping by 2.5 percentage points) is statistically significant at the 10% level.[257] The share of Latino drivers stopped for non-moving violations by the CHP increases by 2.3 percentage points when going from dark to light, but this is not statistically significant.[258]

Our tests of racial bias in local law enforcement stops motivated by the veil-of-darkness theory point consistently toward bias in stop decisions of both Latino and Black drivers, with some possible differences between stops for moving and non-moving violations. The evidence of racial bias is less consistent in traffic stops made by the CHP, though it is somewhat stronger in CHP stops for non-moving violations.

Conclusion and Recommendations

To effectively enforce the RJA in California, there needs to be an understanding of racial disparities in charging, convicting, and sentencing, and what potential determinants of those disparities may be. After controlling for differences in contextual factors across stops, this report provides widespread evidence of racial disparities in law enforcement interactions across a variety of outcomes, including racial bias in traffic stops and disparities in which stops end with an arrest. These are relevant considerations, all of which ultimately affect who is charged,

[254] *See infra* Technical Appendix Table C4.
[255] *See infra* Technical Appendix Table C4.
[256] *See infra* Technical Appendix Table C4.
[257] *See infra* Technical Appendix Table C5.
[258] *See infra* Technical Appendix Table C5.

convicted, and sentenced, as discussed in the *Young* decision[259] and further undergirded by RJA's call to consider how previous biases may have affected criminal history.

Our analysis of the 2019 RIPA data, which includes nearly four million stops from the fifteen largest law enforcement agencies in California, reveals notable differences across race/ethnicity in experiences with law enforcement during a stop.[260] These differences partially stem from context of the stop, agency and jurisdiction characteristics, and personal civilian traits. However, even after adjusting for these factors, stark racial disparities persist—particularly between Black and white civilians—and likely provide a conservative estimate of racial bias.

Black Californians are significantly more likely to be stopped than white Californians, and experiences during stops and outcomes afterward also vary.[261] We find that Black individuals are more than twice as likely to be searched as white individuals, but a lower share of those *searches* of Black people yield contraband, suggesting an inefficient practice at the very least.[262] Overall, searches yield some kind of contraband or evidence in slightly more than one-fifth of searches.[263]

Black people are also overrepresented among stops not leading to enforcement as well as in those leading to an arrest.[264] The seemingly contradictory pattern is partly due to a higher share of Black people stopped for reasonable suspicion, having an outstanding warrant, or being on parole/probation—contexts where stops are investigatory and do not lead to any enforcement, or they are more serious and may result in a booking.[265] Black people are 14% more likely to be arrested with the most restrictive set of controls, which contributes to differences in arrest history and a racially disparate set of individuals presented to the prosecutor for charging decisions.[266]

We also find that Black people are at least twice as likely as whites to experience so-called intrusive outcomes, ranging from being asked to step out of a vehicle, to being handcuffed, to the stop involving a weapon.[267] While relatively rare, officers report that about 0.4% of stops involve an officer's weapon.[268] Stops of Black individuals, however, are three times more likely to involve a weapon than stops of white individuals.[269] Accounting for context reduces the disparity, but stops of Black Californians are almost twice as likely to involve an officer's weapon as stops of white Californians.[270]

These racial inequities persist despite adjusting for context, providing empirical support for concerns historically voiced by communities of color. However, context around a stop *does* explain part of the observed racial gap. Differences in context—such as whether a person was stopped because of a traffic violation versus an outstanding arrest warrant—expose officers to varying risk levels when interacting with the community. Law enforcement might examine whether traffic stops in particular can be reduced without leading to any negative impact on public safety.

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[259] *Young,* 79 Cal. App. 5th 138.
[260] *See infra* Technical Appendix Table A2.
[261] *See supra* Figure 1 and *infra* Appendix Table A6–A11.
[262] *See supra* Figure 4; *see also supra* Figure 5.
[263] *See supra* Table 1.
[264] *See supra* Figure 6.
[265] *See infra* Technical Appendix Table A10.
[266] *See supra* Figure 6.
[267] *See supra* Figure 8.
[268] *See infra* Technical Appendix Table A9.
[269] *See supra* Figure 8; *see also infra* Technical Appendix Table A9.
[270] *See supra* Figure 8.

While traffic stops are intended to make our streets and highways safer to travel on, they represent the majority of stops and interactions between officers and the community, generating many of the inequities in experiences after a stop. This focus holds particular relevance for police and sheriff's departments, where more than one-third of traffic stops are for an equipment or non-moving violation (e.g., expired registration or overly tinted windows). By reducing these stops, law enforcement could mitigate some of the racially disparate experiences communities of color face, as well as reduce the risk of injury present for both officers and individuals.

While most traffic stops result in some enforcement (i.e., at least a warning) or discovery of contraband or evidence, officers in the state's fifteen largest law enforcement agencies reported about 211,000 stops in 2019 that led to no enforcement or discovery.[271] Altogether, no-enforcement/no-discovery stops took more than 80,000 hours of officer time.[272] Stops by police departments for non-moving violations account for close to 28,000 of these hours.[273]

Our analysis also finds that Black and Latino drivers are notably more likely to be stopped for a traffic violation that does not result in any enforcement or discovery of contraband or evidence.[274] Furthermore, Latino drivers and, especially, Black drivers are more likely than white drivers to experience intrusive actions during these stops.[275] While the vast majority of these stops do not go beyond verbal communication with the officer, thousands of them involve being searched (37,400 stops), detained (35,700), or handcuffed (15,000).[276] In rare cases, officers aim or use a weapon during traffic stops that do not lead to any enforcement or discovery.[277]

Potential alternative approaches to enforce traffic laws include mailing warnings or citations to the registered owner of the vehicle, especially if the reason for the stop is a non-moving violation and concerns about road safety may not be immediate. Alternative enforcement methods for moving violations are also possible. While automated speed cameras are not broadly legal in California (though they are being piloted in six cities starting in 2024),[278] they are used in many jurisdictions across the nation, and the National Transportation Safety Board found them to be an effective tool to reduce speeding-related crashes.[279] Red light cameras are legal and used in California and have been found by the Insurance Institute for Highway Safety to reduce traffic violations and crashes.[280] These strategies have the additional advantage of reducing discretion in enforcement decisions, which potentially could also lead to decreases in racial inequities in policing.[281]

Implementation of alternative enforcement should be balanced against the possibility that changes may hamper efforts to confiscate dangerous contraband, especially firearms, a concern at times voiced by law enforcement. The RIPA data show that some guns are indeed seized during traffic stops, though it is rare. Overall, officers confiscated firearms in 905 out of the close to 3.4 million traffic stops (0.03%) that took place in 2019 (officers

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[271] *See infra* Technical Appendix Table A5.
[272] *See supra* Table 2.
[273] *See supra* Table 2.
[274] *See supra* Figure 12.
[275] *See supra* Figure 12.
[276] *See supra* Figure 12.
[277] *See supra* Figure 12.
[278] AB 645, 2023 Gen. Assemb., Reg. Sess. (Cal. 2023), https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB645
[279] *Reducing Speeding-Related Crashes Involving Passenger Vehicles*, NAT'L TRANSP. SAFETY BD. 34-43 (2017), https://www.ntsb.gov/safety/safety-studies/Documents/SS1701.pdf; *Id*.
[280] *Effectiveness of Cameras*, INS. INST. FOR HIGHWAY SAFETY (2022), https://www.iihs.org/topics/red-light-running#effectiveness-of-cameras.
[281] COUNCIL ON CRIM. JUST., IMPLICIT BIAS TRAINING 1 (2021), https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/41697/implicit_bias.524b7c301e55.pdf.

also seized firearms in 2,119 out of the roughly 600,000 non-traffic stops).[282] Slightly more than half of these stops were for non-moving violations, primarily made by police departments. Police departments that conducted proportionally more searches during traffic stops typically confiscate lower shares of firearms. Consent and supervision-status searches have more lower confiscation shares than searches driven by evidence or urgency.

Lastly, our results from testing the veil-of-darkness theory provide evidence of racial bias as a contributing factor to racial disparities in traffic stops for Black and Latino drivers, underscoring the urgency of efforts that can reduce these inequities. While implicit bias training for officers is a frequent tool, research support of its effectiveness is not strong[283] and further evaluative research is needed.[284] Another approach to consider is diversifying police staff. While there are practical challenges to recruiting diverse police staff, recent research finds evidence that such efforts may well reduce racial inequities, and suggests reallocating officers to calls from same-race/ethnicity neighborhoods as a complementing approach.[285] Officer experience and seniority is another factor that likely matters, and Ba et al. find evidence suggesting that equalizing officer seniority across districts within a law enforcement agency jurisdiction may reduce racial inequities and improve public safety.[286]

Given the inherent risks involved in traffic stops, successful implementation of alternative enforcement strategies for non-moving violations has the potential to maintain public and road safety, while improving officer and civilian safety, enhancing police efficiency, and reducing racial inequities. Implementation of these efforts should include rigorous assessments of their impacts on these important outcomes.

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[282] Authors' estimates from the California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
[283] *Id*. at 3-4.
[284] *See* Mychal Machado & Ashley Lugo, *A Behavioral Analysis of Two Strategies to Eliminate Racial Bias in Police Use of Force* BEHAV. ANALYSIS IN PRAC. 2 (2021), https://www.researchgate.net/publication/350022930_A_Behavioral_Analysis_of_Two_Strategies_to_Eliminate_Racial_Bias_in_Police_Use_of_Force.
[285] *See generally* Bocar A. Ba et al., *The Role of Officer Race and Gender in Police-Civilian Interactions in Chicago*, 371 (6530) SCIENCE 696, 696–702 (2021) ; *see also* Mark Hoekstra & CarlyWill Sloan, *Does Race Matter for Police Use of Force? Evidence from 911 Calls*, WORKING PAPER NO. 26774, NAT'L BUREAU OF ECON. RSCH., (2020) https://doi.org/10.3386/w26774.
[286] *See* Bocar Ba et al., *Police Officer Assignment and Neighborhood Crime,* WORKING PAPER NO. 29243, NAT'L BUREAU OF ECON. RSCH. (2021), https://www.nber.org/system/files/working_papers/w29243/w29243.pdf.

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Racial Disparities in Law Enforcement Stops

Technical Appendices

CONTENTS

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Appendix A. Racial and Identity Profiling Act (RIPA) and Descriptive Statistics

AB 953: The Racial and Identity Profiling Act of 2015

The data utilized was made possible by legislation passed in 2015 by the California Legislature, known as the Racial and Identity Profiling Act (RIPA) of 2015.[285] While issues of race and policing were not new, numerous high-profile officer-involved shootings in the years preceding 2015 had again brought police violence against communities of color into the state and national spotlight. The legislature believed this legislation was needed to examine these issues, and to unite community members and law enforcement in an effort to develop solutions to eliminate racial and identity profiling in law enforcement. The Racial and Identity Profiling Act of 2015, also known as AB 953, included three important actions:

1. Required law enforcement agencies to begin collecting and reporting data on citizen complaints that allege racial and identity profiling;
2. Required law enforcement agencies to collect perceived demographic and other detailed data regarding pedestrian and traffic stops;
3. Created the Racial and Identity Profiling Advisory (RIPA) Board, for the purpose of eliminating racial and identity profiling and improving diversity and racial and identity sensitivity in law enforcement.[286]

The pedestrian and vehicle stop data requirement is what allows us to conduct this research. Specifically, the law requires California law enforcement agencies employing peace officers to annually report their stop data to the California Attorney General, where a "stop" is defined as any detention by a peace officer of a person, or any peace officer interaction with a person in which the officer conducts a search.[287]

The statutorily mandated data elements include person-level and stop-level information. Officers are required to record their perception of the identity characteristics pertaining to each stopped person, including their race or ethnicity, gender, approximate age, lesbian, gay, bisexual, or transgender (LGBT) status, English fluency, and disability. Officers are prohibited from asking the person stopped to self-identify these characteristics.[288] Consequently, officer perceptions of identity characteristics may differ from how an individual self-identifies. In addition to these person-level observations, a number of data elements provide stop-level information. These elements include: reason for stop (includes, for example, for a traffic violation, reasonable suspicion,

[285] A.B. 953, 2015 Gen. Assemb., Reg. Sess. (Cal. 2015).
[286] *Id.*
[287] *Id.*
[288] *Id.*

parole/probation/PRCS/mandatory supervision, and knowledge of outstanding arrest warrant/wanted person, and consensual encounter resulting in search); action taken by officer during stop (such as suspect removed from vehicle, removed from vehicle by physical contact, curbside detention, handcuffed, canine search, use of electronic device, chemical spray, and use of firearm); reason for search (probable cause, consent, etc.); contraband or evidence discovered (such as guns, drugs, drug paraphernalia, alcohol, money, or stolen property); and enforcement result of stop (includes no action, warning, citation, cite and release, booking, and psychiatric hold).[289]

TABLE A1

California's 15 Largest Law Enforcement Agencies Reported almost 4 Million Stops in 2019.

	Number of Stops	Number of Sworn Officers	Number of Stops per Officer
All 15 Agencies	3,992,074	38,172	105
Law Enforcement Agency			
California Highway Patrol	2,172,023	7,230	300
Police Departments	1,230,738	18,173	68
Los Angeles	712,807	9,947	72
San Diego	187,231	1,764	106
San Francisco	101,614	2,279	45
Sacramento	68,012	678	100
Fresno	51,849	806	64
San Jose	44,306	1,150	39
Long Beach	40,524	809	50
Oakland	24,395	740	33
Sheriff Departments	589,313	12,769	46
Los Angeles County	196,850	6,647	30
San Bernardino County	157,715	1,314	120
Sacramento County	65,029	1,400	46
San Diego County	60,944	865	70
Riverside County	58,379	1,453	40
Orange County	50,396	1,090	46

SOURCES: Authors calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019 and Criminal Justice Personnel, 2019. Law Enforcement Personnel is limited to full-time non-jail personnel.

[289] *Id.*

TABLE A2

Perceived Personal Traits and Contexts of Stops by Perceived Race/Ethnicity

	White	Black	Latino	Asian	Middle East/ South Asian	Pacific Islander	Native American	Multi Race/ Ethnicity
Demographics								
Male	67.0%	70.7%	74.7%	66.0%	81.1%	67.0%	55.0%	68.0%
Female	32.9%	29.0%	25.2%	33.9%	18.8%	32.1%	36.6%	30.2%
Transgender Man	0.06%	0.15%	0.08%	0.03%	0.02%	0.09%	0.17%	0.54%
Transgender Woman	0.04%	0.10%	0.04%	0.02%	0.01%	0.06%	0.15%	0.12%
Gender Nonconforming	0.04%	0.04%	0.02%	0.03%	0.02%	0.75%	8.06%	1.09%
LGBT	0.7%	0.9%	0.6%	0.5%	0.3%	1.0%	1.1%	1.8%
Age	39.7	35.2	34.3	38.3	37.0	36.2	38.4	34.6
Limited English Proficiency	0.5%	0.9%	8.3%	6.9%	3.6%	1.4%	1.0%	2.0%
Disability								
No Disability	98.7%	98.1%	99.3%	99.0%	99.5%	98.5%	90.4%	98.5%
Mental Health Condition	0.93%	1.41%	0.46%	0.65%	0.33%	1.14%	1.05%	1.06%
Development Disability	0.08%	0.11%	0.05%	0.08%	0.03%	0.13%	0.15%	0.14%
Multiple Disabilities	0.09%	0.12%	0.04%	0.07%	0.03%	0.12%	8.00%	0.17%
Reason For Stop								
Traffic Stop	85.5%	74.7%	86.4%	93.3%	95.4%	84.8%	83.2%	83.3%
Reasonable Suspicion	11.7%	21.0%	10.7%	5.6%	4.0%	12.1%	12.7%	13.2%
Parole/Probation	0.55%	1.23%	0.75%	0.18%	0.10%	0.63%	0.93%	0.93%
Outstanding Warrant	0.59%	1.19%	0.70%	0.28%	0.18%	0.98%	1.29%	0.86%
Consensual Encounter/Search	1.23%	1.35%	1.09%	0.44%	0.22%	1.02%	1.27%	1.26%
School/Education Violation	0.45%	0.53%	0.39%	0.23%	0.13%	0.54%	0.63%	0.50%
Call for Services	5.17%	8.36%	4.00%	3.03%	2.17%	5.96%	5.65%	6.57%
Basis For Search								
Search Warrant	0.09%	0.22%	0.17%	0.15%	0.06%	0.21%	0.12%	0.16%
Parole/Probation	1.67%	5.46%	2.30%	0.63%	0.38%	2.15%	1.80%	2.97%
Visible Contraband	0.24%	1.34%	0.53%	0.13%	0.11%	0.27%	0.21%	0.72%
Odor of Contraband	0.12%	1.45%	0.51%	0.11%	0.09%	0.22%	0.18%	0.63%
Contraband Found								
Any Contraband	1.82%	4.43%	2.54%	0.98%	0.60%	2.32%	2.15%	3.12%
Weapon	0.37%	1.08%	0.60%	0.25%	0.17%	0.69%	0.69%	0.75%
Property	0.27%	0.66%	0.32%	0.20%	0.11%	0.40%	0.16%	0.47%
Drugs	1.55%	3.22%	1.86%	0.74%	0.45%	1.72%	1.96%	2.46%
Other	0.78%	1.95%	1.42%	0.45%	0.33%	1.09%	1.17%	1.42%
Law Enforcement Agency								
California Highway Patrol	60.7%	35.0%	54.4%	61.1%	68.8%	56.1%	61.6%	47.8%
Police Departments								
Los Angeles	10.0%	30.6%	21.1%	11.5%	13.5%	8.2%	5.6%	9.9%
San Diego	6.02%	5.84%	3.45%	3.91%	2.60%	6.77%	4.35%	4.01%

San Francisco	2.66%	3.80%	1.25%	5.12%	3.98%	5.28%	1.70%	6.71%
Sacramento	1.51%	4.24%	0.93%	1.54%	0.88%	2.46%	1.10%	2.59%
Fresno	1.05%	1.14%	1.68%	1.08%	0.94%	0.51%	1.04%	0.68%
San Jose	0.77%	0.67%	1.41%	2.27%	0.88%	1.68%	0.79%	2.01%
Long Beach	0.71%	1.75%	0.95%	0.86%	0.30%	1.93%	0.48%	6.18%
Oakland	0.25%	2.02%	0.39%	0.51%	0.31%	0.84%	0.35%	0.76%
Sheriff Departments								
Los Angeles	3.42%	5.52%	6.12%	5.80%	2.42%	4.61%	1.46%	7.39%
San Bernardino	4.59%	4.32%	3.79%	2.08%	1.47%	3.25%	5.11%	5.59%
San Diego	2.61%	0.84%	1.24%	1.11%	1.11%	2.98%	4.84%	1.04%
Sacramento	2.05%	2.89%	0.65%	0.93%	0.77%	2.44%	1.23%	3.32%
Riverside	1.71%	1.01%	1.63%	0.84%	0.58%	1.48%	1.86%	1.40%
Orange County	1.93%	0.31%	1.02%	1.35%	1.43%	1.48%	8.45%	0.63%
Number of Stops	1,322,201	635,092	1,552,485	228,790	187,128	21,092	8,271	37,015

SOURCES: Racial and Identity Profiling Act (RIPA) stop data, 2019.

NOTES: The 2019 Wave 2 data are limited to California's fifteen largest law enforcement agencies.

Table A3 shows the rate at which each law enforcement agency conducted a search during a stop, and whether it encountered any type of contraband during that search. The lowest search rate belongs to the CHP, which is perhaps not surprising, given its emphasis on traffic violations. CHP officers conducted a search only 1.6% of the time. By contrast, the Oakland Police Department searched fully half of the people it stopped. On average, police departments showed a slightly higher search rate (24%) than did sheriff's departments (21%), but there is clearly plenty of variation between individual departments.

Once an officer conducts a search, the yield rate shows what percentage of the time some contraband turned up. For instance, of the searches that the Orange County Sheriff's Department conducted, they discovered contraband 31.2% of the time, with drugs as the most commonly found type, at 24.7%. Drugs are the most commonly discovered type of contraband for each of the law enforcement agencies. (The columns typically add to more than the rate of "Any" type of contraband, since more than one type may be found during any search.)

TABLE A3
Search Rates and Results, by Law Enforcement Agency

		Yield Rates:						
	Search Rate	Any	Weapon	Property	Drug	Other	No. of Stops	No. of Searches
Agency:								
CHP	1.6%	11.1%	1.7%	1.0%	8.6%	2.1%	2,172,023	34,920
Sheriff Departments								
Los Angeles	17.9%	25.2%	3.2%	1.5%	18.2%	5.3%	196,850	35,151
San Bernardino	31.9%	15.7%	3.1%	2.2%	10.3%	2.7%	157,715	50,244
San Diego	17.9%	23.0%	3.0%	2.6%	17.7%	4.0%	65,029	11,630
Sacramento	28.1%	16.0%	3.8%	2.9%	8.3%	4.9%	60,944	17,147
Riverside	5.9%	19.1%	2.5%	2.3%	13.4%	3.6%	58,379	3,469
Orange	17.4%	31.2%	2.6%	2.9%	24.7%	5.5%	50,396	8,752
Police Departments								
Los Angeles	24.1%	20.4%	4.5%	2.2%	11.6%	6.4%	712,807	172,018
San Diego	21.1%	23.6%	3.7%	2.7%	16.3%	5.5%	187,231	39,528
San Francisco	17.8%	33.0%	6.9%	7.6%	16.5%	12.3%	101,614	18,133
Sacramento	31.5%	27.5%	4.8%	3.5%	18.1%	7.1%	68,012	21,392
Fresno	10.5%	21.3%	5.4%	2.5%	11.0%	5.7%	51,849	5,429

San Jose	31.2%	34.5%	5.3%	4.5%	24.8 %	8.3%	44,306	13,832
Long Beach	20.5%	18.5%	4.1%	2.0%	9.7%	5.3%	40,524	8,289
Oakland	50.1%	29.1%	9.0%	3.4%	14.0 %	10.0 %	24,395	12,230

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Table A4 summarizes the minimum level of enforcement that officers from each agency levied on the stops they conducted. CHP officers issued at least a warning nearly all of the time (98.5%)—among the highest rates of any agency. They issued at least a citation in 74.4% of all stops—again, among the highest. By contrast, CHP officers' rate of making at least an arrest (either a cite and release or a booking) was the lowest of any agency, at 4.1%, and also booked the lowest share (3.3%) of individuals stopped into jail.

These rates vary widely between agencies. Note that the Los Angeles and Riverside Sheriff's Departments posted similar rates of issuing at least a warning (91.3% and 93.1%, respectively), but ended up with very different rates of issuing at least a citation (67.8% and 7.1%, respectively). Citation rates cluster together somewhat more closely among police departments.

TABLE A4
Minimum Enforcement Level of Stop, by Law Enforcement Agency

	No. of Stops	Warning	Citation	Arrest	Booking
Agency:					
CHP	2,172,023	98.5%	74.4%	4.1%	3.3%
Sheriff Departments					
Los Angeles	196,850	91.3%	71.8%	67.8%	11.7%
San Bernardino	157,715	62.5%	29.3%	15.6%	13.5%
San Diego	65,029	75.2%	48.5%	13.4%	10.6%
Sacramento	60,944	66.3%	23.6%	18.0%	15.7%
Riverside	58,379	93.1%	76.4%	7.1%	4.0%
Orange	50,396	81.3%	55.7%	11.8%	5.9%
Police Departments					
Los Angeles	712,807	77.8%	53.3%	11.1%	8.9%
San Diego	187,231	58.5%	41.8%	18.7%	13.5%
San Francisco	101,614	81.6%	57.1%	22.4%	9.6%
Sacramento	68,012	58.3%	32.2%	14.8%	11.3%
Fresno	51,849	89.2%	73.7%	14.7%	7.8%
San Jose	44,306	73.0%	49.7%	22.0%	14.1%
Long Beach	40,524	73.0%	52.3%	12.7%	7.4%
Oakland	24,395	69.0%	53.5%	28.6%	23.9%

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Table A5 captures the minimum level of intrusiveness of the actions that an officer took during a stop. As with the level of enforcement, we present these as a hierarchy—for instance, CHP officers at least ordered the subject to step out of their vehicle 2.7% of the time. This occurred with considerably more frequency among the other agencies—from 8.0% in the Riverside Sheriff's Department, to 54.8% in the Oakland Police Department. Incrementally more intrusive levels of involvement occurred with incrementally less frequency as we move to some physical contact, to being detained. In most agencies, there is then a subsequent discrete drop-off in the frequency of being at least handcuffed (e.g., 45.7% to 28.0% in Sacramento's Sheriff's Department, and from 31.1% to 17.2% in its police department). Similarly, we see a universal drop-off between that and the next two level of intrusiveness: brandishing a weapon to obtain compliance and actually using a weapon.

TABLE A5

Minimum Level of Intrusiveness or Use of Force, by Law Enforcement Agency

		Intrusiveness:						
	No. of Stops	**No Action**	**Out of Vehicle**	**Contact**	**Detained**	**Handcuffed**	**Force/ Weapon**	**Weapon Used**
Agency:								
CHP	2,172,023	97.3%	2.7%	1.8%	1.7%	1.5%	0.0%	0.0%
Sheriff Departments								
Los Angeles	196,850	71.7%	28.3%	26.6%	25.5%	8.6%	0.4%	0.1%
San Bernardino	157,715	65.3%	34.7%	31.5%	30.5%	15.4%	1.3%	0.1%
San Diego	65,029	74.6%	25.4%	23.7%	23.5%	13.7%	0.4%	0.1%
Sacramento	60,944	50.8%	49.2%	45.9%	45.7%	28.0%	2.3%	0.2%
Riverside	58,379	92.0%	8.0%	7.1%	7.0%	3.8%	0.2%	0.0%
Orange	50,396	78.0%	22.0%	19.6%	19.3%	5.6%	0.4%	0.0%
Police Departments								
Los Angeles	712,807	66.8%	33.2%	29.6%	29.5%	17.8%	0.9%	0.1%
San Diego	187,231	63.2%	36.8%	35.2%	34.9%	26.8%	0.5%	0.1%
San Francisco	101,614	64.6%	35.4%	33.9%	33.2%	14.1%	0.4%	0.1%
Sacramento	68,012	64.2%	35.8%	34.6%	31.1%	17.2%	1.7%	0.1%
Fresno	51,849	77.6%	22.4%	18.9%	18.7%	7.8%	0.5%	0.0%
San Jose	44,306	60.8%	39.2%	31.9%	31.5%	21.7%	1.7%	0.2%
Long Beach	40,524	66.3%	33.7%	31.8%	31.4%	10.6%	1.2%	0.1%
Oakland	24,395	45.2%	54.8%	51.8%	51.5%	39.7%	2.6%	0.3%

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Table A6 shows one way of examining disproportionality in the racial and ethnic distribution of stops and searches, along with the results of those searches. The italicized numbers show the share of each type of incident. Recall that Black residents composed 6% of California's population in 2019; here we see that they constituted 15.9% of the stops that these agencies made. Furthermore, they were the subject of 28.8% of the searches that the agencies conducted. Compare this with the white residents, who were 36% of the population, but made up 33.1% of the stops, and only 23.9% of the subsequent searches.

These rates must be accounted for when considering each racial/ethnic group's contribution to the resulting discovery of various types of contraband. For instance, Latino subjects accounted for 39% of the incidents in which officers found drugs. But officers' searches of Latinos constituted 42.1% of all searches—a percentage slightly larger than Latinos' representation in the overall population (39%).

TABLE A6

Searches Conducted and Shares of Incidents of Contraband Discovered, by Race/Ethnicity

		Asian	Black	Latino	Middle Eastern / South Asian	Multi Race/ Ethnic	Native American	Pacific Islander	White	Total
Number	**Stops**	228,790	635,092	1,552,485	187,128	37,015	8,271	21,092	1,322,201	**3,992,074**
Shares of Total		*5.7%*	*15.9%*	*38.9%*	*4.7%*	*0.9%*	*0.2%*	*0.5%*	*33.1%*	
	Searches	9,709	130,344	190,167	5,789	4,841	888	2,178	108,248	**452,164**
		2.1%	*28.8%*	*42.1%*	*1.3%*	*1.1%*	*0.2%*	*0.5%*	*23.9%*	***11.3%***
Contraband found:										
	Any	2,253	28,152	39,455	1,119	1,155	178	490	24,005	**96,807**
		2.3%	*29.1%*	*40.8%*	*1.2%*	*1.2%*	*0.2%*	*0.5%*	*24.8%*	***21.4%***
	Weapon	464	5,737	7,808	250	228	45	117	3,860	**18,509**
		2.5%	*31.0%*	*42.2%*	*1.4%*	*1.2%*	*0.2%*	*0.6%*	*20.9%*	***4.1%***
	Property	380	3,487	4,241	176	145	11	65	2,910	**11,415**
		3.3%	*30.5%*	*37.2%*	*1.5%*	*1.3%*	*0.1%*	*0.6%*	*25.5%*	***2.5%***
	Drugs	1,416	17,097	23,597	676	713	121	293	16,580	**60,493**
		2.3%	*28.3%*	*39.0%*	*1.1%*	*1.2%*	*0.2%*	*0.5%*	*27.4%*	***13.4%***
	Other	575	7,554	12,007	282	324	38	139	4,961	**25,880**
		2.2%	*29.2%*	*46.4%*	*1.1%*	*1.3%*	*0.1%*	*0.5%*	*19.2%*	***5.7%***

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Table A7 demonstrates another way of presenting disproportionality in searches. These are incidences of searches turning up various types of contraband. The italicized percentages are conditional upon a search having been conducted—as we saw in Table A6, those rates vary considerably between races/ethnicities. The un-italicized percentages are unconditional—they simply show the percentage of all stops of a person of that race/ethnicity that turned up a contraband item.

TABLE A7
Search and Yield Rates, by Race/Ethnicity

		Asian	Black	Latino	Middle Eastern / South Asian	Multi Race/ Ethnic	Native American	Pacific Islander	White	Total
Search Rate		4.2%	20.5%	12.2%	3.1%	13.1%	10.7%	10.3%	8.2%	11.3%
Yield Rates:										
Unconditional	**Any**	1.0%	4.4%	2.5%	0.6%	3.1%	2.2%	2.3%	1.8%	2.4%
Conditional		*23.2%*	*21.6%*	*20.7%*	*19.3%*	*23.9%*	*20.0%*	*22.5%*	*22.2%*	*21.4%*
	Weapon	0.2%	0.9%	0.5%	0.1%	0.6%	0.5%	0.6%	0.3%	0.5%
		4.8%	*4.4%*	*4.1%*	*4.3%*	*4.7%*	*5.1%*	*5.4%*	*3.6%*	*4.1%*
	Property	0.2%	0.5%	0.3%	0.1%	0.4%	0.1%	0.3%	0.2%	0.3%
		3.9%	*2.7%*	*2.2%*	*3.0%*	*3.0%*	*1.2%*	*3.0%*	*2.7%*	*2.5%*
	Drugs	0.6%	2.7%	1.5%	0.4%	1.9%	1.5%	1.4%	1.3%	1.5%
		14.6%	*13.1%*	*12.4%*	*11.7%*	*14.7%*	*13.6%*	*13.5%*	*15.3%*	*13.4%*
	Other	0.3%	1.2%	0.8%	0.2%	0.9%	0.5%	0.7%	0.4%	0.6%
		5.9%	*5.8%*	*6.3%*	*4.9%*	*6.7%*	*4.3%*	*6.4%*	*4.6%*	*5.7%*

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Table A8 shows the minimum level of enforcement that law enforcement officers levied on people from each racial/ethnic group that they stopped in 2019, by absolute number and share of the total. That is, of those to whom officers issued at least a warning upon being stopped, 5% appeared to be of Middle Eastern/South Asian descent. Among Asian and white subjects, the general trend is that, as the enforcement level increases, a smaller portion of their stops are subjected to that level. That is, 33.1% of those who were at least cited were white, while just 28.4% of those booked were white. However, among Black and Latino subjects, that share tends to increase with the severity of enforcement. Of those issued at least a citation, 13.1% were Black; of those booked into jail, 23% were Black.

TABLE A8

Minimum Enforcement Following a Stop, by Race/Ethnicity

	Warning		Citation		Arrest		Booking		Booking/Arrests
	Number	*Share*							
Asian	215,090	*6.1%*	165,299	*6.5%*	21,466	*4.7%*	7,028	*2.7%*	32.7%
Black	503,703	*14.3%*	335,597	*13.1%*	90,562	*20.0%*	60,352	*23.0%*	66.6%
Latino	1,374,400	*39.1%*	1,027,605	*40.2%*	193,688	*42.8%*	111,157	*42.3%*	57.4%
Middle Eastern/ South Asian	176,935	*5.0%*	137,339	*5.4%*	10,011	*2.2%*	4,243	*1.6%*	42.4%
Multiracial	32,017	*0.9%*	23,320	*0.9%*	4,657	*1.0%*	2,718	*1.0%*	58.4%
Native American	7,381	*0.2%*	5,135	*0.2%*	1,214	*0.3%*	892	*0.3%*	73.5%
Pacific Islander	18,717	*0.5%*	13,999	*0.5%*	2,729	*0.6%*	1,585	*0.6%*	58.1%
White	1,187,004	*33.8%*	845,634	*33.1%*	128,174	*28.3%*	74,536	*28.4%*	58.2%
Total	**3,515,247**	***88.1%***	**2,553,928**	***64.0%***	**452,501**	***11.3%***	**262,511**	***6.6%***	**58.0%**

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Table A9 describes the minimum level of intrusiveness that officers impose during stops, by race and ethnicity of the subjects. The italicized numbers register the share of all stops experiencing a certain minimum level of intrusiveness that were of persons of a particular race/ethnicity. That is, of all stops in which the officer at least handcuffed the subject, 2.4% appeared to the officer to be Asian, 26.8% Black, 41.2% Latino, 26.2% white, and so forth. As the level of intrusiveness increases, say, to the point of brandishing a weapon, those figures change to 2.2% Asian, 29.1% Black, 43.1% Latino, and 20.5% white.

TABLE A9

Minimum Level of Intrusiveness or Use of Force, by Race/Ethnicity

		Asian	Black	Latino	Middle Eastern / South Asian	Multi Race/ Ethnic	Native American	Pacific Islander	White	Total
		17,24	176,48	267,28					169,65	
#	**Out of Vehicle**	9	2	8	11,468	6,885	1,351	3,347	8	653,728
Share		*2.6%*	*27.0%*	*40.9%*	*1.8%*	*1.1%*	*0.2%*	*0.5%*	*26.0%*	*16.4%*
		15,07	156,85	235,13					154,26	
	Physical Contact	7	8	0	9,915	6,099	1,219	3,042	2	581,602
		2.6%	*27.0%*	*40.4%*	*1.7%*	*1.0%*	*0.2%*	*0.5%*	*26.5%*	*14.6%*
		14,58	154,57	231,84					150,98	
	Detained	9	0	7	9,487	6,024	1,217	2,996	3	571,713
		2.6%	*27.0%*	*40.6%*	*1.7%*	*1.1%*	*0.2%*	*0.5%*	*26.4%*	*14.3%*
				138,52						
	Handcuffed	8,224	90,296	1	5,111	3,312	803	1,855	88,208	336,330
		2.4%	*26.8%*	*41.2%*	*1.5%*	*1.0%*	*0.2%*	*0.6%*	*26.2%*	*8.4%*
	Involves Weapon	370	5,219	7,298	219	192	30	118	3,472	16,918
		2.2%	*30.8%*	*43.1%*	*1.3%*	*1.1%*	*0.2%*	*0.7%*	*20.5%*	*0.4%*
	Weapon Used	43	561	747	31	29	3	17	499	1,930
		2.2%	*29.1%*	*38.7%*	*1.6%*	*1.5%*	*0.2%*	*0.9%*	*25.9%*	*0.0%*
	Used/Involves	11.6%	10.7%	10.2%	14.2%	15.1%	10.0%	14.4%	14.4%	11.4%

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

TABLE A10

Post-Stop Outcomes, by Reason for Stop, Statewide CHP and Local Law Enforcement Agencies, and Race/Ethnicity

	All		Police/Sheriff		CHP	
	Black	White	Black	White	Black	White
			Search Rate			
Traffic Violation	11.1%	2.6%	19.5%	6.1%	1.5%	1.2%
Reasonable Suspicion	43.8%	33.9%	44.0%	34.2%	17.7%	18.7%
Warrant/Parole/Probation	72.3%	66.4%	72.8%	67.5%	22.3%	26.1%
			Conditional Yield Rates			
			Some Contraband or Evidence Found			
Traffic Violation	18.6%	21.2%	19.1%	25.1%	11.9%	12.8%
Reasonable Suspicion	25.5%	24.8%	25.5%	24.9%	26.1%	20.4%
Warrant/Parole/Probation	21.0%	23.3%	21.0%	23.2%	21.6%	35.5%
			Enforcement Rates			
			At least a Warning			
Traffic Violation	86.8%	95.7%	76.7%	88.8%	98.5%	98.6%
Reasonable Suspicion	59.5%	57.2%	59.2%	56.3%	95.3%	95.8%
Warrant/Parole/Probation	55.6%	62.2%	55.2%	61.3%	91.6%	97.3%
			At least a Citation			
Traffic Violation	56.7%	68.2%	42.9%	61.8%	72.5%	70.8%
Reasonable Suspicion	42.0%	38.8%	41.9%	38.5%	47.9%	53.4%
Warrant/Parole/Probation	51.8%	58.7%	51.4%	57.7%	88.6%	94.6%
			Arrest (Cite and Release or Booking)			
Traffic Violation	7.7%	6.0%	10.4%	13.2%	4.5%	3.1%
Reasonable Suspicion	32.9%	29.6%	32.8%	29.2%	41.8%	46.9%
Warrant/Parole/Probation	51.1%	57.4%	50.7%	56.5%	86.1%	90.0%
			Booking			
Traffic Violation	3.5%	2.5%	3.5%	2.5%	3.4%	2.5%
Reasonable Suspicion	26.0%	22.4%	25.9%	22.1%	30.6%	34.4%
Warrant/Parole/Probation	46.5%	50.9%	46.3%	50.4%	65.7%	68.8%
			Intrusiveness/Use of Force			
			At least asked to step out of vehicle			
Traffic Violation	16.0%	5.2%	27.5%	12.4%	2.8%	2.1%
Reasonable Suspicion	62.5%	57.2%	62.8%	57.9%	23.5%	25.3%
Warrant/Parole/Probation	72.8%	76.5%	73.4%	77.8%	21.7%	31.0%
			At least some physical contact			
Traffic Violation	12.4%	4.0%	21.8%	10.6%	1.7%	1.3%
Reasonable Suspicion	61.1%	56.1%	61.4%	56.9%	21.5%	22.4%
Warrant/Parole/Probation	69.5%	74.7%	70.1%	75.9%	21.1%	29.3%
			At least detained			
Traffic Violation	12.1%	3.8%	21.2%	9.9%	1.7%	1.3%
Reasonable Suspicion	60.7%	55.8%	61.1%	56.5%	21.4%	22.4%
Warrant/Parole/Probation	69.1%	74.2%	69.6%	75.5%	20.5%	27.8%
			At least handcuffed			
Traffic Violation	5.3%	1.8%	8.6%	3.5%	1.5%	1.1%
Reasonable Suspicion	40.6%	35.1%	40.8%	35.4%	19.4%	20.2%

Warrant/Parole/Probation	52.5%	52.0%	52.9%	52.8%	17.5%	23.4%
			Officer weapon involved			
Traffic Violation	0.17%	0.05%	0.26%	0.11%	0.06%	0.03%
Reasonable Suspicion	2.86%	1.54%	2.87%	1.54%	2.36%	1.60%
Warrant/Parole/Probation	3.45%	2.54%	3.44%	2.54%	4.22%	2.44%
			Officer Weapon Used			
Traffic Violation	0.02%	0.01%	0.04%	0.02%	0.01%	0.01%
Reasonable Suspicion	0.29%	0.20%	0.29%	0.20%	0.28%	0.21%
Warrant/Parole/Probation	0.29%	0.26%	0.28%	0.25%	0.60%	0.49%

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

TABLE A11

Rates of Minimum Enforcement Level of Stop, by Race/Ethnicity

Race/ethnicity	All Stops	Warning / Total	Citation / Total	Arrest / Total	Booking / Total
Asian	228,790	94.0%	72.2%	9.4%	3.1%
Black	635,092	79.3%	52.8%	14.3%	9.5%
Latino	1,552,485	88.5%	66.2%	12.5%	7.2%
ME_SA	187,128	94.6%	73.4%	5.3%	2.3%
Multi	37,015	86.5%	63.0%	12.6%	7.3%
Native	8,271	89.2%	62.1%	14.7%	10.8%
PacIsl	21,092	88.7%	66.4%	12.9%	7.5%
White	1,322,201	89.8%	64.0%	9.7%	5.6%
Total	**3,992,074**	**88.1%**	**64.0%**	**11.3%**	**6.6%**

SOURCE: Author calculations using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

Appendix B. Regression Model Specifications and Results

To examine race/ethnicity/origin group differences in stop outcomes, we examine conditional probabilities of a set of stop outcomes:

i) Probability that the stop resulted in a search of person or property (i.e. search rate).

ii) Given the stop involved a search, the probability that the search yielded contraband (i.e. hit or yield rate).

iii) Probability that the stop resulted in some level of enforcement (i.e. enforcement rate).

iv) Probability that the stop resulted in some "intrusive" action and/or use of force.

To do so, we estimate various linear probability models of the (conditional) probability of the above stop outcomes, of the following general specification:

Where Y_{ijk}, represent stop outcomes for individual i, by law enforcement agency j nearest city k. $\boldsymbol{Race_i}$ is a vector of perceived race/ethnicity/origin indicator variables, with parameter vector $\boldsymbol{\beta}$ to be estimated where the estimates represents the difference in the outcome between individuals of perceived non-white race/ethnicity j and whites (i.e. white is the reference group). $\boldsymbol{Demog_i}$ is a matrix of perceived personal or demographic traits, such as gender, age, LGBT, limited English proficiency and disabilities (including mental health status). $\boldsymbol{RFS_{ij}}$ is a vector of reported reasons for the stop of individual I by law enforcement agency j, $\boldsymbol{LEA_j}$ are law enforcement fixed effects and $\boldsymbol{City_k}$ are fixed effects of the location of the stop (nearest city).

TABLE B1

Search rates, relative to those of omitted categories

Model:	(1)	(2)	(3)	(4)
Included variables				
Black	0.123***	0.109***	0.073***	0.042***
	(0.001)	(0.001)	(0.000)	(0.016)
Latino	0.041***	0.025***	0.032***	0.019***
	(0.000)	(0.000)	(0.000)	(0.006)
Asian	-0.039***	-0.041***	-0.010***	-0.014***
	(0.000)	(0.000)	(0.000)	(0.002)
Middle Eastern/South Asian	-0.051***	-0.064***	-0.021***	-0.019***
	(0.000)	(0.000)	(0.000)	(0.002)
Native American	0.025***	0.009**	0.016***	0.019***
	(0.003)	(0.004)	(0.003)	(0.004)
Pacific Islander	0.021***	0.012***	0.012***	0.011***
	(0.002)	(0.002)	(0.002)	(0.004)
Multi Race/Ethnicity	0.049***	0.035***	0.029***	0.018***
	(0.002)	(0.002)	(0.002)	(0.005)
Female		-0.069***	-0.049***	-0.049***
		(0.000)	(0.000)	(0.011)
Transgender Man		0.079***	0.043***	-0.002
		(0.009)	(0.008)	(0.009)
Transgender Woman		0.072***	-0.013	-0.045***
		(0.011)	(0.011)	(0.015)
Gender Nonconforming		-0.004	0.007	-0.027
		(0.009)	(0.009)	(0.018)
LGBT		0.065***	-0.001	0.008
		(0.003)	(0.002)	(0.006)
Ages 15-17		0.002	0.092***	0.096***
		(0.005)	(0.005)	(0.011)
Ages 18-24		-0.126***	0.057***	0.070***
		(0.005)	(0.005)	(0.016)
Ages 25-34		-0.118***	0.057***	0.069***
		(0.005)	(0.005)	(0.020)
Ages 35-44		-0.139***	0.036***	0.053**
		(0.005)	(0.005)	(0.025)
Ages 45-54		-0.165***	0.015***	0.034
		(0.005)	(0.005)	(0.027)
Ages 55-64		-0.186***	0.002	0.023
		(0.005)	(0.005)	(0.029)
Ages 65+		-0.206***	-0.002	0.019
		(0.005)	(0.005)	(0.028)
Limited English Proficiency		0.027***	0.016***	0.005
		(0.001)	(0.001)	(0.006)
Disability: Deafness		0.108***	0.021***	-0.010
		(0.008)	(0.007)	(0.011)

Disability: Speech	0.147***	0.028***	0.003
	(0.009)	(0.008)	(0.012)
Disability: Blindness	0.253***	0.060***	0.041**
	(0.017)	(0.016)	(0.020)
Disability: Mental Health	0.395***	0.070***	0.067***
	(0.003)	(0.003)	(0.020)
Disability: Development	0.195***	-0.041***	-0.039***
	(0.012)	(0.012)	(0.011)
Disability: Hyperactivity	-0.088	-0.210***	-0.198**
	(0.071)	(0.066)	(0.087)
Disability: Other	0.194***	0.024***	0.009
	(0.006)	(0.006)	(0.010)
Disability: Multiple	0.191***	-0.027***	-0.032*
	(0.008)	(0.008)	(0.019)
Call for Service		0.106***	0.098***
		(0.001)	(0.010)
Reason for Stop: Reasonable Suspicion		0.311***	0.264***
		(0.001)	(0.022)
RfS: Parole/Probation		0.678***	0.616***
		(0.003)	(0.012)
RfS: Outstanding Warrant		0.527***	0.469***
		(0.003)	(0.023)
RfS: Consensual Encounter/Search		0.803***	0.728***
		(0.002)	(0.045)
RfS: School/Education Violation		0.183***	0.139***
		(0.004)	(0.026)
Los Angeles County Sheriff			0.092***
			(0.021)
Los Angeles PD			0.141***
			(0.010)
Riverside County Sheriff			0.033***
			(0.007)
San Bernardino County Sheriff			0.129***
			(0.015)
San Diego County Sheriff			0.049***
			(0.011)
San Diego PD			0.025**
			(0.011)
San Francisco PD			0.030*
			(0.018)
Fresno PD			0.008**
			(0.004)
Long Beach PD			0.074***
			(0.008)
Oakland PD			0.251***
			(0.018)
Orange County Sheriff			0.098***

				(0.015)
Sacramento County Sheriff				0.082***
				(0.012)
Sacramento PD				0.133***
				(0.009)
San Jose PD				0.130***
				(0.009)
Constant	0.082***	0.245***	0.004	-0.040*
	(0.000)	(0.005)	(0.005)	(0.022)
Observations	3,992,074	3,992,072	3,992,072	3,992,070
R-squared	0.023	0.054	0.278	0.233
Number of City				842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B2

Yield rates, relative to those of omitted categories

Model:	(1)	(2)	(3)	(4)	(5)
Included variables	Yield: Any	Yield: Any	Yield: Any	Yield: Any	Yield: Any
Black	-0.006***	-0.008***	-0.011***	-0.023***	-0.022***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Latino	-0.014***	-0.018***	-0.018***	-0.019***	-0.014***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)
Asian	0.010**	0.013***	0.013***	0.001	-0.011
	(0.004)	(0.004)	(0.004)	(0.004)	(0.007)
Middle Eastern/South Asian	-0.028***	-0.028***	-0.031***	-0.040***	-0.036***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Native American	-0.021	-0.023*	-0.020	-0.018	-0.010
	(0.013)	(0.013)	(0.014)	(0.013)	(0.014)
Pacific Islander	0.003	0.004	0.002	0.002	-0.010
	(0.009)	(0.009)	(0.009)	(0.009)	(0.011)
Multi Race/Ethnicity	0.017***	0.016***	0.018***	0.009	-0.006
	(0.006)	(0.006)	(0.006)	(0.006)	(0.009)
Female		-0.005***	-0.007***	-0.016***	-0.017***
		(0.002)	(0.002)	(0.002)	(0.003)
Transgender Man		-0.028**	-0.041***	-0.032**	-0.008
		(0.013)	(0.013)	(0.013)	(0.013)
Transgender Woman		0.022	0.007	0.010	0.014
		(0.018)	(0.018)	(0.017)	(0.012)
Gender Nonconforming		0.002	0.002	0.018	-0.028
		(0.018)	(0.018)	(0.017)	(0.029)
LGBT		-0.003	-0.005	-0.005	-0.015*
		(0.006)	(0.006)	(0.006)	(0.009)
Ages 15-17		0.042***	0.042***	0.038***	0.035***
		(0.008)	(0.008)	(0.008)	(0.008)
Ages 18-24		0.029***	0.039***	0.032***	0.033***
		(0.008)	(0.008)	(0.007)	(0.008)
Ages 25-34		0.015**	0.026***	0.038***	0.036***
		(0.007)	(0.007)	(0.007)	(0.007)
Ages 35-44		0.022***	0.032***	0.051***	0.045***
		(0.007)	(0.007)	(0.007)	(0.009)
Ages 45-54		0.027***	0.034***	0.056***	0.048***
		(0.008)	(0.008)	(0.007)	(0.010)
Ages 55-64		0.030***	0.034***	0.052***	0.048***
		(0.008)	(0.008)	(0.007)	(0.012)
Ages 65+		-0.002	0.005	0.018**	0.020
		(0.009)	(0.009)	(0.009)	(0.015)
Limited English Proficiency		0.001	-0.004	-0.005**	-0.005
		(0.003)	(0.003)	(0.003)	(0.006)
Disability: Deafness		0.001	-0.002	0.010	0.008

	(0.017)	(0.017)	(0.017)	(0.021)
Disability: Speech	0.025	0.019	0.018	-0.021
	(0.018)	(0.017)	(0.017)	(0.020)
Disability: Blindness	0.015	0.013	0.012	-0.007
	(0.024)	(0.024)	(0.024)	(0.019)
Disability: Mental Health	-0.095***	-0.103***	-0.067***	-0.072***
	(0.003)	(0.003)	(0.003)	(0.010)
Disability: Development	-0.103***	-0.109***	-0.083***	-0.093***
	(0.014)	(0.014)	(0.014)	(0.012)
Disability: Hyperactivity	0.579***	0.587***	0.299	0.288*
	(0.175)	(0.160)	(0.202)	(0.174)
Disability: Other	0.029***	0.026**	0.024**	0.018**
	(0.010)	(0.010)	(0.010)	(0.008)
Disability: Multiple	-0.077***	-0.078***	-0.048***	-0.052***
	(0.011)	(0.011)	(0.011)	(0.013)
Call for Service		-0.064***	-0.045***	-0.065***
		(0.002)	(0.002)	(0.011)
Reason for Stop: Reasonable Suspicion		0.101***	0.101***	0.075***
		(0.002)	(0.001)	(0.006)
RfS: Parole/Probation		0.014***	0.049***	0.037***
		(0.003)	(0.003)	(0.005)
RfS: Outstanding Warrant		0.039***	0.029***	-0.015
		(0.003)	(0.003)	(0.010)
RfS: Consensual Encounter/Search		-0.028***	0.023***	0.013***
		(0.002)	(0.002)	(0.005)
RfS: School/Education Violation		0.023***	0.033***	0.019**
		(0.006)	(0.005)	(0.008)
Basis for Search: Officer Safety			-0.032***	-0.022***
			(0.002)	(0.006)
BfS: Search Warrant			0.403***	0.413***
			(0.008)	(0.028)
BfS: Parole/Probation			0.042***	0.035**
			(0.002)	(0.017)
BfS: Suspect Weapon			0.058***	0.074***
			(0.003)	(0.016)
BfS: Visible Contraband			0.621***	0.617***
			(0.005)	(0.019)
BfS: Odor of Contraband			0.424***	0.423***
			(0.004)	(0.015)
BfS: Canine Detect			0.468***	0.499***
			(0.022)	(0.032)
BfS: Evidence			0.382***	0.382***
			(0.005)	(0.051)
BfS: Incident			0.090***	0.124***
			(0.002)	(0.012)
BfS: Exigent Circumstances			0.175***	0.194***
			(0.011)	(0.023)

BfS: Vehicle Inventory				0.211***	0.215***
				(0.004)	(0.015)
BfS: School Policy				0.538***	0.541***
				(0.029)	(0.060)
Los Angeles County Sheriff					0.170***
					(0.018)
Los Angeles PD					0.131***
					(0.013)
Riverside County Sheriff					0.040
					(0.037)
San Bernardino County Sheriff					0.171***
					(0.027)
San Diego County Sheriff					0.185***
					(0.015)
San Diego PD					0.211***
					(0.010)
San Francisco PD					0.186***
					(0.046)
Fresno PD					0.179***
					(0.015)
Long Beach PD					0.147***
					(0.033)
Oakland PD					0.094***
					(0.032)
Orange County Sheriff					0.254***
					(0.035)
Sacramento County Sheriff					0.042*
					(0.023)
Sacramento PD					0.149***
					(0.023)
San Jose PD					0.315***
					(0.011)
Constant	0.222***	0.206***	0.168***	0.065***	-0.071***
	(0.001)	(0.008)	(0.008)	(0.007)	(0.011)
Observations	452,164	452,164	452,164	451,740	451,739
R-squared	0.000	0.003	0.016	0.115	0.118
Number of City					736

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); consent given (basis for search) and CHP (law enforcement agency).

TABLE B3

Weapon yield rates, relative to those of omitted categories

Model:	(6)	(7)	(8)	(9)	(10)
Included variables	Yield: Weapon	Yield: Weapon	Yield: Weapon	Yield: Weapon	Yield: Weapon
Black	0.008***	0.007***	0.007***	0.005***	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Latino	0.005***	0.004***	0.006***	0.004***	0.004**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Asian	0.012***	0.011***	0.011***	0.007***	0.005
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Middle Eastern/South Asian	0.008***	0.006**	0.005*	0.001	0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Native American	0.015**	0.016**	0.016**	0.015**	0.014*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Pacific Islander	0.018***	0.018***	0.017***	0.015***	0.013**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)
Multi Race/Ethnicity	0.011***	0.011***	0.012***	0.011***	0.009***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Female		-0.013***	-0.015***	-0.017***	-0.017***
		(0.001)	(0.001)	(0.001)	(0.002)
Transgender Man		0.007	0.005	0.005	0.005
		(0.007)	(0.007)	(0.007)	(0.004)
Transgender Woman		0.006	0.002	0.001	-0.002
		(0.009)	(0.009)	(0.009)	(0.009)
Gender Nonconforming		-0.006	-0.007	-0.005	-0.010
		(0.008)	(0.008)	(0.008)	(0.009)
LGBT		-0.005*	-0.008***	-0.006**	-0.005**
		(0.003)	(0.003)	(0.003)	(0.002)
Ages 15-17		0.002	0.004	0.006	0.005
		(0.005)	(0.005)	(0.005)	(0.005)
Ages 18-24		-0.011**	-0.004	0.001	0.001
		(0.004)	(0.004)	(0.004)	(0.005)
Ages 25-34		-0.016***	-0.010**	-0.003	-0.002
		(0.004)	(0.004)	(0.004)	(0.005)
Ages 35-44		-0.014***	-0.009**	-0.001	-0.001
		(0.004)	(0.004)	(0.004)	(0.006)

Ages 45-54	-0.015***	-0.011**	-0.003	-0.002
	(0.004)	(0.004)	(0.004)	(0.006)
Ages 55-64	-0.013***	-0.010**	-0.003	-0.001
	(0.005)	(0.005)	(0.004)	(0.006)
Ages 65+	-0.006	-0.003	0.002	0.004
	(0.005)	(0.005)	(0.005)	(0.007)
Limited English Proficiency	-0.001	-0.003**	-0.005***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.002)
Disability: Deafness	0.006	0.004	0.006	0.005
	(0.009)	(0.009)	(0.009)	(0.009)
Disability: Speech	0.004	-0.001	-0.002	-0.010
	(0.009)	(0.009)	(0.009)	(0.008)
Disability: Blindness	0.008	0.004	0.002	-0.001
	(0.012)	(0.012)	(0.012)	(0.010)
Disability: Mental Health	0.012***	0.000	0.004**	0.002
	(0.002)	(0.002)	(0.002)	(0.003)
Disability: Development	-0.019***	-0.025***	-0.023***	-0.023***
	(0.007)	(0.007)	(0.007)	(0.007)
Disability: Hyperactivity	0.150	0.151	0.103	0.110
	(0.177)	(0.174)	(0.158)	(0.097)
Disability: Other	0.017***	0.013**	0.011**	0.009**
	(0.005)	(0.005)	(0.005)	(0.005)
Disability: Multiple	0.003	-0.005	-0.002	-0.003
	(0.006)	(0.006)	(0.006)	(0.005)
Call for Service		0.011***	0.013***	0.008***
		(0.001)	(0.001)	(0.002)
Reason for Stop: Reasonable Suspicion		0.020***	0.013***	0.007***
		(0.001)	(0.001)	(0.001)
RfS: Parole/Probation		0.004***	0.012***	0.010***
		(0.001)	(0.001)	(0.003)
RfS: Outstanding Warrant		0.016***	0.006***	-0.003
		(0.002)	(0.002)	(0.003)
RfS: Consensual Encounter/Search		-0.008***	0.001	0.000
		(0.001)	(0.001)	(0.002)
RfS: School/Education Violation		0.010***	0.005	0.003
		(0.003)	(0.003)	(0.003)
Basis for Search: Officer Safety			0.006***	0.006***
			(0.001)	(0.002)
BfS: Search Warrant			0.163***	0.161***
			(0.006)	(0.015)
BfS: Parole/Probation			0.007***	0.005***
			(0.001)	(0.002)
BfS: Suspect Weapon			0.088***	0.088***
			(0.002)	(0.015)

BfS: Visible Contraband				0.061***	0.060***
				(0.003)	(0.004)
BfS: Odor of Contraband				0.020***	0.018***
				(0.002)	(0.002)
BfS: Canine Detect				0.029***	0.041**
				(0.009)	(0.018)
BfS: Evidence				0.054***	0.056***
				(0.003)	(0.005)
BfS: Incident				0.023***	0.030***
				(0.001)	(0.004)
BfS: Exigent Circumstances				0.154***	0.156***
				(0.009)	(0.010)
BfS: Vehicle Inventory				0.063***	0.063***
				(0.002)	(0.006)
BfS: School Policy				0.096***	0.101***
				(0.020)	(0.024)
Los Angeles County Sheriff					0.019***
					(0.006)
Los Angeles PD					0.033***
					(0.004)
Riverside County Sheriff					-0.014
					(0.013)
San Bernardino County Sheriff					0.041***
					(0.011)
San Diego County Sheriff					0.022***
					(0.006)
San Diego PD					0.043***
					(0.009)
San Francisco PD					0.061***
					(0.021)
Fresno PD					0.036***
					(0.003)
Long Beach PD					0.037
					(0.033)
Oakland PD					0.026*
					(0.013)
Orange County Sheriff					0.033***
					(0.008)
Sacramento County Sheriff					0.027***
					(0.005)
Sacramento PD					0.041***
					(0.005)
San Jose PD					0.040***
					(0.003)
Constant	0.036***	0.052***	0.036***	0.010**	-0.019**
	(0.001)	(0.004)	(0.004)	(0.004)	(0.008)

Observations	452,164	452,164	452,164	451,740	451,739
R-squared	0.000	0.001	0.005	0.024	0.022
Number of City					736

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); consent given (basis for search) and CHP (law enforcement agency).

TABLE B4

Property yield rates, relative to those of omitted categories

Model:	(11)	(12)	(13)	(14)	(15)
Included variables	Yield: Property	Yield: Property	Yield: Property	Yield: Property	Yield: Property
Black	-0.000	0.000	0.000	0.003***	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Latino	-0.005***	-0.006***	-0.004***	-0.003***	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Asian	0.012***	0.012***	0.012***	0.008***	0.005*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Middle Eastern/South Asian	0.004	0.004	0.003	0.000	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Native American	-0.014***	-0.015***	-0.014***	-0.015***	-0.012**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)
Pacific Islander	0.003	0.003	0.002	0.001	-0.002
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Multi Race/Ethnicity	0.003	0.003	0.004	0.004*	0.001
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
Female		0.009***	0.008***	0.002**	0.002
		(0.001)	(0.001)	(0.001)	(0.002)
Transgender Man		-0.007	-0.010**	-0.008*	-0.005
		(0.005)	(0.005)	(0.005)	(0.004)
Transgender Woman		0.012	0.008	0.006	0.003
		(0.008)	(0.008)	(0.008)	(0.006)
Gender Nonconforming		0.006	0.005	0.007	-0.005
		(0.008)	(0.007)	(0.007)	(0.013)
LGBT		-0.001	-0.003	-0.005**	-0.006
		(0.002)	(0.002)	(0.002)	(0.004)
Ages 15-17		0.006*	0.007**	0.011***	0.010**
		(0.003)	(0.003)	(0.003)	(0.005)
Ages 18-24		-0.001	0.005	0.007**	0.006
		(0.003)	(0.003)	(0.003)	(0.006)
Ages 25-34		-0.002	0.004	0.006*	0.004
		(0.003)	(0.003)	(0.003)	(0.007)
Ages 35-44		-0.002	0.003	0.004	0.003
		(0.003)	(0.003)	(0.003)	(0.007)
Ages 45-54		-0.001	0.003	0.003	0.001
		(0.003)	(0.003)	(0.003)	(0.009)
Ages 55-64		-0.002	0.001	-0.001	-0.001
		(0.003)	(0.003)	(0.003)	(0.010)
Ages 65+		-0.005	-0.002	-0.006	-0.006
		(0.004)	(0.004)	(0.004)	(0.011)
Limited English Proficiency		0.013***	0.011***	0.008***	0.006
		(0.001)	(0.001)	(0.001)	(0.007)
Disability: Deafness		-0.005	-0.006	-0.004	-0.004

	(0.006)	(0.006)	(0.006)	(0.004)
Disability: Speech	-0.002	-0.006	-0.007	-0.011
	(0.007)	(0.007)	(0.007)	(0.009)
Disability: Blindness	-0.013**	-0.016**	-0.017**	-0.019***
	(0.007)	(0.007)	(0.007)	(0.006)
Disability: Mental Health	-0.017***	-0.025***	-0.018***	-0.018***
	(0.001)	(0.001)	(0.001)	(0.001)
Disability: Development	-0.010*	-0.015***	-0.013**	-0.013*
	(0.006)	(0.006)	(0.006)	(0.007)
Disability: Hyperactivity	-0.036***	-0.035***	-0.057***	-0.057***
	(0.003)	(0.007)	(0.019)	(0.013)
Disability: Other	0.004	0.001	-0.001	-0.002
	(0.004)	(0.004)	(0.004)	(0.005)
Disability: Multiple	-0.016***	-0.021***	-0.015***	-0.014***
	(0.003)	(0.003)	(0.003)	(0.004)
Call for Service		-0.004***	-0.003***	-0.008*
		(0.001)	(0.001)	(0.005)
Reason for Stop: Reasonable Suspicion		0.031***	0.028***	0.023***
		(0.001)	(0.001)	(0.004)
RfS: Parole/Probation		0.006***	0.011***	0.010***
		(0.001)	(0.001)	(0.003)
RfS: Outstanding Warrant		0.025***	0.009***	0.001
		(0.001)	(0.001)	(0.004)
RfS: Consensual Encounter/Search		-0.003***	0.004***	0.002
		(0.001)	(0.001)	(0.002)
RfS: School/Education Violation		0.006***	0.004*	-0.001
		(0.002)	(0.002)	(0.004)
Basis for Search: Officer Safety			-0.010***	-0.009***
			(0.000)	(0.002)
BfS: Search Warrant			0.187***	0.187***
			(0.006)	(0.045)
BfS: Parole/Probation			0.003***	0.002
			(0.001)	(0.002)
BfS: Suspect Weapon			-0.012***	-0.008***
			(0.001)	(0.001)
BfS: Visible Contraband			0.011***	0.011**
			(0.002)	(0.005)
BfS: Odor of Contraband			0.001	0.001
			(0.001)	(0.004)
BfS: Canine Detect			0.096***	0.100***
			(0.013)	(0.014)
BfS: Evidence			0.066***	0.067***

				(0.003)	(0.012)
BfS: Incident				0.022***	0.028***
				(0.001)	(0.003)
BfS: Exigent Circumstances				0.033***	0.035***
				(0.005)	(0.009)
BfS: Vehicle Inventory				0.064***	0.064***
				(0.002)	(0.006)
BfS: School Policy				0.008	0.014
				(0.010)	(0.011)
Los Angeles County Sheriff					0.010***
					(0.004)
Los Angeles PD					0.012***
					(0.004)
Riverside County Sheriff					0.029
					(0.019)
San Bernardino County Sheriff					0.054***
					(0.013)
San Diego County Sheriff					0.017**
					(0.008)
San Diego PD					0.017***
					(0.004)
San Francisco PD					0.086***
					(0.023)
Fresno PD					0.025***
					(0.004)
Long Beach PD					0.020*
					(0.011)
Oakland PD					-0.007
					(0.007)
Orange County Sheriff					0.029***
					(0.006)
Sacramento County Sheriff					0.030***
					(0.004)
Sacramento PD					0.039***
					(0.004)
San Jose PD					0.055***
					(0.004)
Constant	0.027***	0.027***	0.008***	-0.004	-0.024***
	(0.000)	(0.003)	(0.003)	(0.003)	(0.008)
Observations	452,164	452,164	452,164	451,740	451,739
R-squared	0.000	0.002	0.010	0.034	0.034
Number of City					736

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); consent given (basis for search) and CHP (law enforcement agency).

TABLE B5

Drug yield rates, relative to those of omitted categories

Model:	(16)	(17)	(18)	(19)	(20)
Included variables	Yield: Drug	Yield: Drug	Yield: Drug	Yield: Drug	Yield: Drug
Black	-0.022***	-0.022***	-0.025***	-0.037***	-0.027***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)
Latino	-0.029***	-0.028***	-0.033***	-0.032***	-0.026***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
Asian	-0.007*	-0.002	-0.001	-0.009***	-0.015**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.007)
Middle Eastern/South Asian	-0.036***	-0.034***	-0.033***	-0.039***	-0.034***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)
Native American	-0.017	-0.018	-0.018	-0.014	-0.009
	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
Pacific Islander	-0.019**	-0.017**	-0.017**	-0.016**	-0.021**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Multi Race/Ethnicity	-0.006	-0.005	-0.006	-0.014***	-0.020**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)
Female		0.001	0.004***	-0.002	-0.004*
		(0.001)	(0.001)	(0.001)	(0.002)
Transgender Man		-0.023**	-0.030***	-0.022**	0.002
		(0.011)	(0.011)	(0.010)	(0.009)
Transgender Woman		0.018	0.014	0.018	0.032***
		(0.015)	(0.015)	(0.015)	(0.012)
Gender Nonconforming		0.005	0.009	0.021	-0.013
		(0.015)	(0.015)	(0.015)	(0.029)
LGBT		-0.002	0.002	0.003	-0.010
		(0.005)	(0.005)	(0.005)	(0.006)
Ages 15-17		0.032***	0.027***	0.023***	0.022***
		(0.005)	(0.005)	(0.005)	(0.007)
Ages 18-24		0.064***	0.057***	0.047***	0.049***
		(0.005)	(0.005)	(0.004)	(0.004)
Ages 25-34		0.064***	0.058***	0.065***	0.063***
		(0.005)	(0.005)	(0.004)	(0.005)
Ages 35-44		0.070***	0.066***	0.079***	0.073***
		(0.005)	(0.005)	(0.004)	(0.007)
Ages 45-54		0.073***	0.068***	0.083***	0.076***
		(0.005)	(0.005)	(0.005)	(0.007)
Ages 55-64		0.069***	0.063***	0.076***	0.071***
		(0.005)	(0.005)	(0.005)	(0.007)
Ages 65+		0.028***	0.025***	0.035***	0.034***
		(0.006)	(0.006)	(0.006)	(0.007)

Limited English Proficiency	-0.022***	-0.021***	-0.020***	-0.015*
	(0.002)	(0.002)	(0.002)	(0.008)
Disability: Deafness	-0.010	-0.008	-0.000	-0.001
	(0.014)	(0.014)	(0.014)	(0.018)
Disability: Speech	-0.003	0.003	0.004	-0.022*
	(0.014)	(0.014)	(0.013)	(0.013)
Disability: Blindness	-0.003	0.005	0.005	-0.010
	(0.020)	(0.020)	(0.019)	(0.016)
Disability: Mental Health	-0.094***	-0.076***	-0.048***	-0.051***
	(0.002)	(0.002)	(0.002)	(0.008)
Disability: Development	-0.087***	-0.077***	-0.057***	-0.069***
	(0.010)	(0.010)	(0.010)	(0.009)
Disability: Hyperactivity	0.103	0.111	-0.096	-0.110
	(0.173)	(0.164)	(0.184)	(0.168)
Disability: Other	-0.004	0.001	0.002	-0.001
	(0.008)	(0.008)	(0.008)	(0.009)
Disability: Multiple	-0.074***	-0.057***	-0.033***	-0.038***
	(0.007)	(0.007)	(0.007)	(0.008)
Call for Service		-0.069***	-0.052***	-0.062***
		(0.001)	(0.001)	(0.008)
Reason for Stop: Reasonable Suspicion		0.032***	0.037***	0.020***
		(0.001)	(0.001)	(0.004)
RfS: Parole/Probation		0.017***	0.036***	0.028***
		(0.003)	(0.003)	(0.005)
RfS: Outstanding Warrant		0.002	-0.001	-0.028***
		(0.003)	(0.003)	(0.008)
RfS: Consensual Encounter/Search		-0.014***	0.023***	0.013***
		(0.002)	(0.002)	(0.004)
RfS: School/Education Violation		-0.012***	-0.001	-0.015**
		(0.004)	(0.004)	(0.008)
Basis for Search: Officer Safety			-0.024***	-0.014***
			(0.001)	(0.004)
BfS: Search Warrant			0.308***	0.319***
			(0.008)	(0.050)
BfS: Parole/Probation			0.041***	0.036**
			(0.002)	(0.015)
BfS: Suspect Weapon			-0.010***	0.007*
			(0.002)	(0.004)
BfS: Visible Contraband			0.451***	0.451***
			(0.005)	(0.030)
BfS: Odor of Contraband			0.409***	0.414***
			(0.004)	(0.019)

BfS: Canine Detect				0.383***	0.395***
				(0.022)	(0.031)
BfS: Evidence				0.248***	0.248***
				(0.005)	(0.044)
BfS: Incident				0.061***	0.082***
				(0.002)	(0.009)
BfS: Exigent Circumstances				0.046***	0.060***
				(0.007)	(0.009)
BfS: Vehicle Inventory				0.119***	0.122***
				(0.003)	(0.012)
BfS: School Policy				0.398***	0.392***
				(0.030)	(0.075)
Los Angeles County Sheriff					0.126***
					(0.016)
Los Angeles PD					0.072***
					(0.012)
Riverside County Sheriff					0.012
					(0.026)
San Bernardino County Sheriff					0.125***
					(0.021)
San Diego County Sheriff					0.153***
					(0.012)
San Diego PD					0.157***
					(0.011)
San Francisco PD					0.023
					(0.019)
Fresno PD					0.102***
					(0.010)
Long Beach PD					0.076***
					(0.025)
Oakland PD					-0.011
					(0.013)
Orange County Sheriff					0.195***
					(0.031)
Sacramento County Sheriff					-0.020
					(0.017)
Sacramento PD					0.070***
					(0.017)
San Jose PD					0.236***
					(0.010)
Constant	0.153***	0.092***	0.100***	0.025***	-0.060***
	(0.001)	(0.005)	(0.005)	(0.005)	(0.010)
Observations	452,164	452,164	452,164	451,740	451,739
R-squared	0.001	0.005	0.011	0.104	0.107
Number of City					736

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); consent given (basis for search) and CHP (law enforcement agency).

TABLE B6

Other yield rates, relative to those of omitted categories

Model:	(21)	(22)	(23)	(24)	(25)
Included variables	Yield: Other	Yield: Other	Yield: Other	Yield: Other	Yield: Other
Black	0.012***	0.009***	0.008***	0.006***	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Latino	0.017***	0.012***	0.013***	0.013***	0.012**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)
Asian	0.013***	0.012***	0.011***	0.007***	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)
Middle Eastern/South Asian	0.003	0.001	-0.000	-0.004	-0.006**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Native American	-0.003	-0.004	-0.002	-0.001	0.003
	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)
Pacific Islander	0.018***	0.016***	0.015***	0.015***	0.007
	(0.005)	(0.005)	(0.005)	(0.005)	(0.007)
Multi Race/Ethnicity	0.021***	0.019***	0.020***	0.018***	0.010*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Female		-0.001	-0.003***	-0.007***	-0.006***
		(0.001)	(0.001)	(0.001)	(0.001)
Transgender Man		-0.015**	-0.021***	-0.019***	-0.019**
		(0.007)	(0.007)	(0.007)	(0.009)
Transgender Woman		-0.004	-0.012	-0.012	-0.019*
		(0.010)	(0.010)	(0.010)	(0.011)
Gender Nonconforming		0.002	0.001	0.004	-0.010
		(0.010)	(0.010)	(0.010)	(0.011)
LGBT		0.002	0.000	0.000	0.001
		(0.004)	(0.004)	(0.004)	(0.005)
Ages 15-17		0.013**	0.014**	0.015***	0.013
		(0.006)	(0.006)	(0.006)	(0.009)
Ages 18-24		-0.007	0.001	0.001	-0.000
		(0.005)	(0.005)	(0.005)	(0.005)
Ages 25-34		-0.019***	-0.012**	-0.008	-0.008*
		(0.005)	(0.005)	(0.005)	(0.005)
Ages 35-44		-0.022***	-0.016***	-0.010**	-0.010**
		(0.005)	(0.005)	(0.005)	(0.005)
Ages 45-54		-0.023***	-0.018***	-0.012**	-0.013***
		(0.005)	(0.005)	(0.005)	(0.005)
Ages 55-64		-0.017***	-0.014***	-0.009*	-0.008
		(0.005)	(0.005)	(0.005)	(0.005)
Ages 65+		-0.017***	-0.013**	-0.010*	-0.009
		(0.006)	(0.006)	(0.006)	(0.008)
Limited English Proficiency		0.018***	0.015***	0.013***	0.009***
		(0.002)	(0.002)	(0.002)	(0.003)
Disability: Deafness		-0.009	-0.011	-0.008	-0.009

	(0.009)	(0.009)	(0.009)	(0.014)
Disability: Speech	0.012	0.008	0.007	-0.004
	(0.011)	(0.011)	(0.011)	(0.011)
Disability: Blindness	0.004	0.001	0.001	-0.005
	(0.013)	(0.013)	(0.014)	(0.013)
Disability: Mental Health	-0.029***	-0.037***	-0.027***	-0.031***
	(0.001)	(0.001)	(0.001)	(0.004)
Disability: Development	-0.021**	-0.026***	-0.020**	-0.020**
	(0.009)	(0.009)	(0.008)	(0.008)
Disability: Hyperactivity	0.522**	0.523**	0.455**	0.447***
	(0.215)	(0.211)	(0.208)	(0.063)
Disability: Other	0.013**	0.010*	0.009	0.005
	(0.006)	(0.006)	(0.006)	(0.005)
Disability: Multiple	-0.015**	-0.019***	-0.011*	-0.012**
	(0.006)	(0.006)	(0.006)	(0.006)
Call for Service		-0.023***	-0.017***	-0.025***
		(0.001)	(0.001)	(0.007)
Reason for Stop: Reasonable Suspicion		0.050***	0.050***	0.044***
		(0.001)	(0.001)	(0.007)
RfS: Parole/Probation		0.002*	0.017***	0.016***
		(0.001)	(0.002)	(0.002)
RfS: Outstanding Warrant		0.036***	0.031***	0.020***
		(0.002)	(0.002)	(0.003)
RfS: Consensual Encounter/Search		-0.012***	0.000	0.006***
		(0.001)	(0.001)	(0.002)
RfS: School/Education Violation		0.024***	0.026***	0.031***
		(0.003)	(0.003)	(0.007)
Basis for Search: Officer Safety			-0.009***	-0.010***
			(0.001)	(0.003)
BfS: Search Warrant			0.170***	0.170***
			(0.007)	(0.015)
BfS: Parole/Probation			0.002**	-0.002
			(0.001)	(0.004)
BfS: Suspect Weapon			-0.002	-0.004
			(0.002)	(0.004)
BfS: Visible Contraband			0.181***	0.176***
			(0.004)	(0.018)
BfS: Odor of Contraband			0.091***	0.085***
			(0.003)	(0.013)
BfS: Canine Detect			0.052***	0.063***
			(0.012)	(0.014)
BfS: Evidence			0.098***	0.096***
			(0.003)	(0.009)
BfS: Incident			0.019***	0.026***
			(0.001)	(0.006)
BfS: Exigent Circumstances			0.041***	0.044**
			(0.007)	(0.017)

BfS: Vehicle Inventory				0.093***	0.092***
				(0.003)	(0.010)
BfS: School Policy				0.122***	0.128*
				(0.024)	(0.067)
Los Angeles County Sheriff					0.032***
					(0.006)
Los Angeles PD					0.045***
					(0.007)
Riverside County Sheriff					0.021*
					(0.013)
San Bernardino County Sheriff					0.009
					(0.007)
San Diego County Sheriff					0.021***
					(0.006)
San Diego PD					0.038***
					(0.005)
San Francisco PD					0.175***
					(0.067)
Fresno PD					0.043***
					(0.005)
Long Beach PD					0.042***
					(0.014)
Oakland PD					0.026
					(0.025)
Orange County Sheriff					0.032***
					(0.009)
Sacramento County Sheriff					0.041***
					(0.005)
Sacramento PD					0.057***
					(0.005)
San Jose PD					0.076***
					(0.005)
Constant	0.046***	0.066***	0.043***	0.017***	-0.017**
	(0.001)	(0.005)	(0.005)	(0.005)	(0.007)
Observations	452,164	452,164	452,164	451,740	451,739
R-squared	0.001	0.003	0.013	0.040	0.039
Number of City					736

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); consent given (basis for search) and CHP (law enforcement agency).

TABLE B7

Rates of enforcement level: warning, relative to those of omitted categories

Model:	(6)	(7)	(8)	(9)	(10)
Included variables	Warning	Warning	Warning	Warning	Warning
Black	-0.105***	-0.094***	-0.063***	-0.066***	-0.037***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.014)
Latino	-0.012***	-0.006***	-0.012***	-0.013***	-0.011**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.005)
Asian	0.042***	0.041***	0.014***	0.015***	0.013***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.003)
Middle Eastern/South Asian	0.048***	0.051***	0.015***	0.016***	0.007*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)
Native American	-0.005	0.027***	0.020***	0.019***	0.018
	(0.003)	(0.004)	(0.003)	(0.003)	(0.012)
Pacific Islander	-0.010***	-0.004*	-0.005***	-0.006***	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Multi Race/Ethnicity	-0.033***	-0.023***	-0.019***	-0.021***	-0.010
	(0.002)	(0.002)	(0.002)	(0.002)	(0.008)
Female		0.033***	0.016***	0.018***	0.017***
		(0.000)	(0.000)	(0.000)	(0.006)
Transgender Man		-0.115***	-0.080***	-0.079***	-0.072***
		(0.009)	(0.009)	(0.009)	(0.026)
Transgender Woman		-0.057***	0.018	0.018*	0.014
		(0.011)	(0.011)	(0.011)	(0.038)
Gender Nonconforming		0.001	-0.008	-0.013	0.027
		(0.011)	(0.010)	(0.010)	(0.064)
LGBT		-0.072***	-0.015***	-0.014***	0.011
		(0.003)	(0.002)	(0.002)	(0.013)
Ages 15-17		0.129***	0.047***	0.042***	0.032**
		(0.006)	(0.005)	(0.005)	(0.013)
Ages 18-24		0.261***	0.086***	0.082***	0.067***
		(0.005)	(0.005)	(0.005)	(0.017)
Ages 25-34		0.260***	0.091***	0.088***	0.077***
		(0.005)	(0.005)	(0.005)	(0.020)
Ages 35-44		0.275***	0.106***	0.103***	0.088***
		(0.005)	(0.005)	(0.005)	(0.023)
Ages 45-54		0.284***	0.112***	0.110***	0.093***
		(0.005)	(0.005)	(0.005)	(0.024)
Ages 55-64		0.300***	0.121***	0.120***	0.099***
		(0.005)	(0.005)	(0.005)	(0.026)
Ages 65+		0.314***	0.121***	0.120***	0.097***
		(0.005)	(0.005)	(0.005)	(0.026)
Limited English Proficiency		-0.001	0.009***	0.008***	0.014*

	(0.001)	(0.001)	(0.001)	(0.008)
Disability: Deafness	-0.141***	-0.063***	-0.062***	-0.019***
	(0.009)	(0.008)	(0.008)	(0.007)
Disability: Speech	-0.148***	-0.047***	-0.048***	-0.004
	(0.009)	(0.009)	(0.009)	(0.017)
Disability: Blindness	-0.232***	-0.074***	-0.077***	-0.032
	(0.017)	(0.016)	(0.016)	(0.021)
Disability: Mental Health	-0.536***	-0.270***	-0.258***	-0.249***
	(0.003)	(0.003)	(0.003)	(0.024)
Disability: Development	-0.367***	-0.171***	-0.160***	-0.132***
	(0.013)	(0.012)	(0.012)	(0.019)
Disability: Hyperactivity	0.220***	0.460***	0.446***	0.371***
	(0.054)	(0.060)	(0.061)	(0.051)
Disability: Other	-0.202***	-0.061***	-0.064***	-0.039***
	(0.006)	(0.006)	(0.005)	(0.012)
Disability: Multiple	-0.377***	-0.197***	-0.188***	-0.167***
	(0.009)	(0.008)	(0.008)	(0.043)
Call for Service		-0.012***	-0.006***	-0.007
		(0.001)	(0.001)	(0.016)
Reason for Stop: Reasonable Suspicion		-0.312***	-0.340***	-0.227***
		(0.001)	(0.001)	(0.024)
RfS: Parole/Probation		-0.588***	-0.615***	-0.500***
		(0.003)	(0.003)	(0.032)
RfS: Outstanding Warrant		-0.101***	-0.128***	-0.043**
		(0.002)	(0.002)	(0.017)
RfS: Consensual Encounter/Search		-0.579***	-0.600***	-0.471***
		(0.002)	(0.002)	(0.015)
RfS: School/Education Violation		-0.504***	-0.516***	-0.362***
		(0.004)	(0.004)	(0.020)
Unconditional Hit Rate: Weapon			0.088***	0.103***
			(0.003)	(0.009)
Unconditional Hit Rate: Property			0.170***	0.165***
			(0.003)	(0.012)
Unconditional Hit Rate: Drug			0.148***	0.173***
			(0.002)	(0.043)
Unconditional Hit Rate: Other			0.168***	0.174***
			(0.002)	(0.023)
Los Angeles County Sheriff				-0.040***
				(0.009)
Los Angeles PD				-0.159***
				(0.006)
Riverside County Sheriff				-0.005
				(0.021)
San Bernardino County Sheriff				-0.290***
				(0.036)

San Diego County Sheriff					-0.196***
					(0.024)
San Diego PD					-0.256***
					(0.008)
San Francisco PD					-0.108***
					(0.025)
Fresno PD					-0.042***
					(0.005)
Long Beach PD					-0.176***
					(0.007)
Oakland PD					-0.119***
					(0.017)
Orange County Sheriff					-0.154***
					(0.015)
Sacramento County Sheriff					-0.197***
					(0.019)
Sacramento PD					-0.302***
					(0.013)
San Jose PD					-0.176***
					(0.009)
Constant	0.898***	0.618***	0.843***	0.844***	0.911***
	(0.000)	(0.005)	(0.005)	(0.005)	(0.020)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.016	0.048	0.195	0.205	0.164
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B8

Rates of enforcement level: citation, relative to those of omitted categories

Model:	(11)	(12)	(13)	(14)	(15)
Included variables	Citation	Citation	Citation	Citation	Citation
Black	-0.111***	-0.105***	-0.085***	-0.089***	-0.063***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.021)
Latino	0.022***	0.026***	0.022***	0.020***	0.005
	(0.001)	(0.001)	(0.001)	(0.001)	(0.009)
Asian	0.083***	0.082***	0.064***	0.064***	0.046***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)
Middle Eastern/South Asian	0.094***	0.100***	0.076***	0.077***	0.050***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)
Native American	-0.019***	-0.002	-0.008	-0.010*	0.026
	(0.005)	(0.006)	(0.005)	(0.005)	(0.019)
Pacific Islander	0.024***	0.027***	0.025***	0.024***	0.018**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.007)
Multi Race/Ethnicity	-0.010***	-0.005**	-0.003	-0.006**	0.009
	(0.003)	(0.003)	(0.002)	(0.002)	(0.012)
Female		0.051***	0.041***	0.043***	0.040***
		(0.001)	(0.001)	(0.001)	(0.009)
Transgender Man		-0.107***	-0.083***	-0.082***	-0.072**
		(0.009)	(0.010)	(0.010)	(0.034)
Transgender Woman		-0.068***	-0.017	-0.017	-0.015
		(0.012)	(0.012)	(0.012)	(0.038)
Gender Nonconforming		0.025**	0.019*	0.013	0.078
		(0.012)	(0.011)	(0.011)	(0.079)
LGBT		-0.042***	-0.005	-0.004	0.025
		(0.003)	(0.003)	(0.003)	(0.022)
Ages 15-17		0.151***	0.096***	0.089***	0.077***
		(0.005)	(0.005)	(0.005)	(0.013)
Ages 18-24		0.306***	0.187***	0.182***	0.157***
		(0.005)	(0.005)	(0.005)	(0.017)
Ages 25-34		0.273***	0.158***	0.153***	0.134***
		(0.005)	(0.005)	(0.005)	(0.019)
Ages 35-44		0.273***	0.157***	0.154***	0.129***
		(0.005)	(0.005)	(0.005)	(0.022)
Ages 45-54		0.277***	0.160***	0.157***	0.127***
		(0.005)	(0.005)	(0.005)	(0.024)
Ages 55-64		0.298***	0.177***	0.175***	0.138***
		(0.005)	(0.005)	(0.005)	(0.028)
Ages 65+		0.277***	0.147***	0.146***	0.109***
		(0.005)	(0.005)	(0.005)	(0.029)
Limited English Proficiency		-0.015***	-0.008***	-0.010***	0.001
		(0.001)	(0.001)	(0.001)	(0.010)
Disability: Deafness		-0.188***	-0.136***	-0.135***	-0.077***
		(0.010)	(0.010)	(0.010)	(0.011)

Disability: Speech	-0.170***	-0.100***	-0.102***	-0.047**
	(0.010)	(0.010)	(0.010)	(0.019)
Disability: Blindness	-0.178***	-0.074***	-0.078***	-0.022*
	(0.017)	(0.017)	(0.017)	(0.012)
Disability: Mental Health	-0.389***	-0.209***	-0.193***	-0.194***
	(0.003)	(0.003)	(0.002)	(0.019)
Disability: Development	-0.327***	-0.196***	-0.182***	-0.144***
	(0.012)	(0.011)	(0.011)	(0.017)
Disability: Hyperactivity	-0.057	0.126	0.109	-0.016
	(0.090)	(0.081)	(0.078)	(0.147)
Disability: Other	-0.190***	-0.097***	-0.101***	-0.070***
	(0.006)	(0.006)	(0.006)	(0.009)
Disability: Multiple	-0.239***	-0.117***	-0.104***	-0.103**
	(0.008)	(0.008)	(0.007)	(0.049)
Call for Service		-0.005***	0.001	0.025
		(0.001)	(0.001)	(0.022)
Reason for Stop: Reasonable Suspicion		-0.219***	-0.255***	-0.118***
		(0.001)	(0.001)	(0.019)
RfS: Parole/Probation		-0.367***	-0.405***	-0.243***
		(0.003)	(0.003)	(0.036)
RfS: Outstanding Warrant		0.145***	0.109***	0.234***
		(0.002)	(0.003)	(0.025)
RfS: Consensual Encounter/Search		-0.362***	-0.391***	-0.194***
		(0.002)	(0.002)	(0.017)
RfS: School/Education Violation		-0.380***	-0.396***	-0.181***
		(0.003)	(0.003)	(0.030)
Unconditional Hit Rate: Weapon			0.156***	0.178***
			(0.003)	(0.010)
Unconditional Hit Rate: Property			0.235***	0.237***
			(0.004)	(0.024)
Unconditional Hit Rate: Drug			0.210***	0.246***
			(0.002)	(0.064)
Unconditional Hit Rate: Other			0.185***	0.193***
			(0.002)	(0.033)
Los Angeles County Sheriff				-0.039
				(0.051)
Los Angeles PD				-0.146***
				(0.007)
Riverside County Sheriff				-0.021
				(0.039)
San Bernardino County Sheriff				-0.448***
				(0.038)
San Diego County Sheriff				-0.223***
				(0.062)
San Diego PD				-0.265***
				(0.013)
San Francisco PD				-0.108***

					(0.024)
Fresno PD					-0.020***
					(0.006)
Long Beach PD					-0.246***
					(0.008)
Oakland PD					-0.182***
					(0.020)
Orange County Sheriff					-0.184***
					(0.067)
Sacramento County Sheriff					-0.443***
					(0.015)
Sacramento PD					-0.344***
					(0.013)
San Jose PD					-0.302***
					(0.012)
Constant	0.640***	0.348***	0.499***	0.500***	0.593***
	(0.000)	(0.005)	(0.005)	(0.005)	(0.018)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.013	0.024	0.055	0.063	0.056
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B9

Rates of enforcement level: arrest, relative to those of omitted categories

Model:	(16)	(17)	(18)	(19)	(20)
Included variables	Arrest	Arrest	Arrest	Arrest	Arrest
Black	0.046***	0.042***	0.015***	0.009***	0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)
Latino	0.028***	0.024***	0.028***	0.026***	0.010***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Asian	-0.003***	-0.004***	0.016***	0.017***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)
Middle Eastern/South Asian	-0.043***	-0.046***	-0.019***	-0.016***	-0.011***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
Native American	0.050***	0.046***	0.050***	0.048***	0.057***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Pacific Islander	0.032***	0.029***	0.027***	0.026***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Multi Race/Ethnicity	0.029***	0.024***	0.020***	0.015***	-0.005
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Female		-0.011***	0.001**	0.005***	-0.003**
		(0.000)	(0.000)	(0.000)	(0.002)
Transgender Man		0.006	-0.023***	-0.021***	0.026**
		(0.008)	(0.007)	(0.007)	(0.012)
Transgender Woman		0.047***	-0.022**	-0.023**	0.010
		(0.011)	(0.010)	(0.009)	(0.021)
Gender Nonconforming		0.014*	0.022***	0.013*	-0.001
		(0.008)	(0.008)	(0.007)	(0.011)
LGBT		0.100***	0.052***	0.053***	0.029***
		(0.003)	(0.003)	(0.003)	(0.004)
Ages 15-17		-0.023***	0.042***	0.030***	0.047***
		(0.004)	(0.004)	(0.004)	(0.010)
Ages 18-24		-0.056***	0.077***	0.068***	0.083***
		(0.004)	(0.004)	(0.004)	(0.011)
Ages 25-34		-0.044***	0.084***	0.076***	0.092***
		(0.004)	(0.004)	(0.004)	(0.011)
Ages 35-44		-0.049***	0.079***	0.073***	0.088***
		(0.004)	(0.004)	(0.004)	(0.011)
Ages 45-54		-0.058***	0.072***	0.068***	0.083***
		(0.004)	(0.004)	(0.004)	(0.010)
Ages 55-64		-0.063***	0.072***	0.069***	0.082***
		(0.004)	(0.004)	(0.004)	(0.010)
Ages 65+		-0.079***	0.067***	0.065***	0.075***
		(0.004)	(0.004)	(0.004)	(0.010)
Limited English Proficiency		0.017***	0.006***	0.005***	0.031***
		(0.001)	(0.001)	(0.001)	(0.004)
Disability: Deafness		0.035***	-0.029***	-0.028***	-0.019
		(0.007)	(0.007)	(0.006)	(0.012)

Disability: Speech	0.144***	0.056***	0.054***	0.008
	(0.009)	(0.009)	(0.009)	(0.011)
Disability: Blindness	0.180***	0.045***	0.039***	0.055***
	(0.016)	(0.015)	(0.015)	(0.017)
Disability: Mental Health	0.080***	-0.155***	-0.133***	-0.113***
	(0.002)	(0.002)	(0.002)	(0.017)
Disability: Development	0.061***	-0.104***	-0.083***	-0.074***
	(0.010)	(0.010)	(0.010)	(0.010)
Disability: Hyperactivity	0.224**	0.136	0.113	-0.104
	(0.091)	(0.086)	(0.079)	(0.183)
Disability: Other	0.133***	0.008	0.002	0.007
	(0.005)	(0.005)	(0.005)	(0.013)
Disability: Multiple	0.014**	-0.141***	-0.122***	-0.109***
	(0.006)	(0.006)	(0.006)	(0.013)
Call for Service		0.105***	0.112***	0.102***
		(0.001)	(0.001)	(0.009)
Reason for Stop: Reasonable Suspicion		0.232***	0.180***	0.174***
		(0.001)	(0.001)	(0.025)
RfS: Parole/Probation		0.186***	0.122***	0.128***
		(0.003)	(0.002)	(0.013)
RfS: Outstanding Warrant		0.697***	0.642***	0.554***
		(0.002)	(0.003)	(0.034)
RfS: Consensual Encounter/Search		0.188***	0.138***	0.093***
		(0.002)	(0.002)	(0.013)
RfS: School/Education Violation		0.124***	0.098***	0.107***
		(0.003)	(0.003)	(0.017)
Unconditional Hit Rate: Weapon			0.292***	0.293***
			(0.003)	(0.016)
Unconditional Hit Rate: Property			0.300***	0.309***
			(0.004)	(0.024)
Unconditional Hit Rate: Drug			0.409***	0.376***
			(0.002)	(0.052)
Unconditional Hit Rate: Other			0.150***	0.139***
			(0.002)	(0.022)
Los Angeles County Sheriff				0.542***
				(0.057)
Los Angeles PD				0.003
				(0.012)
Riverside County Sheriff				0.008
				(0.013)
San Bernardino County Sheriff				-0.011
				(0.014)
San Diego County Sheriff				-0.006
				(0.007)
San Diego PD				0.017
				(0.012)
San Francisco PD				0.046***

					(0.017)
Fresno PD					0.001
					(0.004)
Long Beach PD					-0.001
					(0.009)
Oakland PD					0.026*
					(0.015)
Orange County Sheriff					0.020**
					(0.008)
Sacramento County Sheriff					-0.020
					(0.013)
Sacramento PD					-0.029***
					(0.008)
San Jose PD					0.042***
					(0.007)
Constant	0.097***	0.152***	-0.019***	-0.017***	-0.048***
	(0.000)	(0.004)	(0.004)	(0.004)	(0.012)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.005	0.008	0.114	0.162	0.214
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B10

Rates of enforcement level: booking, relative to those of omitted categories

Model:	(21)	(22)	(23)	(24)	(25)
Included variables	Booking	Booking	Booking	Booking	Booking
Black	0.039***	0.033***	0.009***	0.005***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Latino	0.015***	0.008***	0.012***	0.011***	0.010***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Asian	-0.026***	-0.028***	-0.010***	-0.009***	-0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Middle Eastern/South Asian	-0.034***	-0.039***	-0.015***	-0.013***	-0.011***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Native American	0.051***	0.047***	0.051***	0.049***	0.047***
	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)
Pacific Islander	0.019***	0.015***	0.012***	0.011***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Multi Race/Ethnicity	0.017***	0.011***	0.006***	0.003**	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Female		-0.023***	-0.013***	-0.009***	-0.011***
		(0.000)	(0.000)	(0.000)	(0.001)
Transgender Man		0.030***	0.007	0.008	0.010
		(0.007)	(0.007)	(0.007)	(0.011)
Transgender Woman		0.057***	-0.003	-0.004	-0.001
		(0.010)	(0.009)	(0.009)	(0.014)
Gender Nonconforming		0.010	0.018***	0.011*	0.022**
		(0.007)	(0.007)	(0.006)	(0.010)
LGBT		0.077***	0.034***	0.035***	0.037***
		(0.002)	(0.002)	(0.002)	(0.003)
Ages 15-17		-0.006*	0.054***	0.045***	0.045***
		(0.004)	(0.004)	(0.004)	(0.010)
Ages 18-24		-0.032***	0.090***	0.084***	0.083***
		(0.003)	(0.003)	(0.003)	(0.011)
Ages 25-34		-0.018***	0.099***	0.093***	0.094***
		(0.003)	(0.003)	(0.003)	(0.011)
Ages 35-44		-0.025***	0.092***	0.088***	0.088***
		(0.003)	(0.003)	(0.003)	(0.010)
Ages 45-54		-0.037***	0.081***	0.079***	0.080***
		(0.003)	(0.003)	(0.003)	(0.010)
Ages 55-64		-0.046***	0.077***	0.075***	0.076***
		(0.003)	(0.003)	(0.003)	(0.010)
Ages 65+		-0.064***	0.070***	0.069***	0.069***
		(0.003)	(0.003)	(0.003)	(0.010)
Limited English Proficiency		0.029***	0.019***	0.018***	0.021***
		(0.001)	(0.001)	(0.001)	(0.003)
Disability: Deafness		0.042***	-0.014***	-0.015***	-0.011
		(0.006)	(0.006)	(0.006)	(0.012)

Disability: Speech	0.076***	-0.003	-0.005	0.001
	(0.007)	(0.007)	(0.007)	(0.009)
Disability: Blindness	0.161***	0.040***	0.037***	0.042***
	(0.015)	(0.014)	(0.014)	(0.011)
Disability: Mental Health	0.108***	-0.109***	-0.094***	-0.090***
	(0.002)	(0.002)	(0.002)	(0.016)
Disability: Development	0.063***	-0.088***	-0.072***	-0.069***
	(0.009)	(0.009)	(0.009)	(0.008)
Disability: Hyperactivity	0.009	-0.081	-0.099**	-0.109***
	(0.058)	(0.056)	(0.046)	(0.028)
Disability: Other	0.112***	-0.001	-0.005	-0.001
	(0.005)	(0.005)	(0.005)	(0.011)
Disability: Multiple	0.032***	-0.112***	-0.098***	-0.094***
	(0.006)	(0.006)	(0.006)	(0.013)
Call for Service		0.133***	0.135***	0.137***
		(0.001)	(0.001)	(0.014)
Reason for Stop: Reasonable Suspicion		0.185***	0.147***	0.158***
		(0.001)	(0.001)	(0.007)
RfS: Parole/Probation		0.191***	0.142***	0.153***
		(0.003)	(0.002)	(0.019)
RfS: Outstanding Warrant		0.644***	0.600***	0.603***
		(0.003)	(0.003)	(0.022)
RfS: Consensual Encounter/Search		0.172***	0.135***	0.135***
		(0.002)	(0.002)	(0.016)
RfS: School/Education Violation		0.121***	0.102***	0.111***
		(0.003)	(0.003)	(0.012)
Unconditional Hit Rate: Weapon			0.333***	0.334***
			(0.003)	(0.014)
Unconditional Hit Rate: Property			0.319***	0.320***
			(0.004)	(0.026)
Unconditional Hit Rate: Drug			0.298***	0.298***
			(0.002)	(0.037)
Unconditional Hit Rate: Other			0.064***	0.068*
			(0.002)	(0.039)
Los Angeles County Sheriff				0.029**
				(0.014)
Los Angeles PD				-0.017***
				(0.003)
Riverside County Sheriff				-0.016
				(0.010)
San Bernardino County Sheriff				-0.011
				(0.011)
San Diego County Sheriff				-0.019***
				(0.004)
San Diego PD				-0.025***
				(0.004)
San Francisco PD				-0.060***

					(0.008)
Fresno PD					-0.050***
					(0.003)
Long Beach PD					-0.042***
					(0.003)
Oakland PD					-0.017**
					(0.008)
Orange County Sheriff					-0.037***
					(0.005)
Sacramento County Sheriff					-0.039***
					(0.008)
Sacramento PD					-0.058***
					(0.005)
San Jose PD					-0.028***
					(0.004)
Constant	0.056***	0.093***	-0.062***	-0.061***	-0.055***
	(0.000)	(0.003)	(0.003)	(0.003)	(0.011)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.006	0.013	0.155	0.206	0.192
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B11

Rates of intrusiveness level: ordered from vehicle, relative to those of omitted categories

Model:	(5)	(6)	(7)	(8)	(9)
Included variables	Out of Vehicle	Out of Vehicle	Out of Vehicle	Out of Vehicle	Out of Vehicle
Black	0.150***	0.133***	0.083***	0.078***	0.039***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.012)
Latino	0.044***	0.026***	0.035***	0.033***	0.020***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.005)
Asian	-0.053***	-0.056***	-0.017***	-0.016***	-0.024***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
Middle Eastern/South Asian	-0.067***	-0.080***	-0.028***	-0.025***	-0.021***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Native American	0.035***	0.003	0.014***	0.011***	0.021**
	(0.004)	(0.004)	(0.003)	(0.003)	(0.009)
Pacific Islander	0.030***	0.019***	0.017***	0.016***	0.011***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)
Multi Race/Ethnicity	0.058***	0.040***	0.033***	0.028***	0.008
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Female		-0.064***	-0.042***	-0.037***	-0.037***
		(0.000)	(0.000)	(0.000)	(0.005)
Transgender Man		0.070***	0.015*	0.016**	-0.029**
		(0.009)	(0.008)	(0.008)	(0.013)
Transgender Woman		0.182***	0.056***	0.055***	0.016**
		(0.012)	(0.011)	(0.011)	(0.008)
Gender Nonconforming		0.069***	0.082***	0.074***	0.026
		(0.011)	(0.010)	(0.009)	(0.053)
LGBT		0.107***	0.019***	0.020***	0.020***
		(0.003)	(0.003)	(0.003)	(0.007)
Ages 15-17		-0.031***	0.089***	0.077***	0.086***
		(0.006)	(0.005)	(0.005)	(0.013)
Ages 18-24		-0.203***	0.047***	0.038***	0.053**
		(0.005)	(0.005)	(0.005)	(0.022)
Ages 25-34		-0.193***	0.047***	0.039***	0.052**
		(0.005)	(0.005)	(0.005)	(0.026)
Ages 35-44		-0.216***	0.024***	0.018***	0.035
		(0.005)	(0.005)	(0.005)	(0.028)
Ages 45-54		-0.243***	0.002	-0.003	0.018
		(0.005)	(0.005)	(0.005)	(0.029)
Ages 55-64		-0.268***	-0.015***	-0.018***	0.007
		(0.005)	(0.005)	(0.005)	(0.029)
Ages 65+		-0.299***	-0.024***	-0.026***	-0.001
		(0.005)	(0.005)	(0.005)	(0.030)
Limited English Proficiency		0.051***	0.031***	0.030***	0.020***
		(0.001)	(0.001)	(0.001)	(0.004)
Disability: Deafness		0.165***	0.045***	0.046***	0.004

	(0.009)	(0.009)	(0.008)	(0.008)
Disability: Speech	0.248***	0.084***	0.082***	0.049***
	(0.010)	(0.009)	(0.009)	(0.012)
Disability: Blindness	0.345***	0.099***	0.091***	0.070*
	(0.017)	(0.017)	(0.017)	(0.037)
Disability: Mental Health	0.551***	0.114***	0.135***	0.135***
	(0.003)	(0.003)	(0.003)	(0.023)
Disability: Development	0.334***	0.027**	0.048***	0.045***
	(0.013)	(0.012)	(0.012)	(0.011)
Disability: Hyperactivity	-0.199***	-0.414***	-0.441***	-0.412***
	(0.070)	(0.070)	(0.072)	(0.079)
Disability: Other	0.295***	0.068***	0.062***	0.040***
	(0.006)	(0.006)	(0.006)	(0.013)
Disability: Multiple	0.295***	0.005	0.023***	0.024
	(0.009)	(0.008)	(0.008)	(0.025)
Call for Service		0.162***	0.171***	0.160***
		(0.001)	(0.001)	(0.009)
Reason for Stop: Reasonable Suspicion		0.455***	0.405***	0.322***
		(0.001)	(0.001)	(0.018)
RfS: Parole/Probation		0.577***	0.515***	0.424***
		(0.003)	(0.003)	(0.043)
RfS: Outstanding Warrant		0.631***	0.579***	0.487***
		(0.003)	(0.003)	(0.024)
RfS: Consensual Encounter/Search		0.413***	0.363***	0.273***
		(0.002)	(0.002)	(0.032)
RfS: School/Education Violation		0.341***	0.315***	0.241***
		(0.004)	(0.004)	(0.018)
Los Angeles County Sheriff				0.194***
				(0.048)
Los Angeles PD				0.187***
				(0.004)
Riverside County Sheriff				0.046***
				(0.009)
San Bernardino County Sheriff				0.145***
				(0.016)
San Diego County Sheriff				0.099***
				(0.013)
San Diego PD				0.113***
				(0.010)
San Francisco PD				0.110**
				(0.045)
Fresno PD				0.086***
				(0.002)
Long Beach PD				0.159***
				(0.005)
Oakland PD				0.178***
				(0.006)

Orange County Sheriff					0.126***
					(0.021)
Sacramento County Sheriff					0.218***
					(0.007)
Sacramento PD					0.126***
					(0.006)
San Jose PD					0.130***
					(0.006)
Unconditional Hit Rate: Weapon				0.269***	0.246***
				(0.003)	(0.012)
Unconditional Hit Rate: Property				0.138***	0.144***
				(0.004)	(0.015)
Unconditional Hit Rate: Drug				0.415***	0.382***
				(0.002)	(0.019)
Unconditional Hit Rate: Other				0.182***	0.160***
				(0.002)	(0.014)
Constant	0.128***	0.365***	0.044***	0.046***	-0.016
	(0.000)	(0.005)	(0.005)	(0.005)	(0.025)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.025	0.060	0.290	0.322	0.268
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B12

Rates of intrusiveness level: physical contact, relative to those of omitted categories

Model:	(10)	(11)	(12)	(13)	(14)
Included variables	Physical Contact	Physical Contact	Physical Contact	Physical Contact	Physical Contact
Black	0.130***	0.115***	0.065***	0.060***	0.026***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)
Latino	0.035***	0.020***	0.030***	0.028***	0.016***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)
Asian	-0.051***	-0.053***	-0.013***	-0.013***	-0.019***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)
Middle Eastern/South Asian	-0.064***	-0.074***	-0.022***	-0.019***	-0.016***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.002)
Native American	0.031***	0.002	0.013***	0.011***	0.021***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.007)
Pacific Islander	0.028***	0.018***	0.016***	0.015***	0.010***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Multi Race/Ethnicity	0.048***	0.033***	0.026***	0.022***	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Female		-0.058***	-0.036***	-0.032***	-0.032***
		(0.000)	(0.000)	(0.000)	(0.004)
Transgender Man		0.079***	0.022***	0.024***	-0.013
		(0.009)	(0.008)	(0.008)	(0.010)
Transgender Woman		0.185***	0.058***	0.057***	0.024**
		(0.012)	(0.011)	(0.011)	(0.010)
Gender Nonconforming		0.020*	0.034***	0.026***	-0.010
		(0.011)	(0.009)	(0.009)	(0.043)
LGBT		0.105***	0.015***	0.017***	0.015***
		(0.003)	(0.002)	(0.002)	(0.006)
Ages 15-17		-0.044***	0.077***	0.067***	0.075***
		(0.006)	(0.005)	(0.005)	(0.013)
Ages 18-24		-0.213***	0.040***	0.032***	0.045**
		(0.005)	(0.005)	(0.005)	(0.020)
Ages 25-34		-0.197***	0.045***	0.038***	0.049**
		(0.005)	(0.005)	(0.005)	(0.023)
Ages 35-44		-0.214***	0.029***	0.024***	0.038
		(0.005)	(0.005)	(0.005)	(0.024)
Ages 45-54		-0.237***	0.010**	0.006	0.024
		(0.005)	(0.005)	(0.005)	(0.024)
Ages 55-64		-0.260***	-0.005	-0.008	0.014
		(0.005)	(0.005)	(0.005)	(0.025)
Ages 65+		-0.291***	-0.013***	-0.015***	0.006
		(0.005)	(0.005)	(0.005)	(0.025)
Limited English Proficiency		0.040***	0.019***	0.018***	0.011***
		(0.001)	(0.001)	(0.001)	(0.003)
Disability: Deafness		0.148***	0.027***	0.027***	-0.007

	(0.009)	(0.008)	(0.008)	(0.007)
Disability: Speech	0.230***	0.064***	0.062***	0.037***
	(0.010)	(0.009)	(0.009)	(0.013)
Disability: Blindness	0.331***	0.081***	0.075***	0.058*
	(0.017)	(0.017)	(0.017)	(0.035)
Disability: Mental Health	0.565***	0.123***	0.143***	0.143***
	(0.003)	(0.003)	(0.003)	(0.022)
Disability: Development	0.334***	0.024*	0.042***	0.041***
	(0.013)	(0.012)	(0.012)	(0.011)
Disability: Hyperactivity	-0.172**	-0.389***	-0.412***	-0.396***
	(0.071)	(0.071)	(0.072)	(0.080)
Disability: Other	0.267***	0.037***	0.032***	0.014
	(0.006)	(0.006)	(0.006)	(0.012)
Disability: Multiple	0.307***	0.015*	0.031***	0.031
	(0.009)	(0.008)	(0.008)	(0.019)
Call for Service		0.160***	0.167***	0.157***
		(0.001)	(0.001)	(0.008)
Reason for Stop: Reasonable Suspicion		0.464***	0.419***	0.350***
		(0.001)	(0.001)	(0.015)
RfS: Parole/Probation		0.571***	0.515***	0.438***
		(0.003)	(0.003)	(0.039)
RfS: Outstanding Warrant		0.640***	0.592***	0.512***
		(0.003)	(0.003)	(0.022)
RfS: Consensual Encounter/Search		0.405***	0.360***	0.284***
		(0.002)	(0.002)	(0.029)
RfS: School/Education Violation		0.344***	0.321***	0.262***
		(0.004)	(0.004)	(0.016)
Los Angeles County Sheriff				0.184***
				(0.048)
Los Angeles PD				0.153***
				(0.004)
Riverside County Sheriff				0.040***
				(0.008)
San Bernardino County Sheriff				0.118***
				(0.014)
San Diego County Sheriff				0.084***
				(0.011)
San Diego PD				0.088***
				(0.008)
San Francisco PD				0.108***
				(0.039)
Fresno PD				0.070***
				(0.002)
Long Beach PD				0.140***
				(0.004)
Oakland PD				0.150***
				(0.005)

Orange County Sheriff					0.104***
					(0.017)
Sacramento County Sheriff					0.190***
					(0.007)
Sacramento PD					0.128***
					(0.006)
San Jose PD					0.065***
					(0.005)
Unconditional Hit Rate: Weapon				0.262***	0.243***
				(0.003)	(0.013)
Unconditional Hit Rate: Property				0.164***	0.170***
				(0.004)	(0.013)
Unconditional Hit Rate: Drug				0.362***	0.335***
				(0.002)	(0.026)
Unconditional Hit Rate: Other				0.162***	0.144***
				(0.002)	(0.012)
Constant	0.117***	0.351***	0.026***	0.028***	-0.024
	(0.000)	(0.005)	(0.005)	(0.005)	(0.022)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.022	0.058	0.316	0.345	0.288
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B13

Rates of intrusiveness level: detained, relative to those of omitted categories

Model:	(15)	(16)	(17)	(18)	(19)
Included variables	Detained	Detained	Detained	Detained	Detained
Black	0.129***	0.114***	0.064***	0.059***	0.026***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)
Latino	0.035***	0.021***	0.030***	0.028***	0.016***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)
Asian	-0.050***	-0.052***	-0.013***	-0.012***	-0.019***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)
Middle Eastern/South Asian	-0.063***	-0.074***	-0.022***	-0.019***	-0.017***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)
Native American	0.033***	0.005	0.016***	0.014***	0.023***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.006)
Pacific Islander	0.028***	0.018***	0.017***	0.015***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Multi Race/Ethnicity	0.049***	0.034***	0.027***	0.023***	0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Female		-0.058***	-0.036***	-0.032***	-0.032***
		(0.000)	(0.000)	(0.000)	(0.004)
Transgender Man		0.081***	0.024***	0.025***	-0.015
		(0.009)	(0.008)	(0.008)	(0.010)
Transgender Woman		0.188***	0.060***	0.059***	0.026***
		(0.012)	(0.011)	(0.011)	(0.008)
Gender Nonconforming		0.015	0.028***	0.021**	-0.014
		(0.011)	(0.009)	(0.009)	(0.042)
LGBT		0.104***	0.015***	0.016***	0.019***
		(0.003)	(0.002)	(0.002)	(0.005)
Ages 15-17		-0.042***	0.079***	0.069***	0.076***
		(0.006)	(0.005)	(0.005)	(0.013)
Ages 18-24		-0.209***	0.042***	0.035***	0.047**
		(0.005)	(0.005)	(0.005)	(0.020)
Ages 25-34		-0.194***	0.048***	0.041***	0.051**
		(0.005)	(0.005)	(0.005)	(0.023)
Ages 35-44		-0.210***	0.032***	0.026***	0.040*
		(0.005)	(0.005)	(0.005)	(0.024)
Ages 45-54		-0.233***	0.013***	0.009*	0.026
		(0.005)	(0.005)	(0.005)	(0.024)
Ages 55-64		-0.256***	-0.001	-0.004	0.015
		(0.005)	(0.005)	(0.005)	(0.025)
Ages 65+		-0.286***	-0.010**	-0.012**	0.008
		(0.005)	(0.005)	(0.005)	(0.025)
Limited English Proficiency		0.040***	0.019***	0.018***	0.010***
		(0.001)	(0.001)	(0.001)	(0.003)
Disability: Deafness		0.146***	0.026***	0.026***	-0.008

	(0.009)	(0.008)	(0.008)	(0.007)
Disability: Speech	0.223***	0.058***	0.056***	0.033**
	(0.010)	(0.009)	(0.009)	(0.013)
Disability: Blindness	0.326***	0.078***	0.071***	0.057*
	(0.017)	(0.017)	(0.017)	(0.034)
Disability: Mental Health	0.563***	0.124***	0.143***	0.143***
	(0.003)	(0.003)	(0.003)	(0.022)
Disability: Development	0.327***	0.019	0.037***	0.037***
	(0.013)	(0.012)	(0.012)	(0.011)
Disability: Hyperactivity	-0.236***	-0.452***	-0.475***	-0.458***
	(0.059)	(0.055)	(0.057)	(0.059)
Disability: Other	0.264***	0.035***	0.030***	0.013
	(0.006)	(0.006)	(0.006)	(0.012)
Disability: Multiple	0.301***	0.011	0.027***	0.028
	(0.009)	(0.008)	(0.008)	(0.019)
Call for Service		0.157***	0.165***	0.156***
		(0.001)	(0.001)	(0.008)
Reason for Stop: Reasonable Suspicion		0.464***	0.418***	0.351***
		(0.001)	(0.001)	(0.015)
RfS: Parole/Probation		0.569***	0.513***	0.439***
		(0.003)	(0.003)	(0.039)
RfS: Outstanding Warrant		0.639***	0.592***	0.514***
		(0.003)	(0.003)	(0.022)
RfS: Consensual Encounter/Search		0.392***	0.348***	0.277***
		(0.002)	(0.002)	(0.029)
RfS: School/Education Violation		0.343***	0.321***	0.264***
		(0.004)	(0.004)	(0.015)
Los Angeles County Sheriff				0.178***
				(0.048)
Los Angeles PD				0.154***
				(0.004)
Riverside County Sheriff				0.038***
				(0.008)
San Bernardino County Sheriff				0.110***
				(0.016)
San Diego County Sheriff				0.082***
				(0.012)
San Diego PD				0.085***
				(0.008)
San Francisco PD				0.102***
				(0.038)
Fresno PD				0.068***
				(0.002)
Long Beach PD				0.135***
				(0.004)
Oakland PD				0.147***
				(0.005)

Orange County Sheriff					0.099***
					(0.016)
Sacramento County Sheriff					0.187***
					(0.007)
Sacramento PD					0.095***
					(0.006)
San Jose PD					0.061***
					(0.005)
Unconditional Hit Rate: Weapon				0.264***	0.245***
				(0.003)	(0.013)
Unconditional Hit Rate: Property				0.162***	0.168***
				(0.004)	(0.013)
Unconditional Hit Rate: Drug				0.358***	0.332***
				(0.002)	(0.026)
Unconditional Hit Rate: Other				0.161***	0.144***
				(0.002)	(0.012)
Constant	0.114***	0.345***	0.021***	0.023***	-0.026
	(0.000)	(0.005)	(0.005)	(0.005)	(0.022)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.022	0.058	0.318	0.346	0.290
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B14

Rates of intrusiveness level: handcuffed, relative to those of omitted categories

Model:	(20)	(21)	(22)	(23)	(24)
Included variables	Handcuffed	Handcuffed	Handcuffed	Handcuffed	Handcuffed
Black	0.075***	0.065***	0.030***	0.026***	0.015***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)
Latino	0.023***	0.013***	0.019***	0.018***	0.014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)
Asian	-0.031***	-0.032***	-0.006***	-0.005***	-0.004**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Middle Eastern/South Asian	-0.039***	-0.046***	-0.011***	-0.009***	-0.009***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Native American	0.030***	0.011***	0.019***	0.017***	0.019***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Pacific Islander	0.021***	0.015***	0.013***	0.011***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Multi Race/Ethnicity	0.023***	0.013***	0.007***	0.004***	0.007**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
Female		-0.041***	-0.026***	-0.023***	-0.022***
		(0.000)	(0.000)	(0.000)	(0.004)
Transgender Man		0.077***	0.040***	0.041***	0.014*
		(0.008)	(0.007)	(0.007)	(0.008)
Transgender Woman		0.118***	0.030***	0.028***	0.011
		(0.011)	(0.010)	(0.010)	(0.014)
Gender Nonconforming		-0.007	0.003	-0.003	0.000
		(0.009)	(0.008)	(0.008)	(0.030)
LGBT		0.077***	0.016***	0.017***	0.023***
		(0.003)	(0.002)	(0.002)	(0.004)
Ages 15-17		-0.006	0.078***	0.069***	0.071***
		(0.005)	(0.005)	(0.005)	(0.011)
Ages 18-24		-0.117***	0.055***	0.049***	0.054***
		(0.005)	(0.004)	(0.004)	(0.021)
Ages 25-34		-0.107***	0.058***	0.053***	0.059***
		(0.005)	(0.004)	(0.004)	(0.022)
Ages 35-44		-0.118***	0.047***	0.043***	0.051**
		(0.005)	(0.004)	(0.004)	(0.022)
Ages 45-54		-0.136***	0.032***	0.029***	0.038
		(0.005)	(0.004)	(0.004)	(0.023)
Ages 55-64		-0.151***	0.023***	0.022***	0.030
		(0.005)	(0.004)	(0.004)	(0.024)
Ages 65+		-0.170***	0.018***	0.017***	0.026
		(0.005)	(0.004)	(0.004)	(0.025)
Limited English Proficiency		0.030***	0.015***	0.014***	0.007***
		(0.001)	(0.001)	(0.001)	(0.003)
Disability: Deafness		0.079***	-0.004	-0.004	-0.019**

	(0.007)	(0.007)	(0.006)	(0.009)
Disability: Speech	0.141***	0.027***	0.026***	0.024**
	(0.009)	(0.008)	(0.008)	(0.011)
Disability: Blindness	0.215***	0.044***	0.040***	0.032
	(0.016)	(0.015)	(0.015)	(0.023)
Disability: Mental Health	0.483***	0.173***	0.188***	0.179***
	(0.003)	(0.003)	(0.003)	(0.032)
Disability: Development	0.201***	-0.014	0.002	-0.004
	(0.012)	(0.011)	(0.011)	(0.014)
Disability: Hyperactivity	-0.101*	-0.234***	-0.251***	-0.231***
	(0.058)	(0.054)	(0.053)	(0.055)
Disability: Other	0.143***	-0.016***	-0.020***	-0.027**
	(0.005)	(0.005)	(0.005)	(0.013)
Disability: Multiple	0.225***	0.021***	0.034***	0.028
	(0.008)	(0.008)	(0.008)	(0.018)
Call for Service		0.153***	0.155***	0.162***
		(0.001)	(0.001)	(0.013)
Reason for Stop: Reasonable Suspicion		0.302***	0.266***	0.235***
		(0.001)	(0.001)	(0.013)
RfS: Parole/Probation		0.357***	0.311***	0.287***
		(0.003)	(0.003)	(0.025)
RfS: Outstanding Warrant		0.550***	0.510***	0.495***
		(0.003)	(0.003)	(0.026)
RfS: Consensual Encounter/Search		0.188***	0.153***	0.148***
		(0.002)	(0.002)	(0.018)
RfS: School/Education Violation		0.183***	0.165***	0.151***
		(0.003)	(0.003)	(0.022)
Los Angeles County Sheriff				-0.017*
				(0.009)
Los Angeles PD				0.068***
				(0.006)
Riverside County Sheriff				0.007
				(0.004)
San Bernardino County Sheriff				0.007
				(0.009)
San Diego County Sheriff				0.014
				(0.010)
San Diego PD				0.080***
				(0.007)
San Francisco PD				-0.023***
				(0.004)
Fresno PD				-0.020***
				(0.003)
Long Beach PD				-0.025***
				(0.004)
Oakland PD				0.100***
				(0.011)

Orange County Sheriff					-0.032***
					(0.008)
Sacramento County Sheriff					0.077***
					(0.011)
Sacramento PD					0.003
					(0.007)
San Jose PD					0.017***
					(0.005)
Unconditional Hit Rate: Weapon				0.316***	0.307***
				(0.003)	(0.009)
Unconditional Hit Rate: Property				0.272***	0.280***
				(0.004)	(0.014)
Unconditional Hit Rate: Drug				0.276***	0.272***
				(0.002)	(0.035)
Unconditional Hit Rate: Other				0.070***	0.067***
				(0.002)	(0.025)
Constant	0.067***	0.199***	-0.021***	-0.021***	-0.036
	(0.000)	(0.005)	(0.004)	(0.004)	(0.023)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.012	0.047	0.248	0.282	0.241
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B15

Rates of intrusiveness level: weapon involved, relative to those of omitted categories

Model:	(25)	(26)	(27)	(28)	(29)
Included variables	Involves Weapon	Involves Weapon	Involves Weapon	Involves Weapon	Involves Weapon
Black	0.006***	0.005***	0.003***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Latino	0.002***	0.001***	0.002***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Asian	-0.001***	-0.001***	0.001***	0.000***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Middle Eastern/South Asian	-0.001***	-0.002***	0.000**	0.000***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Native American	0.001	0.000	0.001	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Pacific Islander	0.003***	0.003***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Multi Race/Ethnicity	0.003***	0.002***	0.001***	0.001***	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Female		-0.003***	-0.002***	-0.001***	-0.001***
		(0.000)	(0.000)	(0.000)	(0.000)
Transgender Man		0.006***	0.004*	0.004*	0.003*
		(0.002)	(0.002)	(0.002)	(0.002)
Transgender Woman		0.004	-0.002	-0.002	-0.002
		(0.003)	(0.003)	(0.003)	(0.004)
Gender Nonconforming		0.003	0.004*	0.003	0.001
		(0.002)	(0.002)	(0.002)	(0.004)
LGBT		0.002***	-0.002***	-0.001**	-0.000
		(0.001)	(0.001)	(0.001)	(0.001)
Ages 15-17		0.002	0.007***	0.006***	0.006***
		(0.001)	(0.001)	(0.001)	(0.002)
Ages 18-24		-0.009***	0.002	0.002	0.002
		(0.001)	(0.001)	(0.001)	(0.003)
Ages 25-34		-0.009***	0.001	0.001	0.001
		(0.001)	(0.001)	(0.001)	(0.003)
Ages 35-44		-0.010***	0.000	0.000	0.001
		(0.001)	(0.001)	(0.001)	(0.003)
Ages 45-54		-0.012***	-0.001	-0.001	-0.000
		(0.001)	(0.001)	(0.001)	(0.003)
Ages 55-64		-0.013***	-0.002	-0.001	-0.001
		(0.001)	(0.001)	(0.001)	(0.003)
Ages 65+		-0.013***	-0.001	-0.001	-0.000
		(0.001)	(0.001)	(0.001)	(0.003)
Limited English Proficiency		0.001***	0.000	-0.000	-0.000
		(0.000)	(0.000)	(0.000)	(0.000)
Disability: Deafness		0.004**	-0.001	-0.002	-0.002

	(0.002)	(0.002)	(0.002)	(0.002)
Disability: Speech	0.004**	-0.003*	-0.004**	-0.004**
	(0.002)	(0.002)	(0.002)	(0.002)
Disability: Blindness	0.013***	0.002	0.001	0.001
	(0.004)	(0.004)	(0.004)	(0.005)
Disability: Mental Health	0.013***	-0.007***	-0.006***	-0.005**
	(0.001)	(0.001)	(0.001)	(0.002)
Disability: Development	0.004*	-0.010***	-0.007***	-0.007***
	(0.002)	(0.003)	(0.002)	(0.003)
Disability: Hyperactivity	-0.016***	-0.022***	-0.026***	-0.025***
	(0.001)	(0.002)	(0.005)	(0.007)
Disability: Other	0.009***	-0.002	-0.003**	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Disability: Multiple	0.004**	-0.009***	-0.007***	-0.007***
	(0.002)	(0.002)	(0.002)	(0.002)
Call for Service		0.010***	0.010***	0.008***
		(0.000)	(0.000)	(0.002)
Reason for Stop: Reasonable Suspicion		0.021***	0.015***	0.016***
		(0.000)	(0.000)	(0.002)
RfS: Parole/Probation		0.009***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)
RfS: Outstanding Warrant		0.045***	0.039***	0.039***
		(0.001)	(0.001)	(0.006)
RfS: Consensual Encounter/Search		0.001***	-0.002***	-0.005***
		(0.000)	(0.000)	(0.001)
RfS: School/Education Violation		0.006***	0.004***	0.003
		(0.001)	(0.001)	(0.002)
Los Angeles County Sheriff				-0.003***
				(0.001)
Los Angeles PD				0.001
				(0.001)
Riverside County Sheriff				0.001
				(0.001)
San Bernardino County Sheriff				0.007***
				(0.002)
San Diego County Sheriff				-0.002*
				(0.001)
San Diego PD				-0.008***
				(0.001)
San Francisco PD				-0.007***
				(0.001)
Fresno PD				-0.000
				(0.001)
Long Beach PD				0.004***
				(0.001)
Oakland PD				0.005**
				(0.002)

Orange County Sheriff					0.001
					(0.001)
Sacramento County Sheriff					0.012***
					(0.003)
Sacramento PD					0.008***
					(0.002)
San Jose PD					0.004***
					(0.001)
Unconditional Hit Rate: Weapon				0.095***	0.094***
				(0.002)	(0.006)
Unconditional Hit Rate: Property				0.074***	0.074***
				(0.003)	(0.010)
Unconditional Hit Rate: Drug				0.012***	0.012***
				(0.001)	(0.002)
Unconditional Hit Rate: Other				0.020***	0.020***
				(0.001)	(0.004)
Constant	0.003***	0.014***	-0.000	-0.001	-0.001
	(0.000)	(0.001)	(0.001)	(0.001)	(0.003)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.001	0.002	0.019	0.041	0.038
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B16

Rates of intrusiveness level: weapon used, relative to those of omitted categories

Model:	(30)	(31)	(32)	(33)	(34)
Included variables	Weapon Used	Weapon Used	Weapon Used	Weapon Used	Weapon Used
Black	0.00051***	0.00042***	0.00022***	0.00016***	0.00018***
	(0.00004)	(0.00004)	(0.00004)	(0.00004)	(0.00003)
Latino	0.00010***	0.00004*	0.00009***	0.00006**	0.00006**
	(0.00002)	(0.00003)	(0.00003)	(0.00003)	(0.00003)
Asian	-0.00019***	-0.00019***	-0.00004	-0.00004	-0.00002
	(0.00003)	(0.00003)	(0.00003)	(0.00003)	(0.00003)
Middle Eastern/South Asian	-0.00021***	-0.00027***	-0.00007**	-0.00006*	-0.00004
	(0.00003)	(0.00004)	(0.00003)	(0.00003)	(0.00004)
Native American	-0.00001	-0.00017	-0.00010	-0.00014	-0.00011
	(0.00021)	(0.00023)	(0.00023)	(0.00023)	(0.00020)
Pacific Islander	0.00043**	0.00038*	0.00036*	0.00033*	0.00032
	(0.00020)	(0.00020)	(0.00020)	(0.00019)	(0.00025)
Multi Race/Ethnicity	0.00041***	0.00033**	0.00029**	0.00025*	0.00024
	(0.00015)	(0.00015)	(0.00015)	(0.00015)	(0.00015)
Female		-0.00043***	-0.00035***	-0.00031***	-0.00032***
		(0.00002)	(0.00002)	(0.00002)	(0.00004)
Transgender Man		0.00110	0.00091	0.00089	0.00089
		(0.00088)	(0.00088)	(0.00088)	(0.00117)
Transgender Woman		-0.00035	-0.00091	-0.00091	-0.00089
		(0.00079)	(0.00079)	(0.00079)	(0.00076)
Gender Nonconforming		0.00038	0.00046	0.00043	0.00018
		(0.00091)	(0.00091)	(0.00091)	(0.00094)
LGBT		0.00035	-0.00005	-0.00002	-0.00001
		(0.00022)	(0.00022)	(0.00022)	(0.00020)
Ages 15-17		0.00054**	0.00109***	0.00102***	0.00103***
		(0.00025)	(0.00025)	(0.00025)	(0.00021)
Ages 18-24		0.00046**	0.00154***	0.00154***	0.00157***
		(0.00023)	(0.00023)	(0.00023)	(0.00034)
Ages 25-34		0.00066***	0.00170***	0.00171***	0.00174***
		(0.00022)	(0.00023)	(0.00023)	(0.00034)
Ages 35-44		0.00057**	0.00161***	0.00162***	0.00166***
		(0.00023)	(0.00023)	(0.00023)	(0.00032)
Ages 45-54		0.00041*	0.00146***	0.00150***	0.00153***
		(0.00023)	(0.00023)	(0.00023)	(0.00030)
Ages 55-64		0.00027	0.00136***	0.00140***	0.00144***
		(0.00023)	(0.00023)	(0.00023)	(0.00030)
Ages 65+		0.00020	0.00138***	0.00142***	0.00146***
		(0.00023)	(0.00023)	(0.00023)	(0.00030)

Limited English Proficiency	0.00011*	-0.00000	-0.00002	-0.00002
	(0.00006)	(0.00006)	(0.00006)	(0.00006)
Disability: Deafness	0.00032	-0.00019	-0.00022	-0.00024
	(0.00054)	(0.00054)	(0.00055)	(0.00060)
Disability: Speech	0.00086	0.00011	0.00009	0.00005
	(0.00077)	(0.00077)	(0.00077)	(0.00082)
Disability: Blindness	0.00194	0.00086	0.00082	0.00085
	(0.00171)	(0.00171)	(0.00171)	(0.00209)
Disability: Mental Health	0.00544***	0.00328***	0.00336***	0.00337***
	(0.00045)	(0.00046)	(0.00046)	(0.00047)
Disability: Development	0.00154	0.00012	0.00029	0.00026
	(0.00116)	(0.00115)	(0.00116)	(0.00097)
Disability: Hyperactivity	-0.00030*	-0.00110***	-0.00151***	-0.00134***
	(0.00016)	(0.00026)	(0.00048)	(0.00049)
Disability: Other	0.00102**	0.00001	-0.00006	-0.00005
	(0.00049)	(0.00049)	(0.00049)	(0.00049)
Disability: Multiple	0.00150*	0.00008	0.00020	0.00017
	(0.00082)	(0.00081)	(0.00081)	(0.00072)
Call for Service		0.00189***	0.00180***	0.00179***
		(0.00015)	(0.00015)	(0.00022)
Reason for Stop: Reasonable Suspicion		0.00158***	0.00118***	0.00113***
		(0.00007)	(0.00007)	(0.00008)
RfS: Parole/Probation		0.00071***	0.00029	0.00026
		(0.00020)	(0.00020)	(0.00018)
RfS: Outstanding Warrant		0.00362***	0.00316***	0.00311***
		(0.00039)	(0.00038)	(0.00049)
RfS: Consensual Encounter/Search		0.00019	-0.00009	-0.00012
		(0.00014)	(0.00014)	(0.00021)
RfS: School/Education Violation		0.00053*	0.00036	0.00023
		(0.00029)	(0.00029)	(0.00035)
Los Angeles County Sheriff				0.00039
				(0.00034)
Los Angeles PD				0.00002
				(0.00007)
Riverside County Sheriff				-0.00001
				(0.00023)
San Bernardino County Sheriff				0.00007
				(0.00017)
San Diego County Sheriff				0.00023
				(0.00021)
San Diego PD				0.00019***
				(0.00007)
San Francisco PD				-0.00031***
				(0.00010)

Fresno PD					-0.00028***
					(0.00004)
Long Beach PD					0.00049***
					(0.00015)
Oakland PD					0.00009
					(0.00018)
Orange County Sheriff					-0.00020*
					(0.00012)
Sacramento County Sheriff					0.00064***
					(0.00016)
Sacramento PD					-0.00043***
					(0.00011)
San Jose PD					0.00102***
					(0.00008)
Unconditional Hit Rate: Weapon				0.00939***	0.00936***
				(0.00072)	(0.00093)
Unconditional Hit Rate: Property				0.00338***	0.00339***
				(0.00072)	(0.00106)
Unconditional Hit Rate: Drug				0.00088***	0.00086**
				(0.00021)	(0.00036)
Unconditional Hit Rate: Other				0.00110***	0.00114**
				(0.00027)	(0.00057)
Constant	0.00038***	-0.00002	-0.00139***	-0.00143***	-0.00150***
	(0.00002)	(0.00022)	(0.00023)	(0.00023)	(0.00034)
Observations	3,992,074	3,992,072	3,992,072	3,992,072	3,992,070
R-squared	0.00008	0.00066	0.00203	0.00330	0.00302
Number of City					842

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); traffic violation (reason for stop); and CHP (law enforcement agency).

TABLE B17

Search rates, relative to those of omitted categories, resulting from traffic stops by law enforcement agency type

	Traffic – Local Law Enforcement				Traffic - CHP			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
VARIABLES	Search	Search	Search	Search	Search	Search	Search	Search
Black	0.134***	0.115***	0.115***	0.095***	0.003***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.024)	(0.000)	(0.000)	(0.000)	(0.001)
Latino	0.069***	0.047***	0.047***	0.037***	0.007***	0.004***	0.004***	0.005***
	(0.001)	(0.001)	(0.001)	(0.012)	(0.000)	(0.000)	(0.000)	(0.001)
Asian	-0.033***	-0.032***	-0.032***	-0.038***	-0.004***	-0.005***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.005)	(0.000)	(0.000)	(0.000)	(0.001)
Middle Eastern/South Asian	-0.033***	-0.049***	-0.049***	-0.047***	-0.006***	-0.008***	-0.008***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.004)	(0.000)	(0.000)	(0.000)	(0.001)
Native American	0.009	0.005	0.006	0.011	0.020***	0.020***	0.019***	0.018***
	(0.006)	(0.009)	(0.009)	(0.013)	(0.002)	(0.002)	(0.002)	(0.003)
Pacific Islander	0.017***	0.009**	0.008**	0.007	0.005***	0.004***	0.004***	0.003**
	(0.003)	(0.003)	(0.003)	(0.009)	(0.001)	(0.001)	(0.001)	(0.001)
Multi Race/Ethnicity	0.059***	0.039***	0.039***	0.033***	0.005***	0.002**	0.002**	0.003***
	(0.003)	(0.003)	(0.003)	(0.011)	(0.001)	(0.001)	(0.001)	(0.001)
Female		-0.097***	-0.096***	-0.091***		-0.006***	-0.006***	-0.007***
		(0.000)	(0.000)	(0.016)		(0.000)	(0.000)	(0.000)
Transgender Man		0.039***	0.039***	0.030*		0.017	0.019	0.019**
		(0.011)	(0.011)	(0.016)		(0.018)	(0.018)	(0.008)
Transgender Woman		0.001	0.001	-0.008		0.110	0.112	0.111**
		(0.015)	(0.015)	(0.024)		(0.073)	(0.073)	(0.054)
Gender Nonconforming		-0.005	-0.006	-0.025				
		(0.012)	(0.012)	(0.026)				
LGBT		-0.012***	-0.013***	-0.010		0.033***	0.032***	0.031***
		(0.004)	(0.004)	(0.018)		(0.003)	(0.003)	(0.004)
Ages 15-17		0.103***	0.103***	0.106***		-0.004	0.005	0.005
		(0.008)	(0.008)	(0.027)		(0.007)	(0.007)	(0.007)
Ages 18-24		0.019***	0.020***	0.024***		-0.004	0.006	0.006
		(0.007)	(0.007)	(0.008)		(0.007)	(0.007)	(0.007)
Ages 25-34		0.013*	0.014**	0.017		-0.003	0.007	0.008
		(0.007)	(0.007)	(0.013)		(0.007)	(0.007)	(0.007)
Ages 35-44		-0.015**	-0.014**	-0.008		-0.008	0.002	0.003
		(0.007)	(0.007)	(0.020)		(0.007)	(0.007)	(0.007)
Ages 45-54		-0.047***	-0.046***	-0.038		-0.012*	-0.002	-0.001
		(0.007)	(0.007)	(0.024)		(0.007)	(0.007)	(0.007)
Ages 55-64		-0.071***	-0.070***	-0.060**		-0.013**	-0.003	-0.002

	(0.007)	(0.007)	(0.026)	(0.007)	(0.007)	(0.007)
Ages 65+	-0.086***	-0.085***	-0.072***	-0.015**	-0.005	-0.004
	(0.007)	(0.007)	(0.024)	(0.007)	(0.007)	(0.007)
Limited English Proficiency	0.009***	0.008***	-0.003	0.014***	0.013***	0.014***
	(0.001)	(0.001)	(0.005)	(0.001)	(0.001)	(0.003)
Disability: Deafness	0.029***	0.028***	0.023***	0.021**	0.019**	0.018*
	(0.009)	(0.009)	(0.007)	(0.010)	(0.010)	(0.010)
Disability: Speech	0.039***	0.037***	0.031	-0.009	-0.008	-0.009
	(0.010)	(0.010)	(0.024)	(0.006)	(0.006)	(0.006)
Disability: Blindness	0.142***	0.140***	0.126***	0.065*	0.059*	0.054
	(0.026)	(0.026)	(0.041)	(0.037)	(0.036)	(0.035)
Disability: Mental Health	0.173***	0.160***	0.159***	0.190***	0.151***	0.149***
	(0.014)	(0.013)	(0.037)	(0.022)	(0.022)	(0.025)
Disability: Development	0.082***	0.080***	0.073***	0.070***	0.056**	0.054**
	(0.025)	(0.025)	(0.028)	(0.023)	(0.022)	(0.023)
Disability: Hyperactivity	0.105***	0.102***	0.096***	0.066***	0.053***	0.050***
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.010)
Disability: Other	-0.028*	-0.029**	0.002	0.075***	0.060***	0.057**
	(0.015)	(0.015)	(0.030)	(0.023)	(0.023)	(0.024)
Call for Service		0.095***	0.091***		0.167***	0.166***
		(0.004)	(0.015)		(0.004)	(0.018)
Los Angeles County Sheriff			0.006			
			(0.019)			
Riverside County Sheriff			0.050			
			(0.048)			
San Bernardino County Sheriff			0.196***			
			(0.043)			
San Diego County Sheriff			-0.173***			
			(0.052)			
San Diego PD			-0.143***			
			(0.049)			
San Francisco PD			-0.067			
			(0.043)			
Fresno PD			0.892***			
			(0.065)			
Long Beach PD			-0.033*			
			(0.018)			

Oakland PD				0.145**				
				(0.060)				
Orange County Sheriff				0.063				
				(0.042)				
Sacramento County Sheriff				0.292***				
				(0.045)				
Sacramento PD				0.326***				
				(0.045)				
San Jose PD				0.575***				
				(0.024)				
Constant	0.061***	0.113***	0.111***	0.051***	0.012***	0.022***	0.011	0.010
	(0.000)	(0.007)	(0.007)	(0.015)	(0.000)	(0.007)	(0.007)	(0.007)
Observations	1,233,346	1,233,346	1,233,346	1,233,346	2,161,046	2,161,046	2,161,046	2,161,046
R-squared	0.029	0.060	0.061	0.048	0.001	0.004	0.014	0.014
Number of City				518				531
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1								

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); and LAPD (local law enforcement agency).

TABLE B18

Yield rates, relative to those of omitted categories, resulting from traffic stops by local law enforcement

	Traffic – Local Law Enforcement				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	Yield	Yield	Yield	Yield	Yield
Black	-0.060***	-0.059***	-0.058***	-0.070***	-0.054***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)
Latino	-0.060***	-0.057***	-0.057***	-0.054***	-0.038***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.005)
Asian	-0.006	-0.004	-0.004	-0.009	-0.028***
	(0.010)	(0.010)	(0.010)	(0.009)	(0.007)
Middle Eastern/South Asian	-0.032***	-0.027**	-0.027**	-0.038***	-0.032***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Native American	-0.008	-0.009	-0.009	-0.017	-0.020
	(0.037)	(0.037)	(0.037)	(0.035)	(0.030)
Pacific Islander	-0.017	-0.014	-0.014	-0.008	-0.027
	(0.020)	(0.020)	(0.020)	(0.018)	(0.021)
Multi Race/Ethnicity	-0.026**	-0.023**	-0.023**	-0.035***	-0.034**
	(0.011)	(0.011)	(0.011)	(0.010)	(0.015)
Female		0.021***	0.021***	0.006*	-0.002
		(0.004)	(0.004)	(0.003)	(0.004)
Transgender Man		-0.062**	-0.062**	-0.021	0.015
		(0.027)	(0.027)	(0.026)	(0.020)
Transgender Woman		-0.018	-0.018	-0.002	0.022
		(0.044)	(0.044)	(0.041)	(0.036)
Gender Nonconforming		-0.025	-0.025	-0.002	-0.030
		(0.030)	(0.030)	(0.028)	(0.034)
LGBT		0.025	0.024	0.010	-0.008
		(0.016)	(0.016)	(0.015)	(0.016)
Ages 15-17		0.021	0.021	0.014	0.007
		(0.025)	(0.025)	(0.023)	(0.022)
Ages 18-24		0.010	0.010	-0.003	-0.009
		(0.024)	(0.024)	(0.022)	(0.019)
Ages 25-34		-0.012	-0.012	0.001	-0.006
		(0.024)	(0.024)	(0.022)	(0.018)
Ages 35-44		-0.007	-0.007	0.015	0.006
		(0.024)	(0.024)	(0.022)	(0.018)
Ages 45-54		0.001	0.001	0.025	0.014
		(0.024)	(0.024)	(0.022)	(0.018)
Ages 55-64		0.013	0.012	0.028	0.018
		(0.024)	(0.024)	(0.023)	(0.018)
Ages 65+		-0.023	-0.024	-0.012	-0.018
		(0.028)	(0.028)	(0.026)	(0.019)

Limited English Proficiency	-0.025***	-0.025***	-0.026***	-0.024***
	(0.005)	(0.005)	(0.005)	(0.004)
Disability: Deafness	-0.002	-0.002	0.014	0.027
	(0.031)	(0.031)	(0.028)	(0.026)
Disability: Speech	-0.008	-0.009	-0.014	-0.056**
	(0.032)	(0.032)	(0.030)	(0.027)
Disability: Blindness	-0.022	-0.022	-0.020	-0.026
	(0.048)	(0.048)	(0.046)	(0.038)
Disability: Mental Health	-0.049**	-0.052**	-0.047**	-0.052*
	(0.021)	(0.021)	(0.021)	(0.027)
Disability: Development	-0.140***	-0.141***	-0.084**	-0.111***
	(0.036)	(0.036)	(0.035)	(0.019)
Disability: Hyperactivity	0.013	0.012	0.007	0.010
	(0.021)	(0.021)	(0.021)	(0.021)
Disability: Other	0.009	0.009	0.040	0.040
	(0.049)	(0.049)	(0.048)	(0.049)
Call for Service		0.012	-0.018**	-0.030**
		(0.008)	(0.008)	(0.013)
Basis for Search: Officer Safety			-0.006**	-0.005
			(0.003)	(0.005)
BfS: Search Warrant			0.197***	0.188***
			(0.036)	(0.041)
BfS: Parole/Probation			0.026***	0.014
			(0.002)	(0.009)
BfS: Suspect Weapon			0.096***	0.105***
			(0.005)	(0.011)
BfS: Visible Contraband			0.607***	0.600***
			(0.007)	(0.016)
BfS: Odor of Contraband			0.427***	0.420***
			(0.005)	(0.019)
BfS: Canine Detect			0.469***	0.445***
			(0.034)	(0.048)
BfS: Evidence			0.437***	0.420***
			(0.009)	(0.059)
BfS: Incident			0.195***	0.189***
			(0.004)	(0.015)
BfS: Exigent Circumstances			0.191***	0.194***
			(0.029)	(0.039)
BfS: Vehicle Inventory			0.151***	0.143***
			(0.005)	(0.018)
BfS: School Policy			0.919***	0.920***
			(0.007)	(0.015)
Los Angeles County Sheriff				0.035
				(0.043)
Riverside County Sheriff				0.118
				(0.174)
San Bernardino County Sheriff				0.141

					(0.153)
San Diego County Sheriff					0.170
					(0.186)
San Diego PD					0.236
					(0.189)
Fresno PD					-0.391***
					(0.041)
Long Beach PD					-0.130*
					(0.071)
Orange County Sheriff					0.084
					(0.191)
Sacramento County Sheriff					-0.098***
					(0.002)
Constant	0.251***	0.251***	0.251***	0.137***	0.117***
	(0.003)	(0.024)	(0.024)	(0.022)	(0.033)
Observations	140,806	140,806	140,806	140,796	140,796
R-squared	0.003	0.004	0.004	0.159	0.155
Number of City					384

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); consent given (basis for search); and LAPD (local law enforcement agency).

TABLE B19

Yield rates, relative to those of omitted categories, resulting from traffic stops by CHP

	Traffic- CHP				
	(1)	(2)	(3)	(4)	(5)
VARIABLES	Yield	Yield	Yield	Yield	Yield
Black	-0.010	-0.012*	-0.013**	-0.018***	-0.006
	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)
Latino	-0.037***	-0.041***	-0.042***	-0.028***	-0.015***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Asian	-0.054***	-0.056***	-0.057***	-0.043***	-0.030***
	(0.009)	(0.009)	(0.009)	(0.007)	(0.008)
Middle Eastern/South Asian	-0.040***	-0.044***	-0.045***	-0.041***	-0.021***
	(0.011)	(0.011)	(0.011)	(0.009)	(0.008)
Native American	0.013	0.012	0.013	0.022	0.005
	(0.028)	(0.028)	(0.028)	(0.026)	(0.029)
Pacific Islander	-0.025	-0.025	-0.026	-0.002	0.010
	(0.022)	(0.022)	(0.022)	(0.020)	(0.020)
Multi Race/Ethnicity	0.023	0.026	0.027	0.004	0.007
	(0.022)	(0.023)	(0.023)	(0.019)	(0.022)
Female		-0.026***	-0.026***	-0.019***	-0.019***
		(0.004)	(0.004)	(0.004)	(0.004)
Transgender Man		-0.051	-0.052	-0.026	0.015
		(0.092)	(0.092)	(0.070)	(0.088)
Transgender Woman		-0.144***	-0.148***	-0.096***	-0.092*
		(0.027)	(0.027)	(0.023)	(0.051)
LGBT		-0.022	-0.021	-0.004	0.002
		(0.015)	(0.015)	(0.014)	(0.014)
Ages 15-17		0.153	0.155	0.127	0.108
		(0.096)	(0.096)	(0.120)	(0.107)
Ages 18-24		0.020	0.022	0.057	0.045
		(0.092)	(0.092)	(0.117)	(0.109)
Ages 25-34		0.014	0.016	0.062	0.050
		(0.092)	(0.092)	(0.117)	(0.108)
Ages 35-44		0.024	0.026	0.073	0.060
		(0.092)	(0.092)	(0.117)	(0.108)
Ages 45-54		0.013	0.015	0.064	0.050
		(0.092)	(0.092)	(0.117)	(0.109)
Ages 55-64		0.004	0.006	0.056	0.040
		(0.092)	(0.092)	(0.117)	(0.109)
Ages 65+		-0.039	-0.036	0.024	0.003
		(0.092)	(0.092)	(0.118)	(0.109)
Limited English Proficiency		-0.011*	-0.010	-0.010*	-0.014**
		(0.006)	(0.006)	(0.006)	(0.006)
Disability: Deafness		-0.033	-0.032	-0.022	-0.030
		(0.075)	(0.074)	(0.064)	(0.060)
Disability: Speech		-0.134***	-0.136***	-0.093***	-0.106***

		(0.006)	(0.006)	(0.006)	(0.006)
Disability: Blindness		0.164	0.168	0.194	0.191
		(0.218)	(0.223)	(0.218)	(0.225)
Disability: Mental Health		-0.039	-0.032	-0.016	-0.018
		(0.031)	(0.031)	(0.026)	(0.022)
Disability: Development		-0.014	-0.010	-0.008	-0.015
		(0.072)	(0.073)	(0.077)	(0.079)
Disability: Hyperactivity		-0.011	-0.008	-0.017	-0.028
		(0.040)	(0.040)	(0.033)	(0.036)
Disability: Other		0.050	0.053	-0.018	-0.008
		(0.095)	(0.094)	(0.067)	(0.062)
Call for Service			-0.024***	-0.002	-0.010
			(0.006)	(0.006)	(0.007)
Basis for Search: Officer Safety				-0.056**	-0.058**
				(0.025)	(0.029)
BfS: Search Warrant				-0.068	-0.034
				(0.058)	(0.058)
BfS: Parole/Probation				-0.010	-0.009
				(0.049)	(0.048)
BfS: Suspect Weapon				0.174***	0.169***
				(0.042)	(0.046)
BfS: Visible Contraband				0.698***	0.690***
				(0.039)	(0.039)
BfS: Odor of Contraband				0.671***	0.645***
				(0.032)	(0.035)
BfS: Canine Detect				0.440***	0.439***
				(0.040)	(0.045)
BfS: Evidence				0.687***	0.676***
				(0.031)	(0.036)
BfS: Incident				-0.051**	-0.039
				(0.024)	(0.029)
BfS: Exigent Circumstances				0.220***	0.226***
				(0.068)	(0.077)
BfS: Vehicle Inventory				0.130***	0.134***
				(0.027)	(0.032)
Constant	0.128***	0.121	0.121	0.080	0.074
	(0.003)	(0.092)	(0.092)	(0.120)	(0.111)
Observations	30,666	30,666	30,666	30,666	30,666
R-squared	0.004	0.007	0.008	0.210	0.190
Number of City					445

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); consent given (basis for search).

TABLE B20

Booking rates, relative to those of omitted categories, resulting from traffic stops by local law enforcement

	Traffic - Local Law Enforcement				
VARIABLES	(21) Booking	(22) Booking	(23) Booking	(24) Booking	(25) Booking
Black	0.010***	0.008***	0.008***	0.001**	0.002*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Latino	0.011***	0.007***	0.007***	0.005***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Asian	-0.015***	-0.015***	-0.015***	-0.012***	-0.011***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Middle Eastern/South Asian	-0.016***	-0.019***	-0.019***	-0.014***	-0.012***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Native American	0.006	0.007	0.008	0.007	0.006
	(0.004)	(0.006)	(0.006)	(0.005)	(0.006)
Pacific Islander	0.004*	0.002	0.002	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Multi Race/Ethnicity	0.010***	0.007***	0.007***	0.003**	0.000
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Female		-0.018***	-0.018***	-0.011***	-0.011***
		(0.000)	(0.000)	(0.000)	(0.001)
Transgender Man		-0.015***	-0.015***	-0.014***	-0.007
		(0.006)	(0.006)	(0.005)	(0.005)
Transgender Woman		0.002	0.002	-0.001	0.004
		(0.009)	(0.009)	(0.009)	(0.008)
Gender Nonconforming		0.004	0.003	0.003	0.002
		(0.007)	(0.007)	(0.007)	(0.014)
LGBT		0.013***	0.013***	0.012***	0.010***
		(0.002)	(0.002)	(0.002)	(0.004)
Ages 15-17		0.005	0.005	-0.005	-0.003
		(0.004)	(0.004)	(0.004)	(0.004)
Ages 18-24		-0.002	-0.000	-0.003	-0.002
		(0.003)	(0.003)	(0.003)	(0.003)
Ages 25-34		0.008**	0.010***	0.009***	0.010***
		(0.003)	(0.003)	(0.003)	(0.004)
Ages 35-44		0.008**	0.009***	0.010***	0.011***
		(0.003)	(0.003)	(0.003)	(0.003)
Ages 45-54		0.002	0.003	0.006*	0.007**
		(0.003)	(0.003)	(0.003)	(0.003)
Ages 55-64		-0.004	-0.003	0.002	0.003
		(0.003)	(0.003)	(0.003)	(0.003)
Ages 65+		-0.014***	-0.012***	-0.006*	-0.004
		(0.003)	(0.003)	(0.003)	(0.003)
Limited English Proficiency		0.013***	0.011***	0.012***	0.016***
		(0.001)	(0.001)	(0.001)	(0.003)
Disability: Deafness		0.003	0.002	-0.002	-0.002

	(0.005)	(0.005)	(0.005)	(0.008)
Disability: Speech	0.015**	0.013**	0.011*	0.009
	(0.006)	(0.006)	(0.006)	(0.006)
Disability: Blindness	0.086***	0.082***	0.074***	0.071***
	(0.020)	(0.020)	(0.019)	(0.016)
Disability: Mental Health	0.097***	0.078***	0.070***	0.071***
	(0.010)	(0.010)	(0.010)	(0.023)
Disability: Development	-0.001	-0.004	-0.003	-0.005
	(0.011)	(0.011)	(0.010)	(0.009)
Disability: Other	0.050***	0.045***	0.035***	0.036***
	(0.006)	(0.006)	(0.006)	(0.008)
Disability: Multiple	-0.018**	-0.019**	-0.015*	-0.008
	(0.009)	(0.009)	(0.008)	(0.012)
Call for Service		0.138***	0.127***	0.127***
		(0.004)	(0.003)	(0.010)
Unconditional Hit Rate: Weapon			0.377***	0.375***
			(0.007)	(0.019)
Unconditional Hit Rate: Property			0.404***	0.405***
			(0.010)	(0.049)
Unconditional Hit Rate: Drug			0.299***	0.292***
			(0.003)	(0.057)
Unconditional Hit Rate: Other			0.138***	0.140***
			(0.005)	(0.039)
Los Angeles County Sheriff				0.066**
				(0.026)
Riverside County Sheriff				0.052
				(0.032)
San Bernardino County Sheriff				0.066**
				(0.033)
San Diego County Sheriff				0.068**
				(0.031)
San Diego PD				0.077**
				(0.031)
San Francisco PD				-0.014
				(0.012)
Fresno PD				0.919***
				(0.027)
Long Beach PD				0.018
				(0.023)
Oakland PD				0.019
				(0.023)
Orange County Sheriff				0.052*
				(0.030)
Sacramento County Sheriff				0.083**
				(0.033)
Sacramento PD				0.064*

					(0.034)
San Jose PD					0.160***
					(0.049)
Constant	0.025***	0.028***	0.025***	0.015***	-0.048***
	(0.000)	(0.003)	(0.003)	(0.003)	(0.014)
Observations	1,233,346	1,233,346	1,233,346	1,233,346	1,233,346
R-squared	0.002	0.007	0.013	0.137	0.135
Number of City					518

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.

NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability); and LAPD (local law enforcement agency).

TABLE B21

Booking rates, relative to those of omitted categories, resulting from traffic stops by CHP

	Traffic - CHP Only				
VARIABLES	(21) Booking	(22) Booking	(23) Booking	(24) Booking	(25) Booking
Black	0.009***	0.007***	0.007***	0.007***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Latino	0.014***	0.009***	0.010***	0.010***	0.010***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Asian	-0.007***	-0.010***	-0.009***	-0.008***	-0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Middle Eastern/South Asian	-0.013***	-0.017***	-0.017***	-0.015***	-0.014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Native American	0.048***	0.048***	0.047***	0.044***	0.045***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Pacific Islander	0.010***	0.008***	0.009***	0.009***	0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Multi Race/Ethnicity	0.005***	0.000	0.000	-0.000	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Female		-0.010***	-0.010***	-0.009***	-0.010***
		(0.000)	(0.000)	(0.000)	(0.001)
Transgender Man		0.035	0.037	0.039	0.042**
		(0.024)	(0.024)	(0.024)	(0.016)
Transgender Woman		0.189**	0.193**	0.197**	0.194***
		(0.090)	(0.090)	(0.090)	(0.062)
LGBT		0.057***	0.055***	0.053***	0.052***
		(0.003)	(0.003)	(0.003)	(0.007)
Ages 15-17		-0.040***	-0.024**	-0.027**	-0.027
		(0.012)	(0.012)	(0.012)	(0.020)
Ages 18-24		-0.030***	-0.013	-0.014	-0.014
		(0.011)	(0.012)	(0.012)	(0.020)
Ages 25-34		-0.029**	-0.011	-0.012	-0.011
		(0.011)	(0.012)	(0.012)	(0.020)
Ages 35-44		-0.040***	-0.022*	-0.023*	-0.021
		(0.011)	(0.012)	(0.012)	(0.020)
Ages 45-54		-0.047***	-0.030**	-0.030**	-0.027
		(0.011)	(0.012)	(0.012)	(0.020)
Ages 55-64		-0.049***	-0.032***	-0.032***	-0.028
		(0.011)	(0.012)	(0.012)	(0.020)
Ages 65+		-0.054***	-0.036***	-0.036***	-0.032
		(0.011)	(0.012)	(0.012)	(0.020)
Limited English Proficiency		0.020***	0.018***	0.017***	0.020***
		(0.001)	(0.001)	(0.001)	(0.005)
Disability: Deafness		0.025**	0.021*	0.022*	0.020*
		(0.012)	(0.012)	(0.012)	(0.011)
Disability: Speech		-0.018**	-0.017*	-0.027**	-0.027**

		(0.009)	(0.009)	(0.011)	(0.013)
Disability: Blindness		0.110**	0.100**	0.087*	0.084
		(0.047)	(0.046)	(0.046)	(0.052)
Disability: Mental Health		0.154***	0.087***	0.074***	0.068**
		(0.021)	(0.022)	(0.022)	(0.028)
Disability: Development		0.047**	0.022	0.019	0.017
		(0.022)	(0.022)	(0.021)	(0.020)
Disability: Other		0.106***	0.084***	0.069***	0.065***
		(0.012)	(0.012)	(0.012)	(0.013)
Disability: Multiple		0.066***	0.040*	0.034	0.030
		(0.023)	(0.025)	(0.025)	(0.029)
Call for Service			0.290***	0.278***	0.277***
			(0.004)	(0.004)	(0.024)
Unconditional Hit Rate: Weapon				0.418***	0.415***
				(0.019)	(0.021)
Unconditional Hit Rate: Property				0.311***	0.310***
				(0.026)	(0.030)
Unconditional Hit Rate: Drug				0.535***	0.531***
				(0.008)	(0.015)
Unconditional Hit Rate: Other				0.445***	0.442***
				(0.015)	(0.028)
Constant	0.025***	0.067***	0.048***	0.047***	0.045**
	(0.000)	(0.011)	(0.012)	(0.012)	(0.020)
Observations	2,161,046	2,161,046	2,161,046	2,161,046	2,161,046
R-squared	0.003	0.007	0.021	0.051	0.051
Number of City					531

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author regression results using California Department of Justice, Racial and Identity Profiling Act (RIPA) Wave 2 data, 2019.
NOTES: Omitted dummy variables (in each category) are: white (race/ethnicity); male (gender); 1 -14 (age group); none (disability).

Appendix C. Veil of Darkness Regression Results

Table C1

Testing the Veil of Darkness (VOD) theory, OLS Regression results, share of people of color (POC) stopped for a traffic violation.

	Local LEAs		CHP	
VARIABLES	(1)	(2)	(1)	(2)
	POC (Black and Latino Drivers)			
Light_Dark	0.044***	0.031***	-0.002	-0.006
	(0.006)	(0.006)	(0.005)	(0.004)
Dark_Light	0.016**	0.007	0.003	0.001
	(0.007)	(0.007)	(0.006)	(0.006)
Post	0.003	-0.001	-0.004**	-0.004**
	(0.003)	(0.003)	(0.002)	(0.002)
Post_Light_Dark	-0.022**	-0.015*	-0.001	0.006
	(0.009)	(0.009)	(0.007)	(0.007)
Post_Dark_Light	0.015	0.019**	0.015*	0.011
	(0.010)	(0.009)	(0.008)	(0.007)
Female		-0.066***		-0.061***
		(0.003)		(0.002)
Transgender Male		0.163***		-0.585***
		(0.036)		(0.017)
Transgender Female		0.138***		-0.500***
		(0.050)		(0.064)
Nonconforming		-0.084		-0.065**
		(0.067)		(0.029)
LGBT		-0.119***		-0.040**
		(0.016)		(0.017)
Age 1-14		0.011		-0.173***
		(0.027)		(0.060)
Age 15-17		0.078***		0.059
		(0.025)		(0.059)
Age 18-24		0.027		0.051
		(0.025)		(0.059)
Age 25-34		-0.030		-0.001
		(0.025)		(0.059)
Age 35-44		-0.090***		-0.060
		(0.025)		(0.059)
Age 45-54		-0.170***		-0.182***
		(0.025)		(0.059)
Age 55-64		-0.276***		-0.306***
		(0.026)		(0.059)
LEP		0.259***		0.417***
		(0.003)		(0.002)
Disability (Deafness)		-0.022		-0.113*
		(0.035)		(0.063)
Disability (Speech)		0.115***		-0.059

		(0.036)		(0.102)
Disability (Blind)		0.147*		-0.001
		(0.081)		(0.135)
Disability (MH Condition)		-0.064		-0.190***
		(0.046)		(0.070)
Disability (Development)		-0.032		-0.086
		(0.094)		(0.104)
Disability (Other)		0.001		-0.118**
		(0.033)		(0.049)
Disability (Multiple)		-0.140		-0.160
		(0.101)		(0.103)
Call for Service		-0.005		-0.070***
		(0.011)		(0.012)
Non-Moving		0.069***		0.053***
		(0.002)		(0.002)
year = 2019	-0.022***	-0.022***	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
year = 2020	-0.006*	-0.006*	0.027***	0.026***
	(0.004)	(0.003)	(0.003)	(0.003)
Constant	0.715***	0.723***	0.563***	0.565***
	(0.003)	(0.025)	(0.002)	(0.059)
Observations	107,356	107,356	273,238	273,238
R-squared	0.001	0.075	0.001	0.069

NOTES: Estimates for linear probability models (LPM) of the likelihood the person stopped is a person of color, estimated for people of color (POC) relative to white individuals:
where *LttoDark* and *DarktoLT* are indicator variables for the relevant time period in which light conditions switch from light to dark and dark to light, respectively at the date of DST, and Post is an indicator variable equal to one for the two-week period on and after the DST switches. X represents a matrix with demographic and stop controls. We limit the sample to traffic stops two weeks pre- and post-DST switches, and to stops between 4am-8am and 4pm-8pm. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table C2

Testing the Veil of Darkness (VOD) theory, OLS Regression results, share of Black drivers stopped for a traffic violation.

	Local LEAs		CHP	
VARIABLES	(1)	(2)	(1)	(2)
	Black Drivers			
Light_Dark	0.066***	0.049***	-0.003	-0.003
	(0.010)	(0.010)	(0.005)	(0.005)
Dark_Light	0.022**	0.006	-0.004	-0.002
	(0.011)	(0.010)	(0.006)	(0.006)
Post	0.004	-0.001	0.000	0.001
	(0.004)	(0.004)	(0.002)	(0.002)
Post_Light_Dark	-0.025*	-0.020	-0.003	0.001
	(0.014)	(0.014)	(0.008)	(0.008)
Post_Dark_Light	0.014	0.019	0.002	-0.001
	(0.015)	(0.015)	(0.009)	(0.009)
Female		-0.059***		0.011***
		(0.004)		(0.002)
Transgender Male		0.141**		-0.206***
		(0.064)		(0.019)
Transgender Female		0.202***		-0.183***
		(0.074)		(0.035)
Nonconforming		-0.125		-0.078**
		(0.087)		(0.031)
LGBT		-0.110***		0.001
		(0.020)		(0.018)
Age 1-14		-0.024		-0.179**
		(0.042)		(0.072)
Age 15-17		0.061		-0.041
		(0.038)		(0.071)
Age 18-24		0.014		0.002
		(0.038)		(0.071)
Age 25-34		-0.086**		-0.045
		(0.038)		(0.071)
Age 35-44		-0.131***		-0.080
		(0.038)		(0.071)
Age 45-54		-0.162***		-0.121*
		(0.038)		(0.071)
Age 55-64		-0.236***		-0.163**
		(0.039)		(0.071)
LEP		0.096***		0.013
		(0.018)		(0.021)
Disability (Deafness)		-0.028		0.007
		(0.052)		(0.062)
Disability (Speech)		-0.112		-0.018
		(0.128)		(0.098)
Disability (Blind)		0.317**		-0.164***
		(0.127)		(0.021)
Disability (MH Condition)		0.076		-0.001

		(0.057)		(0.066)
Disability (Development)		-0.131		0.088
		(0.143)		(0.114)
Disability (Other)		0.065		-0.009
		(0.044)		(0.046)
Disability (Multiple)		-0.128		-0.169***
		(0.119)		(0.024)
Call for Service		0.020		-0.058***
		(0.018)		(0.011)
Non-Moving		0.161***		0.043***
		(0.004)		(0.002)
year = 2019	-0.027***	-0.032***	0.010***	0.010***
	(0.005)	(0.005)	(0.003)	(0.003)
year = 2020	0.003	-0.001	0.028***	0.031***
	(0.005)	(0.005)	(0.003)	(0.003)
Constant	0.439***	0.463***	0.197***	0.235***
	(0.005)	(0.038)	(0.003)	(0.071)
Observations	71,728	71,728	147,784	147,784
R-squared	0.002	0.063	0.001	0.018

NOTES: Estimates for linear probability models (LPM) of the likelihood the person stopped is a person of color, estimated for Black individuals, relative to white individuals:
where *LttoDark* and *DarktoLT* are indicator variables for the relevant time period in which light conditions switch from light to dark and dark to light, respectively at the date of DST, and Post is an indicator variable equal to one for the two-week period on and after the DST switches. X represents a matrix with demographic and stop controls. We limit the sample to traffic stops two weeks pre- and post-DST switches, and to stops between 4am-8am and 4pm-8pm. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table C3

Testing the Veil of Darkness (VOD) theory, OLS Regression results, share of Latino drivers stopped for a traffic violation.

	Local LEAs		CHP	
VARIABLES	(1)	(2)	(1)	(2)
	Latino Drivers			
Light_Dark	0.046***	0.030***	-0.001	-0.006
	(0.008)	(0.007)	(0.005)	(0.005)
Dark_Light	0.018**	0.008	0.005	0.001
	(0.008)	(0.008)	(0.006)	(0.006)
Post	0.003	-0.000	-0.006**	-0.005**
	(0.003)	(0.003)	(0.002)	(0.002)
Post_Light_Dark	-0.028**	-0.017	-0.000	0.006
	(0.011)	(0.011)	(0.008)	(0.007)
Post_Dark_Light	0.020*	0.022**	0.018**	0.015*
	(0.012)	(0.011)	(0.008)	(0.008)
Female		-0.081***		-0.082***
		(0.003)		(0.002)
Transgender Male		0.190***		-0.535***
		(0.043)		(0.018)
Transgender Female		0.123*		-0.439***
		(0.070)		(0.068)
Nonconforming		-0.083		-0.058*
		(0.075)		(0.030)
LGBT		-0.129***		-0.053***
		(0.019)		(0.018)
Age 1-14		0.032		-0.129**
		(0.034)		(0.066)
Age 15-17		0.111***		0.093
		(0.031)		(0.065)
Age 18-24		0.039		0.070
		(0.031)		(0.065)
Age 25-34		-0.014		0.018
		(0.031)		(0.065)
Age 35-44		-0.087***		-0.042
		(0.031)		(0.065)
Age 45-54		-0.194***		-0.175***
		(0.032)		(0.065)
Age 55-64		-0.296***		-0.294***
		(0.032)		(0.065)
LEP		0.345***		0.474***
		(0.004)		(0.002)
Disability (Deafness)		-0.017		-0.156**
		(0.039)		(0.062)
Disability (Speech)		0.164***		-0.063
		(0.039)		(0.103)
Disability (Blind)		0.045		0.040
		(0.118)		(0.134)
Disability (MH Condition)		-0.217***		-0.252***

		(0.059)		(0.066)
Disability (Development)		0.013		-0.162
		(0.107)		(0.107)
Disability (Other)		-0.055		-0.148***
		(0.041)		(0.047)
Disability (Multiple)		-0.179*		-0.100
		(0.106)		(0.103)
Call for Service		-0.021		-0.062***
		(0.013)		(0.012)
Non-Moving		0.043***		0.050***
		(0.003)		(0.002)
year = 2019	-0.025***	-0.022***	0.003	0.004
	(0.004)	(0.004)	(0.003)	(0.003)
year = 2020	-0.012***	-0.010**	0.024***	0.022***
	(0.004)	(0.004)	(0.003)	(0.003)
Constant	0.633***	0.638***	0.510***	0.496***
	(0.004)	(0.031)	(0.003)	(0.065)
Observations	107,356	107,356	241,927	241,927
R-squared	0.001	0.075	0.001	0.086

NOTES: Estimates for linear probability models (LPM) of the likelihood the person stopped is a person of color, estimated for Latino individuals, relative to white individuals:
where *LttoDark* and *DarktoLT* are indicator variables for the relevant time period in which light conditions switch from light to dark and dark to light, respectively at the date of DST, and Post is an indicator variable equal to one for the two-week period on and after the DST switches. X represents a matrix with demographic and stop controls. We limit the sample to traffic stops two weeks pre- and post-DST switches, and to stops between 4am-8am and 4pm-8pm. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table C4.

Testing the Veil of Darkness (VOD) theory, OLS Regression results, share of People of color stopped for a traffic violation by local law enforcement agencies.

	Local Law Enforcement					
	Non-Moving Traffic Violation			Moving Traffic Violation		
VARIABLES	POC	Black	Latino	POC	Black	Latino
Light_Dark	0.032***	0.058***	0.033**	0.046***	0.058***	0.049***
	(0.010)	(0.016)	(0.013)	(0.008)	(0.012)	(0.009)
Dark_Light	0.009	0.013	0.011	0.013	0.008	0.016
	(0.010)	(0.017)	(0.014)	(0.009)	(0.013)	(0.010)
Post	0.003	0.003	0.004	0.001	0.000	0.001
	(0.004)	(0.007)	(0.006)	(0.003)	(0.005)	(0.004)
Post_Light_Dark	-0.026*	-0.040*	-0.031	-0.021*	-0.018	-0.027*
	(0.014)	(0.023)	(0.019)	(0.012)	(0.018)	(0.014)
Post_Dark_Light	0.007	0.017	0.005	0.026**	0.022	0.031**
	(0.015)	(0.024)	(0.020)	(0.012)	(0.019)	(0.014)
year = 2019	-0.028***	-0.036***	-0.036***	-0.024***	-0.034***	-0.023***
	(0.006)	(0.009)	(0.007)	(0.004)	(0.006)	(0.005)
year = 2020	-0.011*	-0.001	-0.022***	-0.005	0.001	-0.008
	(0.006)	(0.010)	(0.008)	(0.004)	(0.006)	(0.005)
Constant	0.778***	0.565***	0.688***	0.687***	0.385***	0.611***
	(0.005)	(0.009)	(0.007)	(0.004)	(0.006)	(0.005)
Observations	46,380	24,473	32,854	92,198	47,255	74,502
R-squared	0.001	0.002	0.001	0.001	0.002	0.001

NOTES: Estimates for linear probability models (LPM) of the likelihood the person stopped is a person of color, estimated for people of color (POC) and separately for Black and Latino individuals, relative to white individuals:
where *LttoDark* and *DarktoLT* are indicator variables for the relevant time period in which light conditions switch from light to dark and dark to light, respectively at the date of DST, and Post is an indicator variable equal to one for the two-week period on and after the DST switches. X represents a matrix with demographic and stop controls. We limit the sample to traffic stops two weeks pre- and post-DST switches, and to stops between 4am-8am and 4pm-8pm. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table C5

Testing the Veil of Darkness (VOD) theory, OLS Regression results, share of People of color stopped for a traffic violation by CHP.

	CHP					
	Non-Moving Traffic Violation			Moving Traffic Violation		
VARIABLES	POC	Black	Latino	POC	Black	Latino
Light_Dark	0.002	0.008	-0.000	-0.003	-0.008	-0.001
	(0.008)	(0.010)	(0.009)	(0.006)	(0.006)	(0.006)
Dark_Light	-0.000	0.005	-0.002	0.008	-0.005	0.012
	(0.010)	(0.013)	(0.011)	(0.007)	(0.007)	(0.007)
Post	-0.001	0.003	-0.002	-0.005*	-0.000	-0.006**
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
Post_Light_Dark	-0.019	-0.025*	-0.016	0.008	0.008	0.007
	(0.013)	(0.015)	(0.014)	(0.009)	(0.009)	(0.009)
Post_Dark_Light	0.016	-0.006	0.023	0.012	0.003	0.014
	(0.014)	(0.017)	(0.015)	(0.009)	(0.010)	(0.010)
year = 2019	-0.001	0.009*	-0.005	0.009***	0.011***	0.007**
	(0.004)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)
year = 2020	0.019***	0.016***	0.020***	0.037***	0.038***	0.032***
	(0.005)	(0.006)	(0.005)	(0.003)	(0.003)	(0.004)
Constant	0.605***	0.231***	0.552***	0.539***	0.180***	0.487***
	(0.004)	(0.005)	(0.004)	(0.003)	(0.003)	(0.003)
Observations	89,789	46,164	78,639	183,449	101,620	163,288
R-squared	0.000	0.000	0.001	0.001	0.002	0.001

NOTES: Estimates for linear probability models (LPM) of the likelihood the person stopped is a person of color, estimated for people of color (POC) and separately for Black and Latino individuals, relative to white individuals:
where *LttoDark* and *DarktoLT* are indicator variables for the relevant time period in which light conditions switch from light to dark and dark to light, respectively at the date of DST, and Post is an indicator variable equal to one for the two-week period on and after the DST switches. X represents a matrix with demographic and stop controls. We limit the sample to traffic stops two weeks pre- and post-DST switches, and to stops between 4am-8am and 4pm-8pm. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1