

An Empirical Assessment of Pretextual Stops and Racial Profiling

Stephen Rushin* & Griffin Edwards**

This Article empirically illustrates that legal doctrines permitting police officers to engage in pretextual traffic stops may contribute to a statistically significant increase in racial profiling. In 1996, the U.S. Supreme Court held in Whren v. United States that pretextual traffic stops do not violate the Fourth Amendment. As long as police officers identify an objective violation of a traffic law, they may lawfully stop a motorist—even if their actual intention is to use the stop to investigate a hunch that by itself does not amount to probable cause or reasonable suspicion.

Scholars and civil rights activists have widely criticized Whren, arguing that it gives police officers permission to engage in racial profiling. But social scientists have historically struggled to develop an empirical methodology to evaluate how Whren influenced police behavior.

The State of Washington presents a unique opportunity to test the effects of pretextual stop doctrines on police behavior. In the years since the Whren decision, Washington has experimented with multiple rules that provide differing levels of protection against pretextual stops. In 1999, the Washington Supreme Court held in State v. Ladson that their state constitution barred police from conducting pretextual traffic stops. Then in 2012, the court eased this restriction on pretextual stops in State v. Arreola.

By relying on a comprehensive dataset of 8,257,527 traffic stops conducted by the Washington State Patrol from 2008 through 2015, we find that the Arreola decision is associated with a statistically significant increase in traffic stops of non-white drivers relative to white drivers. Further, we find this increase in traffic stops of non-white drivers concentrated during daytime hours, when officers can more easily ascertain a driver's race through visual observation. We also find evidence that police officers search the vehicles of non-white drivers more frequently than white drivers after Arreola.

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Combined, this data provides compelling evidence that judicial decisions like Whren and Arreola may increase the probability of racial profiling by police officers. We conclude by discussing the implications of these findings for the literature on police accountability.

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I. INTRODUCTION

In 1996, the U.S. Supreme Court held in *Whren v. United States* that pretextual traffic stops do not violate the Fourth Amendment.¹ As long as a police officer identifies an objective violation of a traffic law, the officer may lawfully stop a motorist—even if the officer’s actual intention is to use the stop to investigate a hunch that, by itself, would not amount to reasonable suspicion or probable cause.² In a unanimous decision, the Court concluded

¹ 517 U.S. 806, 819 (1996) (“Here, the District found that the officer had probable cause to believe that petitioners violated the traffic code ... [which] rendered the stop reasonable under the Fourth Amendment...”).

² *Id.* at 812-13 (describing how the Court has previously considered the importance of subjective and objective justifications in evaluating police behavior under the Fourth Amendment).

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that an officer’s “subjective intentions play no role in ordinary, probable-cause Fourth Amendment analysis.”³

The scholarly response to *Whren* has been “overwhelmingly critical.”⁴ Modern traffic codes “regulate the details of driving in ways both big and small, obvious and arcane.”⁵ If an officer follows any motorist long enough, they will eventually violate *some* traffic law, making “any citizen fair game for a traffic stop almost anytime, anywhere, virtually at the whim

³ *Id.* at 813.

⁴ Gabriel J. Chin & Charles J. Vernon, *Reasonable but Unconstitutional: Racial Profiling and the Radical Objectivity of Whren v. United States*, 83 GEO. WASH. L. REV. 882, 884 n.2, 886 (2014) (listing many existing studies supporting the proposition that *Whren* is “notorious for its effective legalization of racial profiling in the United States.”). *See also* David A. Sklansky, *Traffic Stops, Minority Motorists, and the Future of the Fourth Amendment*, 1997 SUP. CT. REV. 271, 274 (summarizing *Whren* and providing contemporary context on the importance of the decision, and also noting that the *Whren* decision illustrated a “systematic disregard for the distinctive concerns of racial minorities”); David A. Harris, “*Driving While Black*” and *All Other Traffic Offenses: The Supreme Court and Pretextual Traffic Stops*, 87 J. CRIM. L. & CRIMINOLOGY 544, 545 (1997) (recognizing that while the *Whren* decision “makes some sense from the point of view of judicial administration,” it ultimately could provide “profoundly dangerous” to the development of a “free society, especially one dedicated to the equal treatment of all citizens” because it will allow for police to “use the traffic code to stop a hugely disproportionate number of African Americans and Hispanics.”); Tracey Maclin, *Race and the Fourth Amendment*, 51 VAND. L. REV. 333, 342-44 (1998) (presenting evidence about the possible link between pretextual stops and racial bias); Andrew D. Leipold, *Objective Tests and Subjective Bias: Problems of Discriminatory Intent in the Criminal Law*, 73 CHI.-KENT. L. REV. 559, 565-72 (1998) (hypothesizing how *Whren* may cause racial profiling, providing examples, and theorizing on how existing law may make it difficult for victims of racial profiling to succeed in any challenge); Anthony C. Thompson, *Stopping the Usual Suspects: Race and the Fourth Amendment*, 74 N.Y.U. L. REV. 956 (1999) (tracing the way that the Court has attempted to remove race from its consideration of Fourth Amendment issues and arguing that social science data suggests that racially neutral searches may still involve police relying on racial judgments); Tracey Maclin, *Cops and Cars: How the Automobile Drove Fourth Amendment Law*, 99 B.U. L. REV. 2317, 2347-49 (2019) (providing a useful review of Professor Sara A. Seo’s new book on the Fourth Amendment and the American automobile, and in doing so also discussing the impact of *Whren* on police behavior); *see generally* SARA SEO, *POLICING THE OPEN ROAD: HOW CARS TRANSFORMED AMERICAN FREEDOM* (2019) (providing a comprehensive review of how the ubiquity of automobiles in the United States has transformed policing tactics and the law, and also emphasizing the importance of *Whren*).

⁵ Harris, *supra* note 4, at 545.

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of police.”⁶ Ample historical evidence suggests that when given this type of unfettered discretion, police officers will use it in a way that disproportionately targets motorists of color.⁷ And given the high bar that litigants must clear in order to prevail on a selective enforcement claim under the Equal Protection Clause of the Fourteenth or Fifth Amendments, the *Whren* decision left individuals of color with few remedies for the discriminatory use of pretextual stops.⁸ Thus, scholars and activists have long worried that by allowing officers to engage in pretextual stops, *Whren* contributed to widespread and unchecked racial profiling⁹ by American police officers.¹⁰

⁶ *Id.*; see also David A. Moran, *The New Fourth Amendment Vehicle Doctrine: Stop and Search Any Car at Any Time*, 47 VILL. L. REV. 815, 831 (2002) (“Take any minor traffic or equipment violation, add a pretextual stop and a custodial arrest for the minor traffic violation, and *voilà*, you get a lawful search of the automobile.”).

⁷ Maclin, *supra* note 4, at 342-44. Indeed, as previous courts have argued, inherent to the use of pretextual stops is the risk that “police officers will use the pretext of a traffic violations or other minor infractions to harass [groups based on their] race or ethnic origin, or simply appearance that some officers do not like....” *United States v. Scopo*, 19 F.3d 777, 785-786 (2d Cir. 1994) (Newman, J., concurring).

⁸ Angela J. Davis, *Race Cops, and Traffic Stops*, 51 U. MIAMI L. REV. 425, 427 (1997) (“The *Whren* Court left African-Americans and Latinos without an effective remedy for discriminatory pretextual traffic stops when it suggested the Equal Protection Clause as the appropriate constitutional basis for challenging these stops.”); Pamela S. Karlan, *Race, Rights, and Remedies in Criminal Adjudication*, 96 MICH. L. REV. 2001, 2010 (1998) (“As far as I can tell, with the exception of two New Jersey state court cases that antedate *Whren*, there are no reported cases in which suppression was the remedy for racially selective enforcement. And prior to *Whren*, the doctrinal handle for the suppression was the Fourth Amendment: the seizures were unreasonable because they were unconstitutional.”); Wesley MacNeil Oliver, *With an Evil Eye and an Unequal Hand: Pretextual Stops and Doctrinal Remedies to Racial Profiling*, 74 TUL. L. REV. 1409 (1999-2000) (discussing a related issue of remedies to racial profiling—how the failure to correct patterns of racial bias in the face of a DOJ consent decree should potentially lead to evidentiary exclusion according to the study’s author).

⁹ We adopt the definition of racial profiling used by Samuel R. Gross & Debra Livingston, *Racial Profiling Under Attack*, 102 COLUM. L. REV. 1413, 1415 (2002) (describing racial profiling as when an officer stops, questions, arrests, searches, or takes some other coercive action because the officer is operating under the belief that a person’s racial or ethnic group makes them more likely than the community at large to commit that kind of offense under investigation).

¹⁰ See *infra* Part I.B. and Part II (describing scholarly criticism of *Whren* and the existing literature on this topic). In fact, the U.S. Department of Justice was so concerned about the link between pretextual stops and racial profiling that it explicitly barred the Ferguson Police Department from engaging in pretextual stops

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Despite this common concern about the link between racial profiling and pretextual stops, no academic study to date has empirically evaluated the effect of *Whren* (or similar state cases) on law enforcement behavior.¹¹ This is not because of a shortage of scholarly interest, but because of limited data on police behavior and a lack of jurisdictional variations in pretextual stop policies.¹² While many studies have found evidence of police officers engaging in racially biased behavior,¹³ no existing studies have been able to empirically link pretextual stop doctrines like *Whren* to subsequent patterns of racial profiling.¹⁴

Through a novel analysis of a newly available dataset, this Article is the first to illustrate empirically that judicial doctrines permitting police officers to engage in pretextual traffic stops may contribute to a statistically

as part of a broader federal consent decree. Consent Decree at 20, *United States v. City of Ferguson*, No. 4:16-cv-00180 (E.D. Mo. Mar. 17, 2016) (stating that “officers will not conduct pretextual stops except where the actual reason for the stop is to investigate a felony”).

¹¹ Searches of Google Scholar, Westlaw, and Lexis produced no study that attempted to tackle this empirical question; but these searches produced dozens of empirical studies about the presence of racial profiling in individual agencies or states, often with hypotheses that this profiling was in part the rest of laws permitting pretextual stops. For more information on the existing literature, see Part III.

¹² As explained more *infra* Part III, an ideal empirical assessment of the link between pretextual stops and racial profiling would require some court or legislature to issue a new rule related to pretextual stops that—to use the language of economics—served as an “exogenous shock” by unexpectedly overturning an existing rule or regulation on the topic. Provided that jurisdiction kept sufficient data (including the race of those targeted for traffic enforcement) before and after this exogenous shock, researchers could use this data to evaluate whether the introduction of this new legal rule resulted in any corresponding changes in police behaviors. Unfortunately, the *Whren* decision did not present any obvious opportunities for such a controlled experiment. *Whren* did not overrule any state or circuit opinion. Before *Whren*, it seems that most police departments operated under the assumption that pretextual stops were lawful under the Fourth Amendment, and *Whren* validated this assumption. Further, at the time of the *Whren* decision, very few police departments kept data, including the race of those stopped by police for traffic infractions.

¹³ See *infra* Part II (describing the existing literature, which finds racial profiling to be common among American police departments, but fails to link this profiling specifically to court decisions like *Whren*).

¹⁴ Prior studies have acknowledged that data on this proposition has proven “hard to come by . . .” See, e.g., Leipold, *supra* note 4, at 565; David Rudovsky, *Law Enforcement by Stereotypes and Serendipity: Racial Profiling and Stops and Searches Without Probable Cause*, 3 U. PA. J. CONST. L. 296, 304 (2001) (“The failure of most law enforcement agencies to collect and analyze data concerning car and pedestrian stops, or to conduct comprehensive reviews of the legality of stops and searches . . . has undermined efforts to make sound empirical judgements.”).

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significant increase in racial profiling of minority drivers.¹⁵ We focus our analysis on a series of legal events in the State of Washington that present a rare opportunity to analyze the effects of pretextual stops on police behavior. After the U.S. Supreme Court issued *Whren* in 1996, Washington experimented with multiple rules that provided differing levels of protections against pretextual stops.¹⁶ In 1999, the Washington Supreme Court held in *State v. Ladson* that their state constitution barred police from conducting pretextual traffic stops.¹⁷ Then in 2012, the Washington Supreme Court changed course in *State v. Arreola*, concluding that officers could conduct “mixed-motive traffic stops,” effectively legalizing the use of tactics akin to pretextual traffic stops.¹⁸ This means that between 1999 and 2012, Washington effectively barred the use of pretextual stops. And since 2012, the state has narrowed the definition of pretextual stops so substantially as to more closely mirror the holding in *Whren*.¹⁹

¹⁵ As best we can tell, the only other study to come close to this type of claim is CHARLES R. EPP, STEVEN MAYNARD-MOODY, & DONALD P. HAIDER-MARKEL, *PULLED OVER: HOW POLICE STOPS DEFINE RACE AND CITIZENSHIP* 14, 66 (2014). In that book, the authors distinguish between two different style of traffic enforcement—one that focuses specifically on the response to traffic violations, and another investigatory mode of enforcement focused on using traffic stops as pretexts for other types of criminal investigations. They found that when police are involved in “investigatory stops” the most important factor in who they stop is often the race and gender of the car’s occupants (Black young men were seemingly the most likely targets of investigatory stops). See also *Book Review: Keeping Track: Surveillance Control, and the Expansion of the Carceral State*, 129 HARV. L. REV. 1318, 1324-45 (2016). Nevertheless, that impressive book was not able to isolate the effect of changes in pretext stop doctrines on subsequent behavior by police behavior. Thus, to the best of our estimation—and as described in more detail in Part III—we believe we are the first to conduct this kind of study.

¹⁶ See *infra* Part II.C.1-2 (describing how Washington moved from permitting pretextual stops after *Whren*, to outlawing their use after *Ladson*, to presumptively allowing something akin to pretextual stops after *Arreola*).

¹⁷ 979 P.2d 833, 842 (Wash. 1999) (“We conclude the citizens of Washington have held, and are entitled to hold, a constitutionally protected interest against warrantless traffic stops or seizures on a mere pretext to dispense with the warrant when the true reason for the seizure is not exempt from the warrant requirement.”).

¹⁸ 290 P.3d 983, 991 (Wash. 2012) (defining a “mixed-motive” stop as one where an officer has two separate, independent justifications for a traffic stop—one that gives the officer the legal justification to conduct a traffic stop and one that does not—and ultimately concluding that such mixed-motive stops do “not violate article I, section 7 so long as the police officer making the stop exercises discretion appropriately.”).

¹⁹ As discussed in more detail *infra* Part II.C.2, the majority in *Arreola* believed that it had created a new type of stop distinguishable from pretextual stops

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We draw on a comprehensive dataset of 8,257,527 traffic stops conducted by the Washington State Patrol between 2008 and 2015 to examine the effect of *Arreola* on police behavior.²⁰ The Washington State Patrol employs around 1,100 state troopers who are primarily responsible for enforcing traffic laws on highways throughout the state.²¹ By employing a difference-in-differences framework, we find that *Arreola* was associated with a statistically significant increase in traffic stops and searches of non-white drivers relative to white drivers.²² In the years after the Washington Supreme Court loosened its regulation of pretextual traffic stops, the number of stops of non-white drivers increased by around 120 per county per month relative to white drivers, and the number of searches of non-white drivers' vehicles incident to traffic stops increased by around 13 per county per month relative to white drivers.²³ To further bolster our analysis, we use a triple-difference framework to observe the effect of daylight on officer behavior before and after *Arreola*.²⁴ We find that most of the increase in traffic stop of non-white drivers after *Arreola* occurred during the daytime, when police officers could more easily ascertain a driver's race.²⁵ This increase in traffic stops of non-white drivers during the daytime hours is also statistically significant.²⁶ We find no corresponding increase in traffic stops of non-white drivers at night.²⁷ All of this is consistent with the hypothesis that judicial approval of pretextual stops contributes to racial profiling.

permitted by *Whren* by barred by *Ladson*. We take the view that even if the conduct permitted by *Arreola* is technically narrower than that permitted by *Whren*, it still represents a substantial increase in discretionary authority given to Washington police officers. We also recognize the concerns expressed by the dissent in *Arreola*, which does "not believe the spirit of *Ladson* will survive the court's opinion" because police are now free to "stop citizens *primarily* to conduct an unconstitutional speculative investigation as long as they can claim there was an independent secondary reason for the seizure." *Id.* at 993.

²⁰ See *infra* Part IV (describing the dataset and methodology).

²¹ *About Us*, WASHINGTON STATE PATROL, <https://www.wsp.wa.gov/about-us/#1502830433094-155cfec9-4473> (describing the number of commissioned and budgeted employees working for the Washington State Patrol and stating that there are around 1,100 commissioned employees and 1,100 civilian employees who handle approximately 3,092 contacts per day and around 1,128,642 contacts per year across the state's 39 counties).

²² See *infra* Part IV.B (providing the regression outputs for these results).

²³ *Id.*

²⁴ See *infra* part IV.C (providing the regression outputs for these results focusing specifically on the relationship between daylight and police behavior).

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

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Our findings have important implications for the study of policing and criminal procedure. Primarily, our findings are consistent with one of the most commonly levied critiques of the *Whren* decision. If the Washington Supreme Court's decision in *Arreola*, with its somewhat narrower holding than *Whren*, has contributed to a statistically significant increase in the targeting of non-white drivers, then *Whren* may have had the same result on police departments all across the country. This increased targeting of drivers of color via pretextual stops is important, as even routine traffic stops can escalate to more serious encounters involving the use of force, searches, and other coercive police actions. More fundamentally, our findings suggest that legal rules granting police officers increased discretionary authority may create risks of unequal enforcement. This realization provides ammunition for scholarly proposals to decouple criminal investigations from traffic enforcement. It may also strengthen calls for the integration of technology in traffic enforcement, so as to limit police discretion.

This Article proceeds in four parts. Part I summarizes the history of judicial regulation of pretextual stops, with a particular focus on the scholarly criticisms of *Whren* and the series of judicial regulations of pretextual stops in Washington. Part II evaluates the existing literature on the relationship between pretextual stops and racial profiling. Part III then walks through the methodology and results of our difference-in-differences and triple difference frameworks. Then, in Part IV, we consider the implications of our findings.

II. THE FOURTH AMENDMENT AND PRETEXTUAL STOPS

The Fourth Amendment generally protects against unreasonable searches and seizures by the government.²⁸ Police conduct is typically considered a seizure for Fourth Amendment purposes if, under a totality of the circumstances, a police officer restrains a person's freedom of movement either through the use of force or through some show of authority.²⁹ Traffic

²⁸ U.S. Const. amend. IV states:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

²⁹ Margaret Lawton, *The Road to Whren and Beyond: Does the "Would Have" Test Work?* 57 DEPAUL L. REV. 917, 920 (2008); *Brendalin v. California*, 551 U.S. 249, 254 (2007) ("A person is seized by the police and thus entitled to challenge the government's action under the Fourth Amendment when the officer, 'by means

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stops entail a seizure of a driver “even though the purpose of the stop is limited and the resulting detention is quite brief.”³⁰ A traffic stop is ordinarily considered reasonable for Fourth Amendment purposes when a police officer witnesses a traffic infraction and thus has probable cause to believe a traffic infraction has occurred³¹ or if a police officer has reasonable suspicion of an ongoing criminal act based on articulable facts to justify the stop.³² As Professor Margaret M. Lawton has explained, in the years leading up to the *Whren* decision, federal circuits were split on whether pretextual traffic stops complied with the Fourth Amendment.³³ This circuit split “set the stage for *Whren*.”³⁴

A. *Whren v. United States*

On June 10, 1993, police officers were patrolling a “high drug area” in Washington D.C. when they observed two young black men allegedly driving a vehicle in a manner that aroused their suspicions.³⁵ The vehicle sat at a stop sign for “what seemed like an unusually long time—more than 20 seconds.”³⁶ The officers also observed one of the youthful occupants of the car looking at the lap of the passenger in the vehicle.³⁷ When the police car

of physical force or show of authority’ terminates or restraints his freedom of movement...” (quoting *Florida v. Bostick*, 501 U.S. 429, 434 (1991)).

³⁰ *Delaware v. Prouse*, 440 U.S. 648, 653 (1979).

³¹ *Id.* at 659; *see also Whren v. United States*, 517 U.S. 810 (1996) (“As a general matter, the decision to stop an automobile is reasonable where the police have probable cause to believe that a traffic violation has occurred.”).

³² Wayne LaFave, *The “Routine Traffic Stop” from Start to Finish: Too Much “Routine,” Not Enough Fourth Amendment*, 102 MICH. L. REV. 1843, 1846, 1848 (2004) (noting that most states believe that reasonable suspicion is sufficient to justify a traffic stop); *see also* GROUNDS FOR STOP, 4 SEARCH & SEIZURE § 9.3(a) (5th ed.) (“Most courts have assumed the latter, i.e., that traffic stops as a class are permissible without probable cause if there exists reasonable suspicion, that is, merely equivocal evidence. Such an assumption is to be found in the federal court decisions of the various circuits, as well as in the decisions of most states.” (internal citations omitted)).

³³ Lawton, *supra* note 29, at 922-23 (explaining that most circuits had concluded that pretextual traffic stops did not violate the Fourth Amendment provided there was some objective justification for the stop, but noting that the Ninth and Eleventh Circuits adopting more stringent tests, and the Tenth Circuit briefly adopting a reasonableness test before backtracking after finding that the test was “unworkable” and led to “inconsistent” results).

³⁴ *Id.* at 923.

³⁵ 517 U.S. 806 (1996).

³⁶ *Id.* at 808.

³⁷ *Id.*

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made a U-turn to further investigate, the vehicle allegedly made a sudden right turn without signaling and drove away at an “unreasonable” speed.³⁸

The officers then pursued the vehicle for a short time before executing a traffic stop.³⁹ One officer observed two large plastic bags of crack cocaine in Michael Whren’s hands, who sat in the passenger side of the vehicle.⁴⁰ The officers arrested Whren and the car’s driver, James L. Brown.⁴¹ In a search of the vehicle incident to the arrests, they uncovered additional drugs.⁴² Whren and Brown then faced multiple drug related charges.⁴³ They challenged the admissibility of the drug evidence by arguing at a pretrial suppression hearing that the officers lacked probable cause or reasonable suspicion to conduct the original traffic stop.⁴⁴ While the officers admitted that they were suspicious that the vehicle’s occupants were engaged in some unlawful behavior, they maintained that the stop was objectively reasonable.⁴⁵ Regardless of their subjective intentions, the officers had an objectively reasonable basis on which to conduct a traffic stop because they observed the vehicle fail to signal when it turned and drive at an unreasonable speed.⁴⁶

In response, Whren and Brown argued that this apparently objective justification for the traffic stop was pretextual, and thus impermissible under the Fourth Amendment.⁴⁷ The actual reason that the officers pursued and stopped his vehicle was to investigate an unsubstantiated hunch.⁴⁸ The officers lacked reasonable suspicion or probable cause to stop his vehicle

³⁸ *Id.*

³⁹ It is worth noting that the circumstances leading up to the traffic stop made it a bit unusual. The officers did not conduct an ordinary traffic stop, but instead followed the car for a period of time before pulling up beside it at a red light. One officer then walked up to the side of the vehicle and asked for the driver to put the car in park. This is when he observed the drugs and made the arrests. This effectively operated as a traffic stop for Fourth Amendment purposes, even if the circumstances were a bit unusual. *Id.* at 808-09.

⁴⁰ *Id.* at 809.

⁴¹ *Id.*

⁴² *Id.*

⁴³ Specifically, they “were charged in a four-count indictment with violating various federal drug laws, including 21 U.S.C. §§844(a) and 860(a).” *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.* at 810 (explaining how they argued that “in the unique context of civil traffic regulations’ probable cause is not enough. Since, they contend, the use of automobiles is so heavily and minutely regulated that total compliance with traffic and safety rules is nearly impossible, a police officer will almost invariably be able to catch any given motorist in a technical violation.”).

⁴⁸ *Id.*

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based on this hunch alone.⁴⁹ Instead, Whren and Brown argued, the officers impermissibly relied on a pretextual justification.⁵⁰ The petitioners also emphasized that the scope of the traffic code was so broad that, by following any driver long enough, a police officer could “invariably” identify some “technical violation” that could objectively justify a stop.⁵¹ Further, the petitioners believed that allowing officers to engage in pretextual stops would mean that officers “might decide which motorists to stop based on impermissible factors, such as the race of the car’s occupants.”⁵²

In a unanimous decision, the U.S. Supreme Court held that pretextual stops do not violate the Fourth Amendment.⁵³ Since Whren and Brown conceded that the officers had probable cause to believe that their vehicle engaged in traffic code violations, the core of the Court’s analysis came down to whether the apparently pretextual nature of the stop turned an otherwise constitutional seizure into a violation of the Fourth Amendment. By walking through a series of major Fourth Amendment cases, the Court rejected the petitioner’s argument that the “constitutional reasonableness of traffic stops depend[] on the actual motivations of the individual officers involved.”⁵⁴ Further, the Court rejected the petitioner’s claim that the expansiveness of modern traffic codes meant that an objective test would give police officers unreasonably expansive authority, explaining:

... we are aware of no principle that would allow us to decide at what point a code of law becomes so expansive and so commonly violated

⁴⁹ *Id.*

⁵⁰ The petitioners believed that their opposition to pretextual stops was consistent with the Supreme Court’s previous language in *Florida v. Wells*, where the court held that police cannot use an inventory search program as a “ruse for a general rummaging in order to discover incriminating evidence,” and subsequent cases that analyzed whether inventory searches were merely pretexts for other unconstitutional behavior. *Id.* at 811.

⁵¹ *Id.* at 810. It is also worth noting, as Professor Tracey Maclin has observed, the defendants in *Whren* argued that the departmental policy in *Whren* also barred “plainclothes officers from making routine traffic stops. Essentially, the defendants contended that a traffic stop cannot be constitutionally reasonable when officer violate their own departmental rules. The Court responded that this argument—to equate violation of departmental rules with constitutional wrongs—would make the traffic code ‘a dead letter at the option of the police department.’” Maclin, *Cops and Cars*, *supra* note 4, at 2348 (quoting Transcript of Oral Arguments at 8, *Whren*, 517 U.S. 806 (No. 95-5841), 1996 WL 195296, at *8).

⁵² Thus, the petitioners urged the Court to adopt a test that would require future courts to ask whether the officer, “acting reasonably, would have made the stop for the reason given.” *Id.*

⁵³ *Id.* at 819.

⁵⁴ *Id.* at 813.

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that infractions itself can no longer be the ordinary measure of the lawfulness of conduct. And even if we could identify such exorbitant codes, we do not know by what standard (or what right) we would decide, as petitioners would have us do, which particular provisions are sufficiently important to merit enforcement.⁵⁵

The Court did acknowledge that “selective enforcement of the law based on considerations such as race” violated the Fourth Amendment.⁵⁶ Nevertheless, the Court believed that victims of this type of selective enforcement must prove their claim under the Equal Protection Clause of the Fifth or Fourteenth Amendment, not under the Fourth Amendment.⁵⁷ Thus, *Whren* stands for the proposition that police officers are permitted to engage in pretextual traffic stops—that is, stops where they use a technical violation of the expansive traffic code to justify objectively a traffic stop executed primarily so an officer can investigate an otherwise unsubstantiated hunch that, by itself, does not provide the officer with either reasonable suspicion or probable cause. As discussed in the next subpart, despite the fact that the Court decided *Whren* unanimously, scholars swiftly and strongly criticized the decision.

B. Scholarly Criticism of *Whren*

Many scholars argued that the *Whren* decision underestimated the frequency and harms of racial profiling by police officers.⁵⁸ For example, Professor I. Bennett Capers wrote that *Whren* “essentially green-lighted the police practice of singling out minorities for pretextual traffic stops in hopes of discovering contraband” because *Whren* allowed police to “use race as an

⁵⁵ *Id.* at 818-19.

⁵⁶ *Id.* at 813.

⁵⁷ *Id.*

⁵⁸ See, e.g., Phyllis W. Beck & Patricia Daly, *State Constitutional Analysis of Pretext Stops: Racial Profiling and Public Policy Concerns*, 72 TEMP. L. REV. 597, 697 (1999) (“The primary concern with pretext stops is that they facilitate racial profiling, the process of singling out drivers based on their race.”); Abraham Abramovsky & Johnathan I. Edelstein, *Pretext Stops and Racial Profiling After Whren v. United States: The New York and New Jersey Responses Compared*, 63 ALB. L. REV. 725, 726 (2000) (“In other words, the *Whren* Court validated one of the most common methods by which racial profiles are put into effect—the pretext stop.”); Kami Chavis Simmons, *Beginning to End Racial Profiling: Definitive Solutions to an Elusive Problem*, 18 WASH. & LEE J. C.R. & SOC. JUST. 25, 29 (2011) (describing the holding of *Whren* and concluding that “these highly discretionary stops permit racial bias, either explicit or implicit, to go unchecked and unpunished.”).

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‘unofficial’ proxy for suspicion....”⁵⁹ Professor David A. Harris predicted that *Whren* would lead police officers to “use the traffic code to stop a hugely disproportionate number of African-Americans and Hispanics.”⁶⁰ Professor Devin W. Carbado bluntly concluded that after *Whren*, “at least under the Fourth Amendment, racial profiling claims are not cognizable” because “race matters in the Fourth Amendment context only to the extent that a police officer’s conduct is overtly racially coercive.”⁶¹ And Professor Kevin R. Johnson has written a detailed account of how *Whren*, alongside other major Supreme Court decisions, has “made legal challenges to profiling *more*, not *less*, difficult, thereby implicitly encouraging police officers to rely on racial profiles in law enforcement.”⁶² These problems are compounded by the facts that, according to scholars like Professor Anthony C. Thompson, psychological evidence suggests that race plays an integral role in police officers’ perceptions and subsequent behavior.⁶³

Still other scholars like Professors Albert W. Alschuler,⁶⁴ Angela J. Davis,⁶⁵ and Pamela S. Karlan⁶⁶ described how, by forcing litigants to bring all challenges of pretextual stops under the Equal Protection Clause rather than the Fourth Amendment, *Whren* functionally leaves victims of racial profiling with few remedies because of the “substantial hurdles” required by Equal Protection claims.⁶⁷ Traditionally, a successful Equal Protection claim requires a defendant to prove that “a police officer intentionally

⁵⁹ I. Bennett Capers, *Rethinking the Fourth Amendment: Race, Citizenship, & the Equality Principle*, 46 HARV. C.R.-C.L. L. REV. 1, 34 (2011).

⁶⁰ Harris, *supra* note 4, at 546.

⁶¹ Devon W. Carbado, *(E)racing the Fourth Amendment*, 100 MICH. L. REV. 946, 1033, 1044 (2002).

⁶² Kevin R. Johnson, *How Racial Profiling in America Became the Law of the Land: United States v. Brignoni-Ponce and Whren v. United States and the Need for Truly Rebellious Lawyering*, 98 GEO. L.J. 1005, 1007 (2010).

⁶³ Thompson, *supra* note 4, at 983-97 (describing the social science literature on how race inevitably influences police perceptions of potential suspects).

⁶⁴ Albert W. Alschuler, *Racial Profiling and the Constitution*, 2002 U. CHI. L. FORUM 163, 168, 193 (claiming that “[t]he Court appeared to treat the Fourth Amendment and the Equal Protection Clause as hermitically sealed units whose principles must not contaminate one another,” and connecting this to the “difficulty of devising effective injunctive remedies for unlawful policing.”).

⁶⁵ Davis, *supra* note 8, at 435-38 (describing in detail the hurdles to recovery for victims of racial profiling after *Whren*, when read in conjunction with other cases).

⁶⁶ Karlan, *supra* note 8, at 2003-05 (describing how *Whren*, when read alongside *United States v. Armstrong*, make it particularly difficult to obtain relief in the case of racial profiling).

⁶⁷ Davis, *supra* note 8, at 427.

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discriminated against him because of his race,”⁶⁸ which is nearly impossible to prove in the event of a pretextual stop—particularly given the widespread evidence about police perjury.⁶⁹ In fact, numerous scholars, including Professors Andy Leipold⁷⁰ and Tracey Maclin,⁷¹ have worried about the effects of the *Whren* decision in light of the evidence of police officers’ willingness to lie on the stand in order to build cases against criminal defendants. And numerous scholars like Professor Gabriel J. Chin and Charles J. Vernon concluded that the *Whren* case was wrongly decided.⁷²

⁶⁸ *Id.* at 436.

⁶⁹ See, e.g., Morgan Cloud, *The Dirty Little Secret*, 43 EMORY L.J. 1311, 1345 (1994) (stating that perjury by police officers “occurs most frequently when officers are testifying about searches and seizures and witness interrogations. Police perjury about these topics is often the product of rules imposing penalties for illegal police practices...”); Andrew J. McClurg, *Good Cop, Bad Cop: Using Cognitive Dissonance Theory to Reduce Police Lying*, 32 U.C. DAVIS L. REV. 389 (1999) (discussing police lying); Carol A. Chase, *Rampart: A Crying Need to Restore Police Accountability*, 34 LOY. L.A. L. REV. 767 (2001) (also advocating for reforms designed to address police lying).

⁷⁰ Leipold, *supra* note 4, at 562 (“Put bluntly, if police perjury is as common as some suspect, the likelihood of discovering an improper motive through the judicial process is slim indeed.” (internal citations omitted)).

⁷¹ As Professor Tracey Maclin has argued, “[o]ne need not accept that perjury is a pervasive problem in every police department to recognize that perjury (or the potential for perjury) may play a central role in how pretextual stops are carried out.” Maclin, *supra* note 4, at 379-86 (arguing that “[p]olice often commit perjury to achieve the same end” and providing a detailed summary of the problem of police perjury and how *Whren* may exacerbate this issue).

⁷² See generally Chin & Vernon, *supra* note 4; see also Diana Roberto Donahoe, “*Could Have*,” “*Would Have*,” *What the Supreme Court Should Have Decided in Whren v. United States*, 34 AM. CRIM. L. REV. 1193, 1194 (1997) (criticizing the test adopted by the *Whren* Court, which leads to “arbitrary, unconstitutional searches and seizures” and ultimately offering an alternative proposal). Admittedly, this quick summary of the scholarly backlash to *Whren* does not cover all articles and essays written on the topic. Numerous other scholars have also done important work in this area. The authors regret that they are unable to discuss all of these important works in the detail they deserve. See, e.g., Alberto B. Lopez, *Racial Profiling and Whren: Searching for Objective Evidence of the Fourth Amendment on the Nation’s Roads*, 90 KY. L.J. 75 (2001-2002) (providing ahistorical account of the *Whren* decision and situating it within the broader debate about racial profiling); Daniel B. Yeager, *The Stubbornness of Pretexts*, 40 SAN DIEGO L. REV. 611, 617 (2003); Wayne R LaFave, *The “Routine Traffic Stop” from Start to Finish: Too Much “Routine,” Not Enough Fourth Amendment*, 102 MICH. L. REV. 1843, 1859 (2004) (“The totality of the Court’s analysis in *Whren* is, to put it mildly, quite disappointing. By misstating its own precedents and mischaracterizing the petitioners’ central claim, the Court managed to trivialize what in fact is an exceedingly important issue regarding a pervasive law-enforcement

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Despite this widespread concern about the harmful effects of *Whren*, very few states have enacted limitations on the use of pretextual stops as discussed in more depth in the next subpart.

C. State Departures from *Whren*

Sates have generally not strayed far from the core holding of *Whren*. State constitutions often include their own versions of the Fourth Amendment, limiting the ability of state law enforcement to engage in unreasonable searches or seizures. Many of these state constitutional provisions are broader than their federal counterpart, limiting the ability of state law enforcement to engage in conduct that might otherwise be permitted under the U.S. Constitution. And state legislatures are also free to pass legislation limiting the ability of police officers in their states to engage in pretextual stops. Nevertheless, very few state supreme courts and few state legislatures have established more stringent limitations on pretextual stops than those articulated in *Whren*. According to an analysis by Professor Margaret M. Lawton, it appears that only three states have judicially experimented with limitations on pretextual stops.⁷³

First, the New Mexico Court of Appeals held in 2009 in *State v. Ochoa* that their state constitution prohibits pretextual stops.⁷⁴ That court relied in part on the language of Article II, Section 10 of the New Mexico Constitution⁷⁵ in rejecting the *Whren* rule and opting instead for a two-part test that asks, first, whether there existed an objectively reasonable basis for

practice.”); Jeffrey Fagan & Mukul Bakshi, *New Frameworks for Racial Equality in the Criminal Law*, 39 COLUM. HUM. RTS. L. REV. 1, 8-9 (2007) (linking the differential treatment by police experienced by African Americans and other racial and ethnic minorities to selective enforcement by police). For an excellent and thorough summary of the scholarly critiques of *Whren*, see Margaret Lawton, *The Road to Whren and Beyond: Does the “Would Have” Test Work?* 57 DEPAUL L. REV. 917, 928-32 (2008) (describing the scholarly criticisms of *Whren*). This criticism has been echoed by prominent campaigns by civil rights organizations like the American Civil Liberties Union, which alleged that *Whren* would lead police to target those “Driving While Black.” Carbado, *supra* note 61, at 1035-40 (describing and quoting from the ACLU pamphlet); see also ACLU, DRIVING WHILE BLACK (1999).

⁷³ Margaret M. Lawton, *State Responses to the Whren Decision*, 66 CASE WESTERN L. REV. 1039 (2016) (discussing at length each of these three state departures from *Whren*).

⁷⁴ Michael Sievers, *State v. Ochoa: The End of Pretextual Stops in New Mexico*, 42 N.M. L. REV. 595, 595 (2012).

⁷⁵ *Id.* at 596-97 (providing the operative language of each and showing that the New Mexico Constitution appears to more explicitly require a warrant in more situations than the its federal counterpart).

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the stop, and second whether the subjective reason for the stop was unrelated to the objective justification.⁷⁶ If the defendant satisfies their burden of proving that the stop was actually pretextual based on a totality of the circumstances—that is, if they can show that the subjective reason for the stop was different than the stated objective reason for the stop—then a court will find that there was no constitutional basis for the stop.⁷⁷

Second, Alaskan courts have established some limitations on the ability of police to engage in pretextual stops.⁷⁸ Alaskan courts have held that a traffic stop is impermissibly pretextual and thus unconstitutional under their state constitution if a defendant can prove that the officer because of an “ulterior motive” that “departed from reasonable police practices by making the stop.”⁷⁹ In making this decision, courts in Alaska will consider a totality of the circumstances, including “the egregiousness or seriousness of the violation (*i.e.*, whether it poses a danger to safety), any earlier police contacts with the motorist or the vehicle, the time of day or night, the weather and road conditions, and the press of other business.”⁸⁰

Finally, Washington experimented with different rules regulating pretextual stops. The Washington Supreme Court first acted to prohibit pretextual stops in *State v. Ladson*.⁸¹ Then, around twelve years later in *State v. Arreola*, the same court backtracked by redefining the term “pretextual” to apply to a relatively narrow set of factual circumstances.⁸² As a result, Washington has proven to be unique among American state in its varying rules governing pretextual stops by law enforcement officers. The subparts that follow walk through this unique history of judicial regulation of pretextual stops in Washington.

1. *State v. Ladson*: Ban on Pretextual Stops

The Washington Supreme Court first considered the constitutionality of pretextual traffic stops in 1999 in *State v. Ladson*.⁸³ That case originated from a traffic stop conducted by Officer Jim Mack of the Lacey Police

⁷⁶ *Id.* at 609 (citing *Ochoa*, 206 P.3d at 155-56).

⁷⁷ *Id.*

⁷⁸ Margaret M. Lawton, *supra* note 73, at 1052 (noting that the Alaskan approach is more akin to the rule recommended by the petitioners in *Whren*; explaining that Alaskan courts have not fully adjudicated how the Alaska State Constitution regulates pretextual stops; further noting that this is, in part, because defendants have often failed to allege a sufficient set of facts that would squarely raise this issue).

⁷⁹ *Id.* (quoting *Chase v. State* 243 P.3d 1014, 1019 (Alaska Ct. App. 2010)).

⁸⁰ *Nease v. State*, 105 P.3d 1145, 1149 (Alaska Ct. App. 2005).

⁸¹ *See infra* Part II.C.1.

⁸² *See infra* Part II.C.2.

⁸³ 979 P.2d 833 (Wash. 1999).

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Department and Deputy Cliff Ziesmer of the Thurston County Sheriff's Department in October of 1995.⁸⁴ While working on a gang patrol, Officer Mack and Deputy Ziesmer became suspicious of a car driven by an African American man named Richard Fogle.⁸⁵ The officers recognized Fogle as the suspect from an "unsubstantiated street rumor" involving drugs.⁸⁶ But this rumor did not give the officers the necessary reasonable suspicion required to execute a traffic stop.⁸⁷ So instead, the officers followed Fogle's vehicle until they noticed that his license plate sticker had recently expired.⁸⁸ The officers then admitted that they used this expired license plate sticker as a pretext to justify stopping Mr. Fogle's vehicle so that they could investigate the unsubstantiated rumor.⁸⁹

After discovering that Fogle had a suspended license, the officers arrested him and searched his car incident to arrest.⁹⁰ They also ordered Fogle's passenger, an African American man named Thomas Ladson, out of the car and patted him down.⁹¹ After finding a small gun, \$600 cash, and some small baggies of marijuana, the officers placed Mr. Ladson under arrest.⁹² The state charged Ladson "with unlawful possession of a controlled substance with intent to deliver while armed with a deadly weapon and possession of a stolen firearm."⁹³ Ladson then moved to suppress the evidence obtained during the traffic stop, arguing that it was the result of pretextual traffic stop which violated the Article I, Section 7 of the Washington Constitution.⁹⁴ This part of the Washington Constitution states that "[n]o person shall be disturbed in his private affairs, or his home invaded, without authority of law."⁹⁵ While *Whren* established a permissive standard

⁸⁴ *Id.* at 836.

⁸⁵ *Id.* (noting that the "trial court found, 'Officer Mack's suspicions about Fogle's reputed drug dealing was his motivation in finding a legal reason to initiate the stop of Fogle's vehicle.'").

⁸⁶ *Id.*

⁸⁷ *Id.* (describing how the officers "followed the Fogle vehicle looking for a legal justification to stop the car," going as far as "shadowing the vehicle while it refueled at a local filling station.").

⁸⁸ *Id.*

⁸⁹ *Id.* ("The officers do not deny the stop was pretextual.").

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.* (describing in more detail how they first discovered a small handgun which justified Mr. Ladson's arrest, and then searched his jacket incident to arrest where they discovered the drugs and cash).

⁹³ *Id.*

⁹⁴ *Id.* at 837 (specifically arguing that "the state constitution provides broader protections than does the Fourth Amendment in the area of pretextual traffic stops.").

⁹⁵ *Id.* (quoting this portion of the Washington Constitution).

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for pretextual stops, the Washington Supreme Court has consistently found that Article I, Section 7 of their constitution is more protective than the U.S. Constitution.⁹⁶ Thus, the question raised by *Ladson* was whether the more protective Washington Constitution prohibited pretextual traffic stops, even if the U.S. Constitution does not.

In a 5-4 decision, the court held that the use of pretextual stops violates the Washington Constitution.⁹⁷ As the majority explained, “the problem with a pretextual traffic stop is that it is a search or seizure which cannot be constitutionally justified for its true reason (i.e., speculative criminal investigation), but only for some other reason (i.e., to enforce traffic code) which is at once lawfully sufficient but not the *real* reason.”⁹⁸ Permitting pretextual stops would effectively be prioritizing “form over substance” and represent a “triumph of expediency at the expense of reason.”⁹⁹ Thus, the court reasoned, stops based on a bare suspicion of wrongdoing, like that of Mr. Ladson, are “inherently unreasonable,” even if an officer is able to eventually identify some minor, pretextual justification.¹⁰⁰

At the end of their decision, the court gave guidance to officers and trial courts in deciding whether a traffic stop was pretextual and thus barred by the *Ladson* decision. They concluded that courts ought to examine the “totality of the circumstances” including both the “subjective intent of the officer” as well as the “objective reasonableness of the officer’s behavior.”¹⁰¹ This remained the law from July 1, 1999 until the Washington Supreme Court changed course significantly a little over 13 years later, as discussed in the next subpart.

2. *State v. Arreola*: Introduction of Mixed-Motive Stops

In December of 2012, in *State v. Arreola*, the Washington Supreme Court again considered the constitutionality of pretextual traffic stops under Article I, Section 7 of their state constitution.¹⁰² This case, though, was presented not as a direct challenge to the core holding of *Ladson*, but rather

⁹⁶ *Id.* (citing *State v. Hendricks*, 917 P.2d 563 (Wash. 1996); *State v. Stroud*, 720 P.2d 436 (Wash. 1986))

⁹⁷ *Id.* at 843 (further concluding that evidence obtained via such a pretextual stop must also be suppressed).

⁹⁸ *Id.* at 838.

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 839 (also citing cases where this court has previously expressed concern about pretextual stops).

¹⁰¹ *Id.* at 843.

¹⁰² 290 P.3ed 983 (Wash. 2012).

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as a clarification of the definition of the term “pretextual.”¹⁰³ The case originated out of the traffic stop of Gilberto Chacon Arreola by Officer Tony Valdivia in Mattawa, Washington on the night of October 10, 2009.¹⁰⁴ Officer Valdivia received a tip about a possible drunk driver matching Mr. Arreola’s vehicle.¹⁰⁵ Officer Valdivia followed Arreola for around 30 to 45 seconds without observing any behaviors consistent with intoxicated driving.¹⁰⁶ But Officer Valdivia noticed that the vehicle had an altered exhaust system, which technically violated Washington traffic code.¹⁰⁷ So Officer Valdivia executed a traffic stop.¹⁰⁸ In later testimony before a trial court, Valdivia admitted that the primary motivation for pulling over Mr. Arreola’s vehicle was to investigate the drunk driving tip.¹⁰⁹ Nevertheless, Officer Valdivia insisted that the altered exhaust system was another “actual reason for the stop.”¹¹⁰ And he claimed that while it was the uncorroborated tip that led him to follow Arreola’s vehicle, he “would have stopped the vehicle, once following it, even if he wasn’t suspicious of a DUI...”¹¹¹

Thus, the issue presented to the court was whether these facts made Officer Valdivia’s actions an impermissible “pretextual” stop within the meaning of *Ladson*.¹¹² Ultimately, the court decided to narrow significantly the core holding of *Ladson*, holding that Officer Valdivia’s behavior constituted a lawful “mixed-motive” rather than an impermissible “pretextual” stop.¹¹³ To delineate between constitutionally permissible

¹⁰³ *Id.* at 986 (“The issue in this case is whether a traffic stop motivated primarily by an uncorroborated tip, but also independently motivated by a reasonable articulable suspicion of a traffic infraction, is unconstitutionally pretextual under article I, section 7 of the Washington State Constitution and *State v. Ladson*.”).

¹⁰⁴ *Id.* at 986-87.

¹⁰⁵ *Id.* at 986.

¹⁰⁶ *Id.* at 986-87.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 987 (“Still without any signs of intoxicated driving, Officer Valdivia then activated his overhead lights and pulled over the car.”).

¹⁰⁹ *Id.* (but, noting that the officer continued to claim that the tip was not the only reason for the stop; also clarifying that the officer would “sometimes commence a traffic stop for an altered muffler because, as a member of the community, he appreciates concerns about the excessive noise that such mufflers emit.”).

¹¹⁰ *Id.* at 987 (further justifying his decision by explaining that while he would not normally “go out of his way to chase down a car with an altered muffler, he often would commence a traffic stop if already on the road and behind such a vehicle” so long as “conducting the stop would not hinder a more pressing investigation”).

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.* at 991 (“We hold that a traffic stop is not unconstitutionally pretextual so long as investigation of either criminal activity or a traffic infraction (or multiple

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“mixed-motive” stops and impermissible “pretextual” stops, the court relied in part on a comparison of the facts in *Ladson* with the facts in the present case. As the majority argued, the officer in *Ladson* fully admitted to the court that he was relying on “a false reason” intended to disguise his “real motive.”¹¹⁴ The officer in *Ladson* likely “would not have conducted the stop had there been no street rumor” meaning that the officer “abused his discretion by conducting the stop without deeming it reasonably necessary to enforce license plate regulations.”¹¹⁵ By contrast, the officer in *Arreola* testified that the muffler violation was an “actual” and independent justification for the traffic stop apart from the unsubstantiated tip.¹¹⁶ In the opinion of the majority, this made the stop in *Arreola* a permissible mixed-motive stop distinguishable from the pretextual stop in *Ladson*.

As the dissent in *Arreola* argued, the majority opinion fundamentally redefined and narrowed the legal meaning of the term “pretextual” in Washington in a manner that left it virtually unrecognizable from how the court used the term in *Ladson*.¹¹⁷ More specifically, the dissent worried the *Arreola* majority relied on a tenuous distinction between the term “real” and the term “primary.”¹¹⁸ The majority opinion says that a police officer may lawfully conduct a traffic stop where the “primary” motivation is a desire to investigate a hunch, but officers are still barred from conducting pretextual stops where the investigation of a hunch is the “real” reason for the stop.¹¹⁹ How, then, should courts distinguish between “real” and “primary” motivations? In reality, the dissent argued, this distinction is practically meaningless, meaning that police in Washington may now lawfully engage in pretextual stops.¹²⁰

Reasonable readers may disagree on the theoretical and legal justifications for the Washington Supreme Court’s decision in *Arreola*. Nevertheless, it seems inarguable that the decision substantially narrowed the holding of *Ladson* by giving police permission to engage in more traffic stops that, at minimum, *resemble* pretextual stops—that is, stops where a police officer uses a technical (and often minor) violation of the traffic code to justify a traffic stop that allows them to investigate a hunch or

infractions), for which the officer has a reasonable articulable suspicion is an actual, conscious, independent cause of the traffic stop.”).

¹¹⁴ *Id.* (quoting *Ladson*, 979 F.2d at 833).

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.* at 992-93.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.* at 993 (explaining that police officers are now “free to stop citizens *primarily* to conduct an unconstitutional speculative investigation so long as they can claim there was an independent secondary reason for the seizure.”).

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unsubstantiated suspicion. Thus, *Arreola* represented an expansion of law enforcement power to execute discretionary traffic stops against motorists in Washington.

III. EXISTING LITERATURE

An extensive and growing body of literature suggests that police treat non-white drivers differently than white drivers. These studies commonly find that police are more likely to stop, search, and take other coercive actions against non-white drivers than white drivers. Differences in driving behavior generally do not explain this differential treatment. All of this suggests that police in a wide number of jurisdictions may be considering a driver's race (either implicitly or explicitly) in making traffic enforcement decisions. Many of these studies point to *Whren*—and the broad discretion and deference given to police generally—as contributing to this type of racial profiling. But no study to date has empirically tested the link between *Whren* or other similar state cases on racially biased behavior by police officers.

Shortly after the *Whren* decision, Professor David Rudovsky wrote a detailed summary of the then-existing universe of studies on racial profiling by police in traffic stops.¹²¹ At that point, studies of the New Jersey State Police,¹²² Volusia County Sheriff's Department in Florida,¹²³ Illinois State Police,¹²⁴ Philadelphia Police Department,¹²⁵ New York Police

¹²¹ Rudovsky, *supra* note 14, at 299-306 (providing a detailed summary of the then-existing literature on racial profiling).

¹²² PETER VERNIERO, ATTORNEY GENERAL OF NEW JERSEY, INTERIM REPORT OF THE STATE POLICE REVIEW TEAM REGARDING ALLEGATIONS OF RACIAL PROFILING 26-28, 67-68 (April 20, 1999), *available at* https://www.state.nj.us/lps/intm_419.pdf (finding that 77.2% of all consent searches were non-white drivers, which appeared to be the result of racial discrimination; similarly finding when police executed searches of vehicles, these searches produced high hit rates for white).

¹²³ Jeff Bazil & Steve Berry, *Color of Drivers is Key to Stops on I-95 Videos*, ORLANDO SENTINEL, Aug. 23, 1992, at A-1 (finding that in reviewing footage of 1,000 stops in this county, African-American and Latino drivers made up around 70% of those stopped, but only 5% of the local population driving along that highway).

¹²⁴ David A. Harris, *Driving While Black: Racial Profiling on Our Nation's Highways*, ACLU (June 1999), *available at* <https://www.aclu.org/report/driving-while-black-racial-profiling-our-nations-highways> (finding that although Latinos make up less than 8% of the state population and less than 3% of the motorists in a particular region, they made up 30% of the motorists stopped by drug interdiction officers).

¹²⁵ Rudovsky, *supra* note 14, at 301 (pointing out how in Philadelphia, African Americans were roughly ten times more likely to be stopped through either

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Department,¹²⁶ and Boston Police Department¹²⁷ all showed evidence of racial profiling by law enforcement. Indeed, Professor Ruduvosky's summary from around two decades ago foreshadowed a research field that has since grown substantially. Today, racial profiling research is a major field of study, with studies regularly emerging each year by academics,¹²⁸ government agencies,¹²⁹ and non-profits.¹³⁰ These studies have attempted to document the presence of racial profiling through a relatively common set of methodological approaches. They often collect data on the frequency of police stops and searches of white and non-white drivers.¹³¹ Then, they generally compare these stop and search rates with some baseline to determine whether police are treating non-white drivers differently than we would expect given the underlying population breakdowns, rates of traffic code violations, or other baselines.¹³²

In doing so, many studies have struggled with a common methodological limitation: the so-called "benchmark" problem.¹³³ An example may best illustrate this problem. In *Floyd v. City of New York*, a

vehicle or pedestrian stops than one would expect based on their representation in the underlying population).

¹²⁶ *Id.* (explaining how an analysis of 175,000 stops by the New York Attorney General in 1999 found that African-Americans were approximately six times more likely to be stopped than whites, and that these imbalances continued to exist even after adjusting for crime rates by race).

¹²⁷ *Id.* at 303 (describing how the Boston police department officers engaged in racially biased stops and searches of minority individuals).

¹²⁸ *See, e.g., infra* notes 137-145 and accompanying text.

¹²⁹ *See, e.g., supra* note 122 and accompanying text.

¹³⁰ *See, e.g., supra* note 124 and accompanying text.

¹³¹ *See, e.g., supra* 122-127 and accompanying text.

¹³² *See, e.g., infra* notes 133-139 and accompanying text.

¹³³ Jeffrey Grogger & Greg Ridgeway, *Testing for Racial Profiling in Traffic Stops Behind a Veil of Darkness*, 101 J. AMER. STATISTICAL ASSOC. 878, 878 (2006) ("The key problem in testing for racial profiling in traffic stops is estimating the risk set, or 'benchmark,' against which to compare the race distribution of stopped drivers."). Professor Harris provides a detailed and careful examination of how prior researchers have dealt with the benchmark issue in the past. He notes that many early researchers simply used the "easiest," the "most widely available," or the "cheapest" benchmark data available—often census information. But these benchmarks fail to consider potential differences in underlying behavior of the populations studied. Census data may also be problematic for studies of racial profiling in traffic stops because the racial breakdown of a community may not match the racial breakdown of those driving within that community. *See* David A. Harris, *U.S. Experiences with Racial and Ethnic Profiling: History, Current Issues, and the Future*, 14 CRITICAL CRIMINOLOGY 213, 213, 229-33 (2006) (describing the "thorny benchmarking issue" and providing a detailed assessment of the literature on this issue).

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group of plaintiffs argued that the New York Police Department was engaged in a pattern of unconstitutional stops-and-frisks that lacked reasonable suspicion backed up by individualized, articulable facts as required by *Terry v. Ohio*.¹³⁴ To prove this pattern of unconstitutional misconduct, the plaintiffs pointed to the vast overrepresentation of Black and Latino young men among the population of those subjected to *Terry* stops relative to the city's overall population.¹³⁵ But the NYPD claimed that the large number of Black and Latino individuals subjected to *Terry* stops was a predictable result of the higher rate of criminal activity among this group, as well as tactical choices by the NYPD to allocate more officers to higher crime communities where more Blacks and Latinos lived relative to other racial groups.¹³⁶ So in deciding whether Blacks and Latinos were overrepresented among those targeted for stops-and-frisks, what is the right comparison point: the proportion of Black and Latino young men as a percentage of the overall population in the City of New York, the proportion of those arrested for other crimes that are Black and Latino, or some other measure?¹³⁷ Identifying the appropriate "benchmark" or baseline for comparison is critical in evaluating whether the resulting statistical disparities in police behavior are the result of racial profiling by law enforcement officers, or the result of genuine differences in underlying behavior. This benchmark problem has also complicated efforts by litigants, including the U.S. Department of Justice, to make legally sufficient showings of racial bias in court proceedings against local law enforcement agencies.¹³⁸ As one researcher known for her

¹³⁴ *Floyd v. City of New York*, 959 F.Supp.2d 540, 558-59 (S.D. N.Y. 2013) (describing the circumstances that led to the litigation).

¹³⁵ *Id.* at 583-89 (describing the "competing benchmarks" used by each side during the litigation).

¹³⁶ *Id.* at 584 ("The City's experts, by contrast, used a benchmark consisting of the rates at which various races appear in suspect descriptions from crime victims—in other words, 'suspect race description data.' The city's experts assumed that if officers' stop decisions were racially unbiased, then the racial distribution of stopped pedestrians would be the same as the racial distribution of the criminal suspects in the area.").

¹³⁷ For a broader discussion of the benchmark problem, see Grogger & Ridgeway, *supra* note 133, at 878 ("To date, the two most common approaches have been to use residential population data or to conduct traffic surveys in which observers tally the race distribution of drivers at a certain location. It is widely recognized that residential population data provide poor estimates of the population at risk of a traffic stop; at the same time, traffic surveys have limitations and are more costly to carry out than the alternative that we propose herein.").

¹³⁸ This benchmark problem has proven problematic in cases where litigants have attempted to prove racial bias in traffic stops in § 12601 cases. See, e.g., *United States v. Johnson*, 122 F.Supp.3d 272, 331-38 (M.D. N.C. 2015) (describing why the district court ultimately concluded that Dr. John Lamberth's use of an observational

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skepticism of racial profiling studies critically remarked, “[u]ntil someone devises an adequately sophisticated benchmark that takes into account population patterns on the roads, degrees of law breaking, police deployment patterns, and the nuances of police decision making, stop data are as meaningless as they are politically explosive.”¹³⁹ To address these benchmarking challenges, studies have taken a number of different methodological approaches.

Some studies have simply compared the rate at which police stop and search the vehicles of non-white drivers with the underlying population of a geographical area,¹⁴⁰ or in some cases the racial distribution of licensed drivers.¹⁴¹ Other studies have compared the rate at which police stop and search drivers of color with the rate at which those same drivers appear to violate traffic laws, relying on systematic field observations or self-reported surveys to establish a benchmark.¹⁴² Still others have developed a benchmark

study to establish a benchmark for racial profiling analysis was inadmissible under *Daubert v. Merrell Dow Pharm.* and *Kumho Tire Co. v. Carmichael*, and, regardless, lacked credibility in the eyes of the court).

¹³⁹ Brian L. Withrow & Howard Williams, *Proposing a Benchmark on Vehicle Collision Data in Racial Profiling Research*, 40 CRIM. JUST. REV. 449, 451 (2015) (quoting comments by writer Heather MacDonald).

¹⁴⁰ See, e.g., Michael R. Smith & Matthew Petrocelli, *Racial Profiling? A Multivariate Analysis of Police Traffic Stop Data*, 4 POLICE Q. 4 (2001) (comparing the number of Black individuals stopped in Richmond, Virginia with their percentage of the driving-eligible population and finding apparent evidence of racial profiling); LORIE A. FRIDELL, BY THE NUMBERS: A GUIDE FOR ANALYZING RACE DATA FROM VEHICLE STOPS, POLICE EXECUTIVE RESEARCH FORUM 7, 75-113 (2004), available at https://www.policeforum.org/assets/docs/Free_Online_Documents/Racially-Biased_Policing/by%20the%20numbers%20-%20a%20guide%20for%20analyzing%20race%20data%20from%20vehicle%20stops%202004.pdf (describing the “benchmark challenge” and identifying “adjusted census data” as one possible way for establishing a benchmark).

¹⁴¹ WILLIAM R. SMITH, DONALD TOMASKOVIC-DEVEY, MATTHEW T. ZINGRAFF, H. MARCINA MASON, PATRICIA Y. WARREN, & CYNTHIA PFAFF WRIGHT, THE NORTH CAROLINA HIGHWAY TRAFFIC STUDY 5 (2004), available at <https://www.ncjrs.gov/pdffiles1/nij/grants/204021.pdf> (“Somewhat to our surprise, we found empirical evidence to the effect that there is a racial variation by time of day in the distribution drivers on the highway of North Carolina. African Americans are more likely to be driving in the evening and early morning *relative to their distribution in the licensed driver population.*” (emphasis added)).

¹⁴² For example, Dr. John Lamberth has conducted numerous studies using this methodology in jurisdictions like Maryland, New Jersey, and Alamance County, North Carolina. See, e.g., Aff. of Dr. John Lamberth, *Wilkins v. State of Maryland*, No. CB-93-468 (D. Md. 1993) (filed Nov. 14, 1996); John Lamberth, *Driving While Black*, WASH. POST. (Aug. 16, 1998), <https://www.washingtonpost.com/archive/opinions/1998/08/16/driving-while->

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by relying on vehicle collision data, arguing that this collision data provides better insight into the racial breakdown of drivers on the road than population alone.¹⁴³ Another group of studies have attempted to circumvent the benchmark problem by focusing not just on the comparative rate of stops and searches of non-white drivers relative to a benchmark, but by instead comparing differential rates at which police search the vehicles of non-white drivers and the rate at which these searches result in the collection of

black/23ecdf90-7317-44b5-ac43-4c9d7b874e3d (describing his use of this methodology for benchmarking in the litigation against the New Jersey State Police). A number of other researchers have similarly used field observation benchmarks to demonstrate an apparent pattern of racial bias by police officers in traffic stops, commonly finding evidence of racial profiling. For an example of a study that has, in turn, relied on Lamberth's benchmarking process, see Samuel R. Gross & Katharine Y. Barnes, *Road Work: Racial Profiling and Drug Interdiction on Highways*, 101 MICH. L. REV. 651, 664 (2002). In that study, Professors Samuel R. Gross and Katharine Y. Barnes examined data from the Maryland State Police from stops and searches conducted on Highway 95 between 1995 and the mid-2000s. At the time of their study, Professors Gross and Barnes claimed that Maryland State Police were the only major agency to make this kind of data publicly available for review. By analyzing a dataset of 2,146 searches that occurred on a portion of I-95 from the Baltimore to the Delaware border, they found that the Maryland State Police engaged in racial profiling by stopping and searching cars with Black and Hispanic drivers more often than cars driven by white drivers. *Id.* at 658 ("There is only one American jurisdiction for which detailed data on racial profiling in highway searches are available for a considerable period. Since 1995, Maryland State Police ... troopers have been under court order to file a report on every incident in which they stop and search a motor vehicle, including information on the race of the driver, the basis for the search, and the type and quantity of the drugs recovered, if any."); JAMES E. LANGE, KENNETH O. BLACKMAN, AND MARK B. JOHNSON, *SPEED VIOLATIONS SURVEY OF THE NEW JERSEY TURNPIKE: FINAL REPORT* (2001) (also using a systematic field observation model to establish a benchmark); Patricia Warren, Donald Tomaskovic-Devey, William Smith, Matthew Zingraff, & Marcinda Mason, *Driving While Black: Bias Processes and Racial Disparity in Police Stops*, 44 CRIMINOLOGY 709, 712 (2006) ("surveys offer an alternative to official records" as they "allow for data that are unlikely to be available in official reports to be collected and analyzed" and describing how the authors use "self-reported driving behavior and past vehicle stops to statistically control for law-breaking behavior...").

¹⁴³ See, e.g., Geoffrey P. Alpert, Michael R. Smith, and Roger G. Dunham, *Toward a Better Benchmark: Assessing the Utility of Not-at-Fault Traffic Crash Data in Racial Profiling Research*, 6 JUST. RESEARCH & POL'Y 43 (2004) (arguing that traffic crash data can be a useful tool for establishing a benchmark and using Miami-Dade County, Florida as an example for implementing this methodology); Brian L. Withrow & Howard Williams, *Proposing a Benchmark on Vehicle Collision Data in Racial Profiling Research*, 40 CRIM. JUST. REV. 449, 449 (2015) (arguing that this type of benchmark is "more valid and reliable and enable researcher to consider driving frequency and the potential for disengagement.").

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contraband.¹⁴⁴ And an emerging set of studies have adopted a “veil of darkness” methodology that compare the rate at which police stop white and non-white drivers at day and at night, under the assumption that evidence of racial profiling will be most evident during daylight hours when police can more easily ascertain the race of nearby drivers.¹⁴⁵

Admittedly, this brief survey only scratches the surface of the evidence of racial profiling that has emerged in the years immediately before and after the *Whren* decision. Even so, a couple of important lessons emerge from the existing literature. First, regardless of methodological choices, a large number of studies have found evidence of racial profiling in police agencies across the country. This is not to say that all police departments are equal, or that all departments demonstrate troubling patterns of racial bias. There are over 18,000 police departments, each with its own unique policies,

¹⁴⁴ See, e.g., George E. Higgins, Gennaro F. Vito, & William F. Walsh, *Searches: An Understudied Area of Racial Profiling*, 6 J. ETHNICITY IN CRIM. JUST. 23 (2006) (using data from 40,000 traffic stops in Louisville, Kentucky to show that race appeared to influence the likelihood of searches taking place after a traffic stop). As another example, Professor Frank Baumgartner et al. have shown through an analysis of 18 million traffic stops in North Carolina between 2002 and 2013 that black drivers, particularly younger black men, are disproportionately likely to be searched and arrested incident to a traffic stop, and discussing the hit rate for these searches. Frank R. Baumgartner, Derek A. Epp, Kelsey Shoub, & Bayard Love, *Targeting Young Men of Color for Search and Arrest During Traffic Stops: Evidence from North Carolina, 2002-2013*, 5 POL. GROUPS & IDENTITIES 1 (2017). Professor Frank Baumgartner et al. has found similar patterns in an examination data from the Texas Department of Public Safety from 2002 through 2014. FRANK R. BAUMGARTNER, BRYAN D. JONES, JULIO ZACONET, COLIN WILSON, & ARVIND KRISHNAMURTHY, RACIAL DISPARITIES IN TEXAS DEPARTMENT OF PUBLIC SAFETY TRAFFIC STOPS, 2002-2014 (2015), available at <https://fbaum.unc.edu/TrafficStops/Baumgartner-TexasDPS-Nov2015.pdf>.

¹⁴⁵ Grogger & Ridgeway, *supra* note 133, at 879 (using such a veil of darkness methodology to examine whether the Oakland Police Department is engaged “in racially profiling when selecting particular vehicles to stop.”). For more discussions and examples of the veil of darkness methodology, see Joseph A. Ritter & David Bael, *Detecting Racial Profiling in Minneapolis: A New Approach*, 2009 CURA REPORTER 11 (using the veil of darkness methodology to analyze racial profiling in Minneapolis); Robert E. Worden, Sarah J. McLean, & Andrew P. Wheeler, *Testing for Racial Profiling With the Veil-of-Darkness Method*, 15 POLICE Q. 92 (2012) (using the veil of darkness methodology to find no evidence of racial bias in Syracuse, New York); William C. Horrace & Shawn M. Rohlin, *How Dark is Dark? Bright Lights, Big City, Racial Profiling*, 98 REV. ECON. & STAT. 226 (2016) (redefining the parameters for a veil of darkness analysis in Syracuse and finding evidence that black drivers were being stopped 15% more during daylight compared to darkness hours).

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procedures, and culture.¹⁴⁶ We are not a nation of one police department, but thousands of decentralized agencies.¹⁴⁷ Nevertheless, the existing literature suggests that racial profiling by police is a relatively common occurrence regardless of jurisdictional size, demographics, or other characteristics.

Second, while these studies frequently cite *Whren* as one of the causal mechanisms that may be contributing to the prevalence of racial profiling by law enforcement, none of these studies have casually connected *Whren* or similar cases to the patterns they observe. Take, as an example, the comprehensive study of North Carolina traffic stop data conducted by Professor Frank Baumgartner et al. in 2016.¹⁴⁸ In their discussion of the potential root causes of racial profiling, they argued:

...the Supreme Court decided in *Whren v. United States* (1996) that any traffic violation was a legitimate reason to stop a driver, even if the purported violation (e.g. changing lanes without signaling) was clearly a pretext for the officer's desire to stop and search the vehicle for other reasons, such as a general suspicion. There was no requirement that speeding laws, for example, be equitably enforced; if all drivers are speeding, it is constitutionally permissible, said the Justices, to pick out just the minority drivers and enforce the speeding laws selectively. Of course, once a car is stopped, officers are able to conduct a "consent" search when drivers do not object to the officer's request to search the vehicle. The *Whren* decision opened the floodgates to pretextual stops. Thus, tens of thousands of black and brown drivers have routinely been stopped and searched in an effort to reduce drug use.¹⁴⁹

Professor Baumgartner and his colleagues are not alone. Studies have commonly assumed that *Whren* contributed to racial profiling.¹⁵⁰ While this seems like an intuitive and logical conclusion, existing studies have had difficulty drawing this connection through the use of empirical methods. As we explain in the next Part, we believe our study addresses this gap in the existing literature.

¹⁴⁶ BRIAN A. REAVES, U.S. DEP'T OF JUSTICE, CENSUS OF STATE AND LOCAL LAW ENFORCEMENT AGENCIES, 2008, AT 2 (2011), <http://www.bjs.gov/content/pub/pdf/cslla08.pdf>

¹⁴⁷ Stephen Rushin, *Using Data to Reduce Police Violence*, 57 B.C. L. REV. 117, 141-42 (2016).

¹⁴⁸ Baumgartner et al., *supra* note 144.

¹⁴⁹ *Id.* at 2.

¹⁵⁰ See, e.g., Gross & Barnes, *supra* note 142, at 671-72 (linking *Whren* to subsequent racially biased behavior by police officers).

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IV. THE EFFECTS OF *ARREOLA* ON POLICE BEHAVIOR

In the wake of *Whren*, scholars expressed widespread concern that by greenlighting the use of pretextual traffic stops, the Supreme Court inadvertently facilitated racial profiling.¹⁵¹ But proving this proposition remained methodologically challenging for two reasons. First, there has historically been a lack of jurisdictional variation in the regulation of pretextual stops. As best as we can tell, many jurisdictions have historically permitted police to engage in pretextual stops or have had no clear regulation of the practice. So, when the Supreme Court handed down *Whren*, it did not act as an exogenous shock that changed policing practices—quite the contrary, in fact. It seemingly validated a practice that was widely used by many police departments all across the country. This meant that, even if data were widely available on police stops across the country, it would be nearly impossible to measure the effect of *Whren* on racial profiling by police. *Whren* did not change the status quo, but rather upheld it in many locations.

Second, empirically evaluating the effects of pretextual stop doctrines has proven challenging because of a lack of comprehensive data on police behavior. Only recently have some states required police departments to keep data on traffic and pedestrian stops, including the race of those stopped.¹⁵² These laws remain relatively rare today.¹⁵³ When the Court handed down *Whren* in 1996, this type of data was scarcely available,¹⁵⁴ and the federal government has never kept national data on police traffic stops,

¹⁵¹ See *infra* Part II.B.

¹⁵² See, e.g., Matt Kiefer, *Police in Illinois Will Permanently Have to Record Race, Other Traffic Stop Data in New Bill*, CHICAGO REPORTER (May 23, 2019), <https://www.chicagoreporter.com/police-in-illinois-will-permanently-have-to-record-race-other-traffic-stop-data-in-new-bill> (describing Illinois law that permanently codified requirement for police to collect data on race of those stopped in state); John Sides, *What Data on 20 Million Traffic Stops Can Tell us About 'Driving While Black,'* CHARLOTTE OBSERVER (July 17, 2018), <https://www.charlotteobserver.com/news/nation-world/national/article215033705.html> (“North Carolina became the first state to mandate the collection of traffic stops data in 1999, thanks in large part to efforts by black representatives in the state legislature.”).

¹⁵³ VOTE YES ON HB 1613, AMERICAN CIVIL LIBERTIES UNION OF ILLINOIS (2019), https://www.aclu-il.org/sites/default/files/field_documents/data_collection_traffic_and_pedestrian_stop_factsheet_0.pdf (“Of the 15 states with data collection laws, 13 are permanent. IL and MD are the only 2 with temporary laws.”).

¹⁵⁴ Sides, *supra* note 152 (quoting Professor Baumgartner for the proposition that North Carolina was the first state with a comprehensive data collection law passed in 1999—three years after *Whren*).

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or the race of those stopped by law enforcement.¹⁵⁵ Combined, this lack of data and the lack of jurisdictional variation meant that scholars could merely hypothesize about the potentially harmful effects of *Whren* on racial minorities.

As described in the previous section, three states—Alaska,¹⁵⁶ New Mexico,¹⁵⁷ and Washington¹⁵⁸—have each acted to limit police use of pretextual stops. Of these three states, only Washington, with its unique progression from *Ladson* to *Arreola* and available data, allows for us to test the effect of pretextual stop doctrines on racial profiling. Figure 1 graphically illustrates the legality of pretextual stops in Washington over time.

FIGURE 1, LEGALITY OF PRETEXTUAL STOPS IN WASHINGTON OVER TIME

1996-1999	1999-2012	2013-present
Pretextual stops presumptively permissible under <i>Whren</i>	Pretextual stops unconstitutional under <i>Ladson</i>	“Mixed-motive” pretextual stops permissible under <i>Arreola</i>

As Figure 1 shows, pretextual stops in Washington were presumptively permissible from 1996 to 1999 before being outlawed from 1999 to 2012. Then in 2013, the Washington Supreme Court re-authorized a form of mixed-motive stops that closely resemble pretextual stops. This progression of events allows for two possible opportunities to test the effects of pretextual stop doctrines—both after the court initially outlawed pretextual stops in 1999, and then again when the court backtracked from its ruling and permitted mixed-motive pretextual stops starting again in 2013.

Additionally, Washington is unique among potential research sites because a number of agencies have collected data on traffic stops over some of these time periods, including the race of those stopped.¹⁵⁹ The Stanford

¹⁵⁵ Rushin, *supra* note 147, at 117-18 (describing how the federal government keeps very little statistics on police behavior, including major subjects like the number of individuals killed by law enforcement each year).

¹⁵⁶ See *supra* notes 78-80 and accompanying text.

¹⁵⁷ See Michael Sievers, *State v. Ochoa: The End of Pretextual Stops in New Mexico*, 42 N.M. L. REV. 595 (2012) (describing in detail about how the state supreme court in New Mexico departed from *Whren* in 2009 to effectively limit the use of pretextual stops under their state constitution); see also *supra* notes 74-77 and accompanying text.

¹⁵⁸ See *supra* Parts II.C.1-2 and accompanying text.

¹⁵⁹ THE STANFORD OPEN POLICING PROJECT (2019), available at <https://openpolicing.stanford.edu> (click on “view data” and navigate to available

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Open Policing Project has made available online extensive amounts of data on police traffic stops (among other datasets) from departments across the country.¹⁶⁰ We draw on data provided by the Stanford Open Policing Project from the Washington State Patrol.¹⁶¹ The Washington State Patrol is the primary state policing agency for Washington, (formerly known as the Washington State Highway Patrol) that employs around 1,100 troopers whose primary responsibilities include “providing a safe motoring environment for the public” on the state’s “17,524 miles of state highways.”¹⁶²

The dataset we examine includes 8,257,527 stops made by troopers the Washington State Patrol from December 2008 through December 2015.¹⁶³ It includes data on the date, time, and location of each stop.¹⁶⁴ It also includes data on the race, age, and sex of each driver, as well as data on whether the officer conducted a search after the stop, whether this search resulted in the collection of any contraband, whether the officer issued a citation, whether the officer issued a warning, and whether the officer performed a frisk of any suspect.¹⁶⁵ Given the dates included in this dataset, we are unable to evaluate the *Ladson* decision in 1999. Nevertheless, the data allow us to examine the effects of the *Arreola* decision, which effectively invited police officers to engage in mixed-motive stops that closely resemble traditional pretextual stops. Thus, our study attempts to understand the effects of pretextual stop doctrines by examining how troopers from the Washington State Patrol changed their behavior after the court’s 2012 decision in *Arreola* re-authorizing mixed-motive stops.

This research model also allows us to sidestep the benchmark problem that has plagued so many other racial profiling studies. Our study does not compare the behavior of the Washington State Patrol to an artificially constructed benchmark. Instead, our research model compares the behavior of the Washington State Patrol before and after the introduction of a new legal rule expanding the ability of police officers to engage in mixed-

datasets for Washington, including the Washington State Patrol, Seattle, and Tacoma).

¹⁶⁰ *Id.*

¹⁶¹ *Id.* (noting that this database includes stop date, stop time, stop location, driver race, driver sex, driver age, searches conducted, contraband found, citations issued, warnings issued, and frisks performed for December 2008 through December 2015).

¹⁶² WASHINGTON STATE PATROL, *supra* note 21.

¹⁶³ THE STANFORD OPEN POLICING PROJECT, *supra* note 159.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* We would have preferred to have used data from Seattle and Tacoma, as well, since these agencies also provided datasets to the Stanford Open Policing Project. But we were unable to use data from these two agencies as they did not include information on the driver’s race or searches conducted.

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motive stops that closely resemble pretextual stops. Other than the court issuing its holding in *Arreola* in 2012, we have been unable to identify any other change in policies by the Washington State Patrol that would influence the rate of stops of white drivers differently relative to non-white driver in Washington over this time period. As a result, we believe that subsequent changes in how police treat non-white drivers relative to white drivers after *Arreola* can be reasonably attributed to the effect of this significant court decision—particularly when we introduce control variables. We further attempt to avoid the complications of the benchmark problem by using the veil of darkness methodology and analysis of search rates, as well as other robustness checks.

Overall, we find compelling evidence that the Washington Supreme Court’s decision in *Arreola* contributed to a rise in stops of non-white drivers relative to white drivers. We find this uptick concentrated in the daytime hours, when we would expect racial profiling to be most pervasive because of the ability of officers to observe a driver’s race through visual observation. This effect remains, even as we introduce controls into our model. This evidence is consistent with claims made by many scholars that legal rules permitting pretextual stops may contribute to racial profiling.

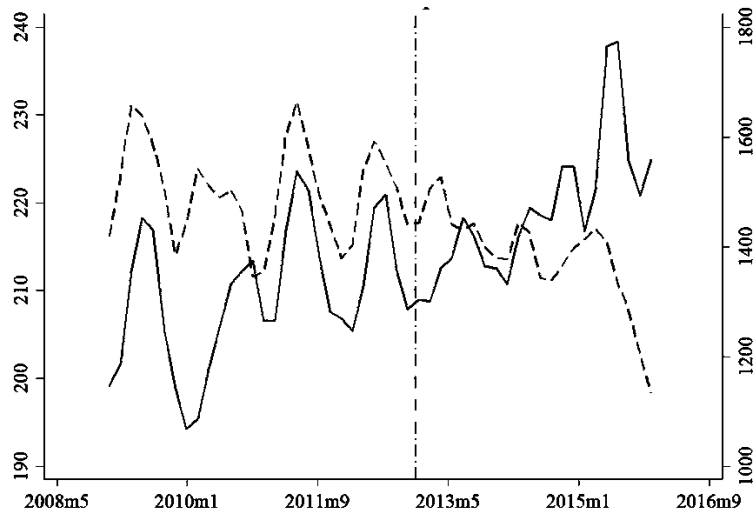
A. Trends in Raw Data

Before exploring the results of our more sophisticated modeling, it is helpful to first examine the trends in raw data. As a preliminary matter, it is worth calculating the change in stops pre- and post-*Arreola*. From 2009 through 2012, there were on average 210 stops of non-white drivers per county per month. From the start of *Arreola* in 2013, the number of stops for non-white drivers increased to 219. This is consistent with the hypothesis that *Arreola* contributed to racial profiling on the part of the Washington State Patrol. Another way to view this trend is by evaluating trend lines over time.

To do this, Figure 2 graphs the number of traffic stops per county of white drivers (dashed line) and non-white drivers (solid line) in Washington in the years immediately before and after *Arreola*. Throughout this time period, the number of stops of white drivers predictably outpaces the number of stops of non-white drivers. This is to be expected, given that whites make up the strong majority of the population in Washington. To adjust for this, the y-axis on the left side of the figure represents the number of stops of non-white drivers per county, and the y-axis on the right side of the figure represent the number of stops of white drivers per county. The vertical dashed line represents the date of the *Arreola* decision.

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FIGURE 2, STOPS PER COUNTY PER MONTH, WHITE AND NON-WHITE DRIVERS IN WASHINGTON, 2008-2015



As the data illustrate, there is a gradual increase of stops of non-white drivers after *Arreola* while stops of white drivers decline. If *Arreola* empowered police to racially profile drivers, we would expect the number of stops of non-white drivers to increase relative to the number of white drivers, just as we see in Figure 3. Thus, these general trend lines provide at least preliminary support for the racial profiling hypothesis.

Another way to visually observe how *Arreola* affected police traffic stops is to examine changes in the rate at which officers execute searches of vehicles incident to a traffic stop. If *Arreola* encouraged police officers to conduct pretextual stops of non-white drivers in order to investigate a hunch, this may disproportionately result in higher rates of searches of non-white drivers after *Arreola*. Figure 3 mirrors Figure 2, only this time we graph the number of police searches of white drivers' vehicles (dotted line) and non-white drivers' vehicles (solid line). Again, because non-white drivers represent a smaller minority of the population, this figure uses two y-axes—one to represent the scaling for white and one for non-white drivers.

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FIGURE 3, SEARCHES OF DRIVERS INCIDENT TO STOP PER COUNTY, WHITE AND NON-WHITE DRIVERS IN WASHINGTON, 2008-2015



The raw trend lines in Figure 3 are somewhat less clear. It appears that searches incident to traffic stops are on the decline for both groups throughout this time period. This is, perhaps, to be expected because of the legalization of recreation marijuana which happened around the same time as *Arreola*.¹⁶⁶ With marijuana becoming legal around 2013 (and with clear signals of this plan in the years leading up to this change in law), police likely changed their behavior. No longer could police necessarily use suspicion of marijuana as a basis for a search incident to a traffic stop. As a result, in order to differentiate the effects of *Arreola* from the change in law surrounding marijuana legalization, we need to employ a more sophisticated methodology. Additionally, it remains possible that other variables besides marijuana legalization and the introduction of the *Arreola* decision are influencing these results. To control for these alternative explanations, and to examine more thoroughly how *Arreola* may have influenced officer behavior, the subparts that follow present the results of our modeling.

¹⁶⁶ Christina Ng, Abby Phillips, & Clayton Sandell, *Colorado, Washington Become First States to Legalize Recreational Marijuana*, ABC NEWS (Nov. 6, 2012), <https://abcnews.go.com/Politics/OTUS/colorado-washington-states-legalize-recreational-marijuana/story?id=17652774>.

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B. *Effects of Arreola on Traffic Stops*

Simple analyses of differences or trend lines do not capture all of the factors that may influence police decisions to stop drivers in Washington. For example, changes in the staffing rates for the Washington State Patrol, changes in underlying state racial demographics, and other legislative changes may all influence the number of stops. Additionally, Washington legalized recreation marijuana close in time to the *Arreola* decision, which almost certainly changed the behavior of state troopers engaged in regular traffic enforcement, perhaps most prominently in their decisions to execute searches of vehicles incident to stops.¹⁶⁷

By just looking at the changes in the total number of stops of white and non-white drivers in response to *Arreola*, we could not meaningfully distinguish between the effects of *Arreola* and the effects of these other variables. To address this, we both conduct an ordinary difference-in-differences analysis, and we conduct a series of regressions designed to control for alternative explanations for any subsequent changes in police behavior we observe in the data. Social scientists have long used difference-in-differences analysis to approximate the conditions similar to a laboratory setting when running a traditional laboratory experiment is infeasible and is the subject of ongoing research on empirical estimation techniques.¹⁶⁸

In the present case, this methodology calculates the differences in police behavior of a treatment group and compares that difference to a baseline difference from a treatment group. For example, the hypothesis advanced by many scholars and civil rights activists is that by permitting a form of pretextual-like stops in *Arreola*, the Washington Supreme Court may have facilitated racial profiling.¹⁶⁹ If this hypothesis is true, we would expect introduction of *Arreola* (independent variable) to result in a change in police treatment of non-white drivers (dependent variable). And if this hypothesis is true, we would expect *Arreola* to have less of an effect on police treatment of white drivers.

So, to conduct a simple difference-in-differences analysis, we use changes in the number of stops by white drivers before and after *Arreola* as

¹⁶⁷ *Id.*

¹⁶⁸ See Michael Lechner, *The Estimation of Causal Effects by Difference-in-Difference Methods*, 4 *ECONOMETRICS* 165 (2010) (providing a review of the literature on the use of difference-in-difference in empirical studies); Elizabeth A. Stuart et al., *Using Propensity Scores in Difference-in-Differences Models to Estimate the Effects of a Policy Change*, 4 *HEALTH SERVICES & OUTCOMES RESEARCH METHODOLOGY* 166 (2014) (“Difference-in-difference (DD) methods are a common strategy for evaluating the effects of policies or programs that are instituted at a particular point in time, such as the implementation of a new law.”).

¹⁶⁹ See *supra* Part II.B.

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our baseline or control group, and we compare this difference to the change in the number of stops or our treatment group of non-white drivers. Admittedly, by identifying white drivers as our control group, we assume that *Arreola* did not meaningfully affect the driving behavior of white drivers nor the behavior of law enforcement towards white drivers in any systematic way. While the validity of these assumptions may be inherently untestable, we are able to perform a variety of robustness checks on our main findings of racial profiling that help bolster these underlying assumptions.

To formally calculate the difference-in-differences estimate of *Arreola*'s effect on racial profiling, we calculate the following differences:

$$\beta = (Stops_{post-Arreola}^{non-white} - Stops_{pre-Arreola}^{non-white}) - (Stops_{post-Arreola}^{white} - Stops_{pre-Arreola}^{white}) \quad (1)$$

or

$$(219.35 - 209.60) - (1387.79 - 1499.67) = 121.63$$

This result suggests that relative to changes in white stops over the same time period, the number of non-white stops increased by 121.6 per county per month after *Arreola*. This initial test gives us some confidence that *Arreola* may have had a larger effect on non-white drivers than white drivers. Nevertheless, it does not allow us to make any causal claims, nor does it allow us to estimate the statistical significance of our findings.

To bolster our analysis, we employ a multiple regression technique common for studies that employ a difference-in-differences framework.¹⁷⁰ Not only do regressions allow us to estimate standard errors, but they also allow us to include other measurable factors that may be influencing traffic stops like the age of driver, race and gender of the officer, location of the stop, and temporal distance to the *Arreola* decision. Formally, we estimate:

$$O_{ikt} = \alpha + \delta nonwhite_{ik} + \varphi Arreola_{kt} + \beta nonwhite * Arreola_{ikt} + \theta X + \varepsilon \quad (2)$$

This model allows us to measure more accurately the relationship between *Arreola* and any subsequent changes while controlling for alternative explanatory variables. Figure 4 presents the first results from this

¹⁷⁰ See, e.g., Griffin Edwards, Stephen Rushin, & Joseph Colquitt, *The Effects of Voluntary and Presumptive Sentencing Guidelines*, 98 TEX. L. REV. 1 (2019) (using difference-in-difference frameworks and multiple regression techniques to estimate the effect of changes in sentencing guidelines in Alabama on judicial behavior); Stephen Rushin & Griffin Edwards, *De-Policing*, 102 CORNELL L. REV. 721 (2017) (also using this same methodological approach).

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difference-in-differences modeling, focusing specifically on the estimated effect of *Arreola* on the number of stops conducted by Washington State Patrol troopers of non-white drivers relative to white drivers. The results represent the change in the total number of stops of non-white drivers per county per month since *Arreola*. In this sort of model, a positive number indicates an increase in the relative number of stops per month and a negative number indicates a decline in the relative number of stops per month.

FIGURE 4, EFFECT OF *ARREOLA* ON STOPS OF NON-WHITE DRIVERS BY COUNTY

	(1)	(2)	(3)
Change in Stops of Non-Whites	121.634[^]	111.075[^]	119.417[‡]
Standard Deviation	(64.375)	(61.795)	(44.928)
Controls		X	X
Fixed Effects			X
Sample Size	19,656	19,656	19,656
R Squared	0.206	0.250	0.529

[^]p < 0.10, [†]p < 0.05, [‡]p < 0.01

As seen in Figure 4, our model estimates that stops of non-white drivers in Washington increased by about 120 per county per month in the years after *Arreola* relative to white drivers. These results were statistically significant when we added in both controls and fixed effects. This gives us some confidence that *Arreola* may be contributing to an uptick in stops of non-white drivers.

Additionally, were non-white drivers simply engaged in more traffic violations, we would expect that any increase in overall stops would be accompanied by an equivalent increase in citations. But when we run these same regressions on the change in traffic citations, we find no evidence that the number of traffic citations increased for non-white drivers relative to white drivers during this same time period in any statistically significant way. In fact, we find that *Arreola* was instead associated with a statistically significant increase in the number of stops of non-white drivers relative to white drivers that end in a warning rather than a citation.¹⁷¹ This finding bolsters the conclusions from the raw data presented in Part III.A.

Combined, this suggests that once police are given more discretionary authority under the Washington pretextual stop doctrine, they may be using this authority to disproportionately target non-white drivers for

¹⁷¹ Regression outputs on file with authors and available upon request.

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additional stops. But this data alone does not definitely prove that police are changing their behavior in response to *Arreola*. Perhaps most importantly, this model cannot necessarily account for the effect of marijuana legalization. Since marijuana legalization and *Arreola* occurred around the same time,¹⁷² it is difficult to disentangle the effects of these two significant changes in law.

Nevertheless, there is another way to potentially differentiate between the effects of marijuana legalization and the effects of *Arreola*. While these two legal changes happened at the same approximate time, they likely had different effects on police behavior. Marijuana legalization removed a class of offenses from the purview of state law enforcement. We would expect that this would result in an overall decline in coercive action taken by state troopers, as the mere presence of marijuana inside a vehicle no longer constituted an actionable basis for further police investigation. Various studies have also demonstrated that different racial groups commonly use marijuana at similar frequencies, even if police are more likely to enforce marijuana prohibitions against non-whites.¹⁷³ Thus, we would expect that marijuana legalization should result in a general decline in police searches and in the collection of contraband from these searches across all racial groups.¹⁷⁴

And in fact, this is what we see in the data. We observe an overall decline in the number of searches across racial groups (although to differing levels, as we describe *infra* Part IV.C). We also observe an overall decline in the “hit rate” for these searches, meaning police are less likely to obtain contraband during these searches—likely because marijuana is no longer illegal under state law. All of this is consistent with the hypothesis that marijuana legalization resulted in at least some level of reductions in successful searches for contraband across all racial groups.

¹⁷² Ng et al, *supra* note 166.

¹⁷³ Steven W. Bender, *The Colors of Cannabis: Race and Marijuana*, 50 U.C. DAVIS L. REV. 689 691 (2016) (“Evidencing the racial inequality of the War on Drugs, African Americans and Latinos account for most of these arrests despite their smaller population numbers than whites and studies confirming that white youths use marijuana in the same percentage as African American and Latino youth.”).

¹⁷⁴ Alternatively, it may be that police in Washington were more likely to stop non-white drivers relative to white drivers before *Arreola* because of existing problem with racial bias or profiling. If this were the case, we might expect marijuana to serve as the basis for a larger number of searches incident to stops of Black and Latino drivers in Washington than white drivers before marijuana legalization. If this were the case, then marijuana legalization should theoretically have an even greater downward effect on the number of searches of Black and Latino drivers, incident to arrest, than white drivers. Under this theory, any evidence that searches of non-white drivers actually *increased* (rather than decreased) relative to searches of white drivers may be particularly probative to the presence of racial profiling after *Arreola*.

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By contrast, if police responded to *Arreola* by engaging in more racial profiling, we would expect this to result to be more evident during the daytime rather than at night. Prior studies of racial profiling have often operated under the belief that racial profiling happens when police officers are able to ascertain a driver's race, usually through visual observation, and then use this observation in deciding whether to execute a traffic stop.¹⁷⁵ Presumably, police officers will generally be able to determine the race of a suspect more easily during the daytime than at night. Thus, if *Arreola* is driving the apparent change in the treatment of non-white drivers by Washington state troopers from 2013 to 2015 rather than marijuana legalization, we would expect this effect to be concentrated in the daytime hours rather than at night. The next subpart employs this “veil of darkness” methodology¹⁷⁶ as a robustness check of our findings.

C. *Effect of Daylight on Stops*

The validity of the conclusions from the difference-in-difference regressions in Part IV.B. rests on an assumption that our models capture the variables most likely to influence police behavior surrounding traffic stops. While we believe our model captures most of these variables, it remains particularly difficult to account for the legalization of recreation marijuana. Ordinarily, we would be able to capture this by including a dummy variable for the legalization of marijuana (coded as either 1 or 0) to tease out the effect of marijuana legalization from the effect of *Arreola*. But that approach does not work in cases like this where marijuana legalization and *Arreola* occurred at approximately the same time. Instead, we rely on a different type of robustness check, which we believe allows for us to say with reasonable confidence that the effects we observe are more likely to be the result of *Arreola* rather than marijuana legalization.

If the changes we observe are truly the result of increased racial profiling, we would expect the changes to be most evident during daylight hours when it is easiest for police officer to discern the race of the driver.¹⁷⁷ Thus, if the hypothesized link between racial profiling and pretextual stops is true, we would expect this apparent effect to be strongest during daylight hours and weakest during the darkest hours of the night and morning.

To test this, we run triple-differences regressions that mirror the difference-in-differences regressions from the previous subpart but add one more layer of analysis that compares the difference-in-differences estimates between daylight, dusk, and dark hours of the day. We define the “daylight

¹⁷⁵ See *supra* note 145 and accompanying text.

¹⁷⁶ *Id.* (describing the prior usage of the veil of darkness methodology).

¹⁷⁷ See *e.g.*, Grogger & Ridgeway, *supra* note 133 (describing this methodology in detail).

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hours” as the time between sunrise and sunset, and we define “dark hours” as the time between the end of nautical twilight in the evening and the start of nautical twilight the next morning. The remaining window, which we describe as “twilight hours,” covers the period between nautical twilight and sunrise in the morning and the time between sunset and the end of nautical twilight in the evening. Since it is not clear whether an officer could visually observe a driver’s race during twilight hours, we exclude stops made during these hours (which make up only 6% of stops).

Figure 5 presents our findings on the differences between stops of non-whites during the daytime and nighttime after *Arreola*, relative to whites. This table shows the change in the stops per month at night (as compared to daytime) of non-white drivers as compared to white drivers. If police are engaged in racial profiling after *Arreola*, we would expect to see police stopping more non-white drivers relative to white drivers during the day, and we would expect this imbalance to dissipate at night. Again, this figure shows the number of stops of non-white drivers at night relative to daytime. Hence, if racial profiling is present, we would expect to see traffic stops of non-white drivers decrease more significantly at night than white drivers, resulting in negative results.

FIGURE 5, STOPS OF NON-WHITE DRIVERS AT NIGHT RELATIVE TO DAY
POST-ARREOLA

	(1)	(2)	(3)
Post- <i>Arreola</i> Stops of Non-White Drivers, Night Relative to Day	-39.313[†]	-42.235[‡]	-39.003[†]
Standard Deviation	(11.789)	(9.180)	(12.152)
Controls		X	X
Fixed Effects			X
Sample Size	35,192	35,192	35,192
R Squared	0.210	0.236	0.476

[^]p < 0.10, [†]p < 0.05, [‡]p < 0.01

As predicted, we find evidence consistent with the hypothesis that police are targeting non-white drivers for additional scrutiny after *Arreola*. Police appear particularly likely to target non-white drivers during day light hours. And at night, the number of stops of non-white drivers per county, relative to white drivers decrease by about 40 stops per county relative to daytime. These results are statistically significant with and without the introduction of controls and fixed effects.

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D. Effect of Arreola on Searches

While many social scientists have used this “veil of darkness” methodology to test for the presence of racial discrimination in police stops, some have raised concerns about whether it can fully discount alternative explanations for such variations in traffic stops.¹⁷⁸ Some scholars have argued that there may be underlying endogenous factors that researchers cannot easily observe which may influence the time of traffic stops for different racial groups.¹⁷⁹ In order to rule out the possibility that the results are being influenced by an unobserved, endogenous change in driving behavior, we disaggregate the data and employ the same difference-in-differences technique to measure the effect of *Arreola* on the probability of getting searched *after* getting stopped. That is, formally:

$$\Pr(\text{Search}|\text{Stop})_{qkt} = \alpha + b_1 \text{nonwhite}_k + b_2 \text{Arreola}_t + b_3 \text{nonwhite} * \text{Arreola}_{qkt} + \theta X + \varepsilon \quad (2)$$

¹⁷⁸ Jesse Kalinowski, Stephen L. Ross, & Matthew B. Ross, *Endogenous Driving Behavior in Veil of Darkness Tests for Racial Profiling* (2019) (unpublished manuscript), available at http://humcap.uchicago.edu/RePEc/hka/wpaper/Kalinowski_Ross_Ross_2017_driving-veil-darkness_v2.pdf.

¹⁷⁹ We use this methodology in an effort to discount the possibility that marijuana legalization is driving the results we observe in the previous section. Critics of the “veil of darkness” methodology may point out that it assumes that white and non-white individuals engage in the same driving habits both at night and during the day. But it may be that white and non-white drivers change their driving habits based on the time of day. This could complicate our ability to make any causal claims. While Kalinowski, Ross, and Ross carefully argue this point (i.e. that increases in the number of stops of white drivers relative to non-white drivers at night is not *de facto* proof of racial bias in traffic stops), the evidence they provide probably suffers from the same issue they address. Their argument is that minority drivers may shift driving habits at night as evidenced by an increase in speeding tickets. This only provides evidence to their theory if the same people in the minority group drive in the day and in the night since they are not able to observe driving habits at the individual level. For instance, their point would be better made if they were able to follow a rich set of drivers throughout the day and night, and show that the same drivers who drove carefully during the day were more likely to speed at night. The data they use do not provide this because, 1) they only observe traffic stops, so they inherently cannot observe good daylight drivers, and 2) they cannot follow individuals through the course of the day and night, so their observed difference in driving habits of minority drivers at night might be attributable to differences in the populations on the road. If this is the case, there are still factors related to driving that are shifting between day and night that they do not observe and might be biasing the results.

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This model predicts the probability of getting searched conditional on getting stopped. Whereas model (1) estimates the change in total stops per county per month, this model is measured at the individual stop level, q , in county k , at time, t . While there may be some concern with the estimation of model (1) with regard to changes in driving behavior and/or stopping practices that do not directly reflect the procedural change that occurred with *Arreola*, reshaping the dataset in this way allows us to control for any changes in driving behavior and/or police stopping behaviors since we are looking at searches of cars that have already been stopped. While model (1) gives some insight into the overall effect of *Arreola*—that is, the total increase/decrease in nonwhite stops per county per month—model (2) allows us to look more specifically at the probability of getting searched after the stop occurs which should mitigate changes many unobserved factors driving behavior.

Figure 6 employs this difference-in-differences modeling to examine the effect of *Arreola* on the probability of a non-white driver getting searched relative to white drivers. The results of this model represent the change in the probability of getting searched conditional on getting stopped relative to white drivers—so a positive number suggests an increase in the likelihood of getting searched after stopped relative to white drivers and a negative number indicates decrease in the likelihood.

FIGURE 6, EFFECT OF *ARREOLA* ON PROBABILITY OF SEARCHES OF NON-WHITE DRIVERS

	(1)	(2)	(3)
Changes in Searches of Non-Whites	0.0031‡	0.0030‡	0.0031‡
Standard Deviation	(0.0003)	(0.0004)	(0.0001)
Controls		X	X
Fixed Effects			X
Sample Size	8,257,527	8,257,527	8,257,527
R Squared	0.002	0.003	0.009

^p < 0.10, †p < 0.05, ‡p < 0.01

Figure 6 suggests that after *Arreola*, stops of non-white drivers were more likely to result in searches than stops of white drivers. Again, this is consistent with the racial profiling hypothesis. It suggests that after *Arreola*, police are more likely to utilize their discretionary authority to conduct further investigations of a non-white driver than a white driver. If *Arreola* empowered police to investigate hunches through mixed-motive traffic stops, and if these traffic stops were more likely to target non-white drivers, then

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this is the exact result we would expect. In total, we find that after *Arreola* non-white drivers experienced a 0.3 percentage point increase in the probability of a search incident to traffic stops. While that might not seem like a substantial increase in the likelihood of search incident to stop, off an average only 2.2% of stops result in searches, a 0.3 percentage point increase represents a 14% increase in the likelihood of getting searched. These results are highly statistically significant with and without the introduction of controls and fixed effects.¹⁸⁰

E. *Additional Robustness Checks*

Of course, skeptics of these findings might argue that the higher rate of searches among non-white drivers could be the result of non-white drivers simply engaging in more suspicious or unlawful conduct. But our data cuts against this explanation. To test this hypothesis, we calculate the “hit rate” of searches across our dataset—that is, the frequency with which a vehicle search leads to the discovery of contraband. We find that searches of vehicles driven by white individuals result in the discovery of contraband 15% of the time. By contrast, only 11% of searches of vehicles driven by minorities result in the discovery of contraband. Admittedly, the use of hit rate analysis

¹⁸⁰ It is also worth noting that we found *Arreola* to be associated with an increase in both consent searches and frisks of non-white drivers relative to white drivers. This is fully consistent with evidence gathered by prior scholars on how police approach pretextual investigatory stops. As Professors Charles R. Epp, Steven Maynard-Moody, and Donald Haider-Markel observed, after the Supreme Court issued its decision in *Whren*, departments across the country trained officers to use pretextual justifications to conduct so-called “investigatory stops.” EPP ET AL., *supra* note 15, at 36 (describing the institutionalization of the investigatory stop in the 1990s across American police departments). Advocates of these stops argued that they could proactively prevent criminal activity. *Id.* (describing how the International Association of Chiefs of Police “enthusiastically encouraged police departments across the country to adopt this practice,” in part because of a belief that it “may be our most effective tool for interdicting criminals.”) (internal quotations omitted). A “book-length police training text” by Charles Remsberg, which leading policing leaders have praised as an “authoritative” text on the subject, advises officers to follow several steps in employing investigatory stops. *Id.* (citing CHARLES REMSBERG, TACTICS FOR CRIMINAL PATROL: VEHICLE STOPS, DRUG DISCOVERY AND OFFICER SURVIVAL 9 (1995)). First, Remsberg says officers should develop suspicion or curiosity about a driver and identify some legal justification for a traffic stop (often a minor traffic violation). *Id.* Then, after stopping the driver, the officer should decide whether they can justify a search of the vehicle based on observation and a conversation with the driver. *Id.* at 36-37. When possible, Remsberg also advises officers to seek the consent of the driver to search the vehicle, in hopes of finding evidence criminal behavior. *Id.* at 37 The results of our regression outputs for consent searches and frisks are available upon request.

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is complicated by the fact that the State of Washington legalized marijuana during the time frame that we study. This, predictably, resulted in hit rates for vehicle searches to fall for both white and non-white drivers. But both before and after marijuana legalization, hit rates for non-white drivers remained comparatively lower than hit rates for white drivers.

We also conducted one additional robustness check. While recreational marijuana became legal for individuals over the age of twenty-one in Washington in 2012, it remained illegal for individuals under the age of twenty-one. Thus, if marijuana legalization (as opposed to *Arreola*) were driving the changes we observe in the data, we would expect this effect to be primarily visible among drivers over the age of twenty-one. Thus, as one final robustness check, we restricted our dataset to only those drivers under the age of twenty-one and re-ran our analyses. The results of the age-restricted analysis closely mirror our general findings—that is, among drivers under the age of twenty-one, stops of non-white drivers increase after *Arreola* relative to white drivers and hit rates remain lower than white drivers.

F. *Methodological Limitations*

While we believe that our results provide strong evidence that *Arreola* may be contributing to racial profiling by police officers, it is important to recognize the limitations of our dataset and methodology. First, this study focuses specifically on the Washington State Patrol, not all law enforcement behavior within the State of Washington. It is important to acknowledge that the Washington State Patrol has a somewhat different set of law enforcement priorities than many municipal police officers and sheriff's deputies.¹⁸¹ These differences in responsibilities may call into question whether our findings are generalizable to all law enforcement agencies in Washington and the United States. Despite this potential limitation, we still believe that the Washington State Patrol is a particularly useful agency in which to study the effects of judicial regulation of traffic code enforcement *because of* the fact that the agency conducts so many traffic stops all across the state. But we also acknowledge that because of state troopers' unique responsibilities for primarily enforcing traffic code across the state's highways, state troopers may differ from municipal police officers or sheriff's deputies in some systematic way that could limit the generalizability of our findings.

¹⁸¹ For a detailed description of the law enforcement priorities of this agency, see WASHINGTON STATE PATROL, *supra* note 21 (describing their primary responsibility for conducting traffic enforcement); see also *Crime*, WASHINGTON STATE PATROL, <https://www.wsp.wa.gov/crime> (describing their responsibility for “vessel and terminal safety,” certain investigation services, investigations of missing children and most wanted criminals, and collision records).

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Second, our analysis is limited to a single law enforcement agency. This is out of necessity. The Washington State Patrol was the only law enforcement agency that kept this kind of extensive traffic stop data in any of the three states (Alaska, New Mexico, and Washington) that experimented with different rules for pretextual stops. Seattle and Tacoma have kept data on traffic stops since 2005 and 2007 respectively.¹⁸² But neither of these two jurisdictions have kept consistent data on the race of the drivers stopped by police officers. And no jurisdiction in Alaska or New Mexico has collected consistent data on traffic stops sufficient for this type of rigorous analysis.¹⁸³ The depth and extensiveness of the dataset, though, helps alleviate some of the concerns about our focus on a single jurisdiction.

Third, as with any empirical study of this type, readers should view this study for what it is: “one data point in what will hopefully be a growing literature” on the effect of pretextual stop doctrines on police behavior.¹⁸⁴ An ideal study of the effect of cases like *Whren* and *Arreola* on officer behavior would ideally employ a complete dataset from a wide range of jurisdictions that keep data in a sufficiently similar manner so as to allow for cross-jurisdictional comparisons. But unfortunately, we do not live in an ideal world. Thus, our results will likely need to be replicated, hopefully in new locations as more jurisdictional variation emerges with new datasets.

V. IMPLICATIONS FOR LAW OF POLICING

Our finding has significant implications for the law of policing. First, and primarily, our results seemingly validate the predictions made by many scholars after *Whren*. Our findings suggest that legal rules giving police officers increased discretion to conduct pretextual or mixed-motive traffic stops may inevitably contribute to inequality. This realization also has significant findings for the study of police violence as our data suggests that rules granting police discretion in traffic stops will likely lead to more traffic stops of non-white drivers, with some likely escalating to more serious encounters. Second, our findings are particularly troubling in light of the lack of available avenues for redress for victims of racial profiling at the hands of police vehicular stops. And third, our results may bolster emerging proposals to decouple traffic code enforcement from the investigation of more serious criminal offenses, or to remove discretion in traffic enforcement through the integration of technological enforcement tools.

¹⁸² THE STANFORD OPEN POLICING PROJECT, *supra* note 159.

¹⁸³ *Id.* (showing in the list of available datasets that no jurisdiction in New Mexico or Alaska has provided data to the project).

¹⁸⁴ Rushin & Edwards, *supra* note 170, at 772.

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A. *Harmful Consequences of Whren*

First, our finding suggests that the U.S. Supreme Court's decision in *Whren* may play an important role in facilitating racial profiling in jurisdictions across the country. This conclusion bolsters scholarly criticism of *Whren* and suggests that some of the harmful consequences of *Whren* may have indeed come to fruition. More broadly, our findings reinforce the likely relationship between increased police discretion and inequality in enforcement. Our data suggest that, when we provide police with additional discretion, we should expect some officers to utilize that discretion in a manner harmful to communities of color.

As discussed *supra* Part III, a large and growing body of literature has found suspicious patterns in traffic stop data in communities around the United States.¹⁸⁵ These studies suggest that police in a wide number of jurisdictions may consider a driver's race—either consciously or subconsciously—in executing traffic stops.¹⁸⁶ What has remained somewhat less clear, though, is the extent to which deferential judicial decisions like *Whren* contribute to this pattern of apparent racial profiling. Why are police officers in jurisdictions across the country enforcing traffic laws more harshly against minority drivers than white drivers? Is it because of explicit racial bias? Implicit bias? A lack of existing controls? Or perhaps some combination of all of these factors? Our data suggests that decisions like *Whren* and its state equivalents may be at least one contributor to racial profiling by police officers in traffic stops. If *Arreola*, with its somewhat narrower holding than *Whren*, has seemingly contributed to an increase in stops and searches of non-white drivers across Washington, it stands to reason that *Whren* may have similarly facilitated racial profiling. By giving police officers a license to act on their hunches or suspicions through conducting pretextual stops, both *Whren* and *Arreola* may lead to more officers treating drivers of color differently because of implicit bias.

This finding should, in turn, provide a roadmap for policymakers looking to prevent racial profiling. If we want to prevent racial profiling, our findings suggest that departments may need to do more than providing officers with proper training or oversight. Our data suggest that police reform advocates concerned about racial bias in policing should consider lobbying for legislative enactments that provide additional protections from pretextual stops. With *Whren* decided a little over two decades ago, it seems unlikely that the Supreme Court will reconsider its holding anytime soon. But this

¹⁸⁵ See *supra* notes 121-145 and accompanying text (describing a wide variety of studies demonstrating apparent patterns of racial bias in jurisdictions across the country).

¹⁸⁶ *Id.*

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does not prevent states from using their legislative power to enact limitations on police authority to prevent pretextual stops.

If moving from *Ladson* to *Arreola* contributed to a statistically significant increase in apparent racial profiling by Washington state troopers, this would suggest that the *Ladson* decision did exert some influence on police behavior. It likely suppressed some stops of non-white drivers and may have reduced the willingness of police to engage in racial profiling. This realization is important, as it suggests that *Whren*'s holding was likely not merely symbolic. Had the Court ruled differently—for example by developing a rule similar to that introduced by Washington in the *Ladson* case—it is conceivable that this would have actually influenced police behavior in a way that reduced racial bias by officers. This could have had major implications for the lives of millions of Americans. As Professor Epp et al. have previously argued, traffic stops by police “matter” because “[n]o form of direct government control comes close to these stops in the sheer number, frequency, proportion of the population affected, and in many instances the degree of coercive intrusion.”¹⁸⁷ Police conduct an estimated 18 million traffic stops every year. These stops “convey powerful messages about citizenship and equality.”¹⁸⁸ Thus, states could theoretically use the *Ladson* holding as a blueprint for enacting stricter regulations of pretextual stops. And based on Washington’s experience, it seems possible that such stricter regulations on pretextual stops could have widespread implications for the relationship between police and communities of color across the country.

Relatedly, our findings may have important implications for the study of police violence. In the years since the protests in Ferguson, Missouri in 2014, media outlets and civil rights groups have attempted document the frequency of civilian deaths at the hands of American law enforcement.¹⁸⁹ Databases like those maintained by the *Washington Post*,¹⁹⁰ the *Guardian*,¹⁹¹

¹⁸⁷ EPP ET AL., *supra* note 15, at 2.

¹⁸⁸ *Id.*

¹⁸⁹ Jamiles Lartey, *US Police Killings Undercounted by Half, Study Using Guardian Data Finds*, THE GUARDIAN (Oct. 11, 2017), <https://www.theguardian.com/us-news/2017/oct/11/police-killings-counted-harvard-study> (discussing a study on the number of individuals killed by police and noting that these kinds of projects are necessary because of the “lack of reliable data on police killings”).

¹⁹⁰ *Fatal Force*, WASH. POST. (2019), <https://www.washingtonpost.com/graphics/2019/national/police-shootings-2019> (providing estimates for the number of individuals shot and killed by police from 2015 through 2019).

¹⁹¹ *The Counted: People Killed by Police in the US*, THE GUARDIAN, (June 1, 2015), <https://www.theguardian.com/us-news/series/counted-us-police-killings>

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Fatal Encounters,¹⁹² and *Mapping Police Violence*¹⁹³ have attempted to document not just the number of killings by police, but also the circumstances that contribute to these deaths. One topic, though, that has gone relatively unexplored in the growing literature on police violence is how traffic stops serve as the starting point for so many interactions between police and civilians—including those interactions that ultimately result in police utilizing deadly force. None of the existing databases provide an easy way to search for police killings that happened after police officers executed a traffic stop. Nevertheless, a quick analysis of the *Guardian* database from 2016 suggests that a substantial number of these incidents began with police initiating traffic stops.¹⁹⁴ For example, somewhere around 8% to 9% of all police killings in November and December of 2016 happened subsequent to a police traffic stop.¹⁹⁵ Thus, it seems likely that by contributing to more routine traffic stops of non-white drivers, pretextual stop doctrines could expose these individuals to a greater likelihood of coercive behavior and ultimately police violence.

B. *Lack of Options for Redress*

Second, our findings are particularly concerning because many drivers targeted in part because of their race after *Whren* have few options for redress. In *Whren*, the Court emphasized that targeting a driver for a traffic stop because of their race violates the Equal Protection Clause of the Constitution.¹⁹⁶ But as a practical matter it remains virtually impossible for a victim of such racial profiling to receive any kind of relief in these cases. Pretextual stops based on a driver's race may be particularly unlikely to result in the discovery of contraband. If police uncover no evidence of criminal

(providing detailed estimates of the number of individuals killed by police in 2015 and 2016 in the United States).

¹⁹² FATAL ENCOUNTERS, <http://www.fatalencounters.org> (providing an extensive database on police killings in the United States over many years, which has served as a major source for other similar databases).

¹⁹³ CAMPAIGN ZERO, MAPPING POLICE VIOLENCE, <https://mappingpoliceviolence.org> (also collecting and categorizing an extensive amount of data on the number of individuals killed by law enforcement over the years, with a particular focus on the ways that this violence disproportionately affects Black individuals).

¹⁹⁴ *The Counted*, *supra* note 191 (navigate to data for 2016).

¹⁹⁵ We calculated this by manually evaluating whether each killing in their database appeared to be connected with a routine traffic stop, given the descriptions of the circumstances surrounding the killing provided by the website).

¹⁹⁶ *Whren*, 517 U.S. at 813.

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wrongdoing, then one of the most important deterrents to police misconduct—the exclusionary rule—is of little practical use.¹⁹⁷

Additionally, the damage that an individual has suffered from a single unlawful traffic stop is minimal, making it highly unlikely that any potential civil defendant would take advantage of their right to seek civil damages against police officers that violate their constitutional rights under 42 U.S.C. § 1983.¹⁹⁸ If a victim of racial profiling hopes to use § 1983 to secure injunctive relief rather than civil damages, the Court’s holding in *Los Angeles v. Lyons* makes it difficult for them to have standing in federal district court because of their inability to demonstrate a likelihood of future harm.¹⁹⁹ And, of course, it can be particularly difficult to prove in a civil court or in an internal disciplinary hearing that a police officer was motivated by a driver’s race, creating significant evidentiary issues.²⁰⁰ Thus, as previous scholars have persuasively argued, it is particularly challenging for victims of racial profiling in traffic enforcement to receive relief under the current police regulatory system that requires them to navigate the Equal Protection doctrine.²⁰¹ This realization, alongside our findings of prevalent inequality

¹⁹⁷ Rachel Harmon, *Promoting Civil Rights Through Proactive Police Reform*, 62 STAN. L. REV. 1, 11 (2009) (explaining that “the scope of the exclusionary rule is inevitably much narrower than the scope of illegal police misconduct” and further explaining that “many kinds of misconduct” by police do not result in the collection of evidence that may be used or excluded from a later criminal proceeding).

¹⁹⁸ *Id.* at 10 (discussing how “inexpensive settlements” may reduce the incentive for reform via § 1983); Jason Mazzone & Stephen Rushin, *From Selma to Ferguson: The Voting Rights Act as a Blueprint for Police Reform*, 105 CAL. L. REV. 263, 276 (2017) (“The absence of punitive damages—a remedy designed to deter unlawful behavior—means any resulting judgment (or threat thereof) may be insufficient to alter police practices, even assuming compensatory damages are sufficient to prompt victims to bring lawsuits in the first place. In essence, in many instances it is not worth the trouble to even initiate the suit.”).

¹⁹⁹ 461 U.S. 95, 101-02 (1983).

²⁰⁰ This is, intuitively, because police will often hide their actual intent to target an individual because of their race behind seemingly race neutral explanations. For an example, see the discussion of this problem in the *Floyd* case, discussing in more detail *supra* notes 134-136.

²⁰¹ To be clear, our evidence alone will not make it any easier for a litigant to succeed in these cases. At best, our data merely provides evidence of the disparate impact of police behavior on communities of color, which we believe the Washington Supreme Court facilitated in its holding in *Arreola*. We believe this data alone should be sufficient to worry lawmakers and potentially inspire some policy change to limit the scope of police authority in making traffic stops. Nevertheless, our data alone cannot prove anything akin to intentional racial discrimination on the part of Washington police sufficient to satisfy the standard articulated by the U.S. Supreme Court in *Washington v. Davis* for § 1983 claims under the Equal Protection Clause.

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accompanying the granting of police discretion in traffic stops, may reinforce the need for states and localities to enact regulations that go beyond those articulated in *Whren*.

C. *Decoupling Criminal Investigations and Traffic Enforcement*

Finally, our results may support emerging scholarly calls for the decoupling of criminal investigations and traffic enforcement.²⁰² The pretextual stops that occurred in major cases like *Whren* and *Ladson* happened when police officers tasked with the enforcement of more serious criminal offenses use a technical traffic violation to justify the investigation of a hunch or suspicion. For example, in *Ladson*, Officer Mack and Deputy Ziesmer were not actually concerned about whether the driver had an expired registration sticker.²⁰³ As members of a local gang patrol unit, they suspected that the driver may be trafficking drugs.²⁰⁴ Similarly, in *Whren*, the officers were patrolling an area known for drug trafficking, seemingly in hopes of uncovering evidence of drug crimes.²⁰⁵ In each case, the officers were able to conduct a pretextual stop because the law empowered them *both* to make traffic stops *and* arrests for other criminal offenses. Some jurisdictions have experimented with the decriminalization of traffic offenses and the transferring of traffic enforcement to units of trained individuals whose only responsibility is to enforce traffic code, not to investigate and respond to

426 U.S. 229 (1976); *see also* *Village of Arlington Heights v. Metropolitan Housing Development Corporation*, 429 U.S. 252 (1977) (establishing factor that courts can consider in evaluating whether sufficient evidence exists to provide an Equal Protection violation). Thus, *Whren*, *Arreola*, and other comparable opinions may contribute to widespread racial profiling that cannot be easily addressed by police accountability mechanisms.

²⁰² For an example of this argument, *see* Jordan Blair Woods, *Decriminalization, Police Authority, and Routine Traffic Stops*, 62 UCLA L. REV. 672, 751, 756-59 (2015) (offering as one possible response the removal of police officers from the enforcement of traffic laws, particularly decriminalized traffic offenses, and transferring that authority to civilians whose only responsibility is the enforcement of traffic laws).

²⁰³ *Ladson*, 979 P.2d at 836 (“The officers do not deny the stop was pretextual.”).

²⁰⁴ *Id.* (“The officers explained they do not make routine traffic stops while on proactive gang patrol although they use traffic infractions as a means to pull over people in order to initiate contact and questioning.”).

²⁰⁵ *Whren*, 517 U.S. at 808 (describing the area under patrol as a “high drug area” and describing the officers’ purpose as the enforcement of drug laws).

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criminal acts more broadly.²⁰⁶ This kind of decoupling of traffic enforcement from other police work may result in more evenhanded enforcement, and it would presumably eliminate the use of traffic enforcement as a pretext for other criminal investigations.

Opponents of such a proposal may understandably argue that enforcement of traffic laws exposes non-law enforcement officers to unreasonable risks of physical harm. Policing, they may argue, is a dangerous job, even if an officer is primarily engaged in traffic stops. Compelling new evidence suggests that many may overestimate the risk of injuries to police officers engaged in routine traffic enforcement. Professor Jordan Blair Woods found that the risk of violence against police officers involved in routine traffic stops across 200 law enforcement agencies in Florida over a 10-year period was extremely rare.²⁰⁷ Roughly 1 in every 6.5 million routine traffic stops results in felonious killing of an officer, and 1 in every 361,111 stops results in an assault causing serious injury.²⁰⁸ This, at minimum, suggests that traffic enforcement may not be such a dangerous task so as to necessitate the involvement of traditional police personnel.²⁰⁹

Alternatively, our findings may strengthen arguments for reducing police discretion in traffic enforcement through the integration of emerging technology. Professor Elizabeth Joh has persuasively argued that traffic enforcement technologies could soon eliminate the need for most discretionary traffic stops.²¹⁰ *Whren*, she argued, has made challenges to police discretion “impracticable.”²¹¹ Instead, a number of emerging technologies could effectively supplant ordinary discretionary traffic

²⁰⁶ Woods, *supra* note 202, at 756 (2015) (citing New Zealand as an example of a jurisdiction that has experimented with such an approach between 1936 and 1992); see also DAVID H. BAYLEY, *POLICE FOR THE FUTURE* 135 (1994).

²⁰⁷ Jordan Blair Woods, *Policing, Danger Narratives, and Routine Traffic Stops*, 117 MICH. L. REV. 635 (2019).

²⁰⁸ *Id.* at 635.

²⁰⁹ While this might limit the ability of law enforcement officers to use traffic stops as a “crime-fighting tool,” and would potentially come at a significant financial cost, it would all but eliminate the current incentive for police officers to use traffic enforcement as a pretext for broader criminal investigations. *Id.* at 704; see also Steven Maynard-Moody & Michael Musheno, *Social Equities and Inequities in Practice: Street Workers as Agents and Pragmatists*, 72 PUB. ADMIN. REV. S16, S21 (2012) (explaining how “one of the primary and most institutionalized crime-fighting tools of modern proactive policing is the investigatory stop of drivers...”).

²¹⁰ Elizabeth E. Joh, *Discretionless Policing: Technology and the Fourth Amendment*, 95 CAL. L. REV. 1999 (2007).

²¹¹ *Id.* at 212-13.

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enforcement by police officers: red-light cameras,²¹² speed cameras,²¹³ automatic license plate readers,²¹⁴ telematics,²¹⁵ and more. As Professor Joh explained, such automated enforcement technologies could more fairly and consistently enforce traffic violations for speeding, vehicle defects, drunk driving, traffic light violations, and illegal turns.²¹⁶ And when applied to the facts of *Whren*, Professor Joh believes automated enforcement could have avoided interactions “that were humiliating or discriminatory.”²¹⁷ Obviously, these traffic enforcement technologies may still create significant risks of inequality in how they are developed, in the algorithms they employ, in the data they create, in where they are utilized, and more.²¹⁸ Professor Andrew Ferguson has written extensively on the risks associated with these types of advanced policing technologies.²¹⁹ To be clear, our data does not support a

²¹² See, e.g., Richard A. Retting, Susan A. Ferguson, & A. Shalom Hakkert, *Effects of Red Light Cameras on Violations and Crashes: A Review of the International Literature*, 4 TRAFFIC INJURY PREVENTION 17 (2003) (finding that red light camera enforcement results in a roughly 40-50% decrease in violations and a roughly 25-30% decrease in crashes).

²¹³ See, e.g., Richard Tay, *Speed Cameras: Improving Safety or Raising Revenues?* 44 J. TRANSPORT ECON. & POL’Y 247 (2010) (finding that in Edmonton, the installation of speed cameras resulted in reductions in injury crashes, suggesting they may have been a deterrent to unlawful speeding).

²¹⁴ See, e.g., Jason Potts, *Research in Brief: Assessing the Effectiveness of Automatic License Plate Readers*, POLICE CHIEF (MARCH 2018), <https://www.theiacp.org/sites/default/files/2018-08/March%202018%20RIB.pdf> (describing studies that show that ALPR can increase the ability of police to detect stolen cars).

²¹⁵ Joh, *supra* note 210, at 216.

²¹⁶ *Id.* at 222 (listing in Table 1 these common reasons for police exercising their discretion to make traffic stops and whether they would be a candidate for automated enforcement).

²¹⁷ *Id.* at 224.

²¹⁸ For a broader discussion of the many risks posed by emerging police technologies, see ANDREW GUTHRIE FERGUSON, *THE RISE OF BIG DATA POLICING: SURVEILLANCE, RACE, AND THE FUTURE OF LAW ENFORCEMENT* (2017).

²¹⁹ *Id.* A number of other commentators have also written detailed accounts of the potential for abuse of these emerging police technologies. See, e.g., Bryce Clayton Newell, *Local Law Enforcement Jumps on the Big Data Bandwagon: Automated License Plate Recognition Systems, Information Privacy, and Access to Government Information*, 66 ME. L. REV. 397 (2013-2014) (exploring legal and policy divides, as well as some of the potential drawbacks of these technologies); Joh, *supra* note 210, at 226-33 (describing various objections to automated enforcement of traffic laws via technological tools). The Policing Project has also done extensive research on the need to balance privacy concerns against the potential benefits of these technological tools. *Surveillance Technologies*, POLICING PROJECT,

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wholesale move from human to technological enforcement of traffic codes. Nevertheless, our data is consistent with the hypothesis that police may invariably abuse the discretion given to them in *Whren* and other similar state cases. To the extent that technological enforcement of traffic codes may limit opportunities to exercise such discretion, it is possible that a careful and well-regulated technological enforcement regime could produce more equitable outcomes.

VI. CONCLUSION

For decades, scholars have worried that *Whren* would invite racial profiling in routine traffic enforcement. This hypothesis seemed both intuitive and consistent with the large body of literature on the ways that race affects police decision-making.²²⁰ Nevertheless, the existing body of research has been unable to evaluate this hypothesis empirically. Our study provides useful support for this hypothesis. The judicial authorization of mixed-motive stops in Washington—which closely resemble the kind of pretextual stops discussed in the original *Whren* decision—was associated with a statistically significant increase in stops and searches of non-white drivers relative to white drivers in Washington. Most of this increase occurred during daylight hours, when police could most readily determine the race of nearby drivers. These findings are consistent with scholarly claims that *Whren* and state court equivalents, “permit racial bias, either explicit or implicit, to go unchecked and unpunished.”²²¹ Ultimately, these findings should serve as a sobering reminder that legal rules granting police discretion, even if they make “sense from the point of view of judicial administration,”²²² may come at the cost of inequality in our justice system.

<https://www.policingproject.org/surveillance-technology> (providing numerous resources on these types of technologies).

²²⁰ See, e.g., L. Song Richardson, *Implicit Racial Bias and Racial Anxiety: Implications for Stops and Frisks*, 15 OHIO ST. J. CRIM. L. 73, 75-81 (2017) (discussing the existing body of work showing that implicit bias and racial anxiety affect police behaviors and perceptions of potential suspects).

²²¹ Simmons, *supra* note 58, at 29.

²²² Harris, *supra* note 4, at 545.