Evaluating Claims of Disproportionate Use of Lethal Force towards Minorities by Police Officers in the United States

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Thank you to
My advisor, Professor Zoltan Hajnal
My Mom, Dad, Michelle, and Mark
My friends, who know more about my thesis than anyone, Steve and Tyler

Table of Contents

Intro

Section 1: An Overview of the Use of Lethal Force by Police Officers in the U.S.

Critiques on the seemingly disproportionate use of lethal force against minorities is not a novel issue in the United States but rather an enduring one. Amnesty International, a respected non-governmental organization, even dedicated a report to the "widespread and persistent problem of unnecessary or excessive force by police in the United States" in 2008.[1] In the report, published on June 15th, Amnesty International criticized American police officers for their rash use of force, especially towards minorities.[2] Despite such criticism, police's use of lethal force against minorities drew relatively little attention until August 9, 2014 following the shooting of Michael Brown, an 18-year old African American. The shooting was contentious because Brown was fatally shot by a White police officer, Darren Wilson, despite being unarmed.

While reports differed on the circumstances leading up to the fatal shots, with some claiming Brown was posing a threat to Wilson, and others claiming he had his hands up in surrender, ultimately Officer Wilson shot the unarmed teenager 12 times. These circumstances, which were met with public uproar, were once again stoked on July 17, 2014 with another shooting. That July, Eric Garner, a 43-year old African American, was put into a chokehold by an NYPD officer for approximately 15 to 19 seconds while Garner repeatedly said he could not breathe. Moments later Garner then fell

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[1] "Deadly Force: Police Use of Lethal Force In The United States." *Amnesty International USA*. N.p., n.d. Web. 22 Feb. 2016.
[2] "Deadly Force: Police Use of Lethal Force In The United States." *Amnesty International USA*. N.p., n.d. Web. 22 Feb. 2016.

unconscious and died on the sidewalk. A medical examiner concluded Garner was killed by "a compression of neck, compression of chest, and prone positioning during physical restraint by police."[3] His death intensified protests over police treatment of minorities.

These are just a few recent instances of questionable police treatment of minorities that the mass media has highlighted and that have raised concerns about the fair treatment of minorities by police officers. These events have drawn increasing attention to police's use of lethal force against minorities. These controversial deaths have also contributed to the American public having the lowest confidence in their police force in twenty-two years according to a 2015 Gallup Poll.[4] This loss in public confidence, compounded with the claim that minorities often disproportionally encounter uses of lethal force by police, spurred my research. My thesis will therefore aim to answer whether or not minorities currently face disproportionate amounts of lethal force by police officers in the United States. If they do, my next question is why? Is any discrepancy in the amount minorities and Whites encounter lethal force due to implicit stereotypes and institutionalized racism?

In my thesis, I will argue that the use of lethal force by police officers against minorities is disproportionate. I contend that implicit bias contributes to the disproportionate uses of lethal force against minorities in most instances. I seek to test whether certain policy variables can account for disproportionate uses of lethal force

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[3] Goldstein, Joseph; Santora, Marc (August 1, 2014)."Staten Island Man Dies From Chokehold During Arrest, Autopsy Finds". The New York Times. Retrieved June 27, 2015.
[4] Jones, Jeffrey M. "In U.S., Confidence in Police Lowest in 22 Years." Gallup, 17 June 2015. Web.

after controlling for other demographic factors. For the purpose of my research, I consider the following as the policy variables I will be examining: the racial composition of the police force, race of the mayor, race of the police chief, and the use of body cameras. I will use these metrics to show how certain policy variables can impact the degree to which lethal force can be disproportional.

Current data on the use of lethal force by police officers in the United States is difficult to obtain. Even Amnesty International stated, "Hundreds of men and women are killed by police each and every year across the United States. No one knows exactly how many because the United States does not count how many lives are lost."[5] Estimates place the number of lives lost each year at 400-1,000.[6] Amnesty International's report states, "The use of lethal force by law enforcement officers raises serious human rights concerns" and found that state laws "governing the use of lethal force by law enforcement officials…fail to comply with international laws and standards…many of them do not even meet the less stringent standard set by U.S. constitutional law."[7]

The report then illuminates how the fifty 50 U.S. states and the Washington district do not currently meet standards on the use of lethal force by law enforcement set by international law.[8] They further found that nine states have no laws governing the use of lethal force by law enforcement, and that thirteen states "do not even comply with the lower standards set by U.S. constitutional law on use of lethal force

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[5] "Deadly Force: Police Use of Lethal Force In The United States." *Amnesty International USA*. N.p., n.d. Web. 22 Feb. 2016.
[6] Ibid.
[7] Ibid.
[8] Ibid.

by law enforcement officers."[9] In summation, the primary critiques of officers' use of

lethal force is the lack of accountability, standards, and procedures among the United

States' police departments. In addition, police departments typically investigate an

incident involving lethal force internally, which calls notions of a bias trial into

question.[10] These cases are also typically handled by city or state prosecutors, who in

addition to investigating police officers for uses of lethal force, have to maintain a good

working relationship with officers because of the amount they work together.[11]

Amnesty International best sums up the current problems with officers using

lethal force in America, "police consider use of force to be a normal part of policing

operations rather than the exception."[12] The report continues by stipulating that if

officers are in a situation in which the use of force is unavoidable, then officers should

only use the "minimum amount of force" necessary to deescalate the situation.[13] These

proposals by Amnesty International would likely seem reasonable to many, and show

that common sense regulation could be the best start to applying standardized

protocols to current police practice involving lethal force."[14]

Much of the research that examined links between racial bias and the use of

lethal force by police officers was conducted in the early 1990s. The research drew

from data on the amount of deaths by police that occurred, and studies that used

simulations to test for biases in police officers. Looking at numbers and running

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[9] Ibid.
[10] Ibid.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Ibid.

simulations are the primary two methods of conducting research on the use of lethal force by police officers.[15] This is because it is nearly impossible for a researcher to observe a real scenario in which lethal force is used by a police officer. Past research has pointed to the existence of a bias by police officers towards minorities when considering lethal force. However, the extent of the problem, and the factors that effect it today, are still largely unknown. Consequentially, I seek to illuminate these factors in my thesis.

Section 2: Questions Addressed

These concerns about police violence and the need for more current and in-depth analysis have led to me two main questions. Was there a disproportionate amount of lethal force used by police officers against minorities in the United States largest one hundred cities in 2014? If so, was any of this disproportionality due to a differential in the treatment of police officers towards minorities than Whites, or due to the local conditions of cities, i.e. the murder rate. By answering these questions, I will be able to form a new vessel for further research. Overall, I aim to show the presence of a disproportionality, that is affected by certain policy variables, in uses of lethal force by police officers towards minorities.

Section 3: Overview of Research Design

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[15] James, Lois, Bryan VIlla, and Kenn Daratha. "Results from Experimental Trials Testing Participant Responses to White, Hispanic and Black Suspects in High-fidelity Deadly Force Judgment and Decision-making Simulations." Springer. N.p., 23 Oct. 2012. Web. 22 Mar. 2016.

To test this thesis, I have collected data on the number of police killings in the hundred largest cities in the United States in 2014. I have coupled this data with information on local policy variables and conditions. My policy variables will consist of coding for the race of the mayor and of the highest police official for the city, the racial breakdown of the police department, and the use of body cameras. My control variables will be the murder rate, population, median household income, percentage of people over twenty-five with a Bachelors Degree, and other socioeconomic indicators. Analysis of my policy variables will show if there are any racial disparities when police officers are determining whether or not to utilize lethal force. If any disparities are found, my control variables will show if the local conditions in the cities are the primary cause or not. I will separate these data points into dependent and independent variables and run a series of pairwise correlations and linear regressions on the data. The correlations and information presented through the regressions will allow me to see if there is indeed a disparity, and the variables that account or influence it.

Section 4: Overview of Results

My analysis leads to several big picture and race specific conclusions. First, my data shows there was a clear disproportionality between the averages and rates at which Whites were being killed when compared to African Americans and Hispanics. Overall, Whites are killed at significantly lower rates then African Americans and Hispanics. I next aimed to show whether this discrepancy was linked to the policy variables I tested or was an inevitable consequence of a local city's conditions. My results suggest that many policy variables played a key role in determining the size of

the discrepancy.

My most important finding was that African Americans suffered when a higher proportion of the police force was White, when there was a White mayor or Police Chief, and when the median household income and education levels in a city were higher. However, they benefited if the proportion of African Americans on the police force was higher, and if the city had an African American mayor or police chief.

Much about Hispanics and police violence is less clear, but my most important finding was that they benefitted in cities with larger populations, as the proportion of Whites on the police force increased, and if cities had an African American mayor. However, my most puzzling finding was that, contrary to popular thought, Hispanics suffered when there was a higher proportion of Hispanics on the police force.

I found that Whites benefit most when there is a higher proportion of Whites on the police force and if cities had an African American mayor. However, Whites suffered if the city had a Hispanic mayor. Across all racial groups, the primary result was that the use of lethal force between Whites, African Americans, and Hispanics was disproportionate, especially considering both African Americans and Hispanics typically made up the minority in the populations of the cities I looked at.

Chapter 1

Section 1: Literature Review

As I mentioned above, we do not yet have an accurate number of the amount of people killed by law enforcement officers in the United States each year. However, Amnesty International has estimated the number to be anywhere from 400 to 1,000 deaths per year.[16] However, data from a study on violent deaths by the Center of Disease Control does point to a discrepancy between the number of African Americans and Whites who were killed by police during 1999 to 2013.[17] African Americans represented 13.2 percent of the population in the United States at the time, yet represented 27.6 percent of the citizens killed by the police between 1999 to 2013.[18] This study suggests a large disparity between the amount in which police officers utilize lethal force against African Americans as opposed to Whites. The issue of accountability is also compounded by the fact that none of the fifty states are required to report the use of force by law enforcement officers.[19] In addition, no state requires that lethal force may "only be used as a last resort with non-violent and less harmful means to be tried first."[20] What is even more concerning is that only Georgia and Tennessee "provide by statute, training on the use of lethal force."[21] While information

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[16] "Deadly Force: Police Use of Lethal Force In The United States." *Amnesty International USA*. N.p., n.d. Web. 22 Feb. 2016.
[17] Ibid.
[18] Ibid.
[19] Ibid.
[20] Ibid.
[21] Ibid.

on deaths caused by the police may be lacking, the data above that has been reported by federal agencies and non-governmental organizations is worrisome.

The earliest study I look at is "A Garrison State in "Democratic" Society" by Paul Takagi. In this 1974 study, Takagi looks to see if there is an interaction between race and police use of lethal force.[22] Takagi's study looks at both the number of police officers killed in the line of duty, and the number of civilians killed by the police.[23] The research was prompted in reaction to a higher level of killing of police officers and citizens in 1971.[24] Takagi's conclusion strongly supports the notion that police officers are often biased by the race of the alleged perpetrator, regardless of the crime.[25] He famously concludes his study with a strong condemnation of the discrepancy he discovered between the rates at which race can affect a police officer's decision to use lethal force, insisting "that the police have one trigger finger for Whites and another for blacks."[26] In 1979, Lawrence Sherman agreed with the conclusions made by Takagi in his article "Measuring Homicide by Police Officers."[27] Sherman stated that "the demonstrably higher rates of police homicide for blacks suggests racial discrimination on a national basis."[28]

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[22] Takagi, Paul. "A Garrison State in 'Democratic' Society." Crime and Social Justice (1974): 205-19. Web.
[23] Takagi, Paul. "A Garrison State in 'Democratic' Society." Crime and Social Justice (1974): 205-19. Web.
[24] Ibid.
[25] Ibid.
[26] Ibid.
[27] Sherman, Lawrence W., and Robert H. Langworthy. "Measuring Homicide by Police Officers." The Journal of Criminal Law and Criminology (1973-) 70.4 (1979): 546. Web.
[28] Sherman, Lawrence W., and Robert H. Langworthy. "Measuring Homicide by Police Officers." The Journal of Criminal Law and Criminology (1973-) 70.4 (1979): 546. Web.

The next study I look at is by David Jacobs who published "The Determinants of Deadly Force: A Structural Analysis of Police Violence" in 1998. Jacobs looks at 170 cities and shows that racial inequality, and an increase in the African American population lead to a higher number of police minority shootings.[29] He also showed that the degree of killing by police was reduced when there was an African American mayor in the city.[30] The hypothesis he forms on how cities with African American mayors impact the number of police shootings inspired my approach to look at correlations between the race of the mayor, police chief and racial breakdown of the police force, and the number of police killings towards a certain racial group. I hope to build upon his findings by looking at what I call the "modern age of brutality" in 2014, and by looking at new policy variables that could correlate with discrepancies in the use of lethal force.

In 1993, Taiping Ho conducted a study entitled, "Individual and and Situational Determinants of the Use of Deadly Force: A Simulation." Ho conducted his study on police officers as they were trained to use deadly force. He observed officers during their training due to the difficulty of a researcher observing police using lethal force in a real life situation.[31] The study concluded that in training, officers were quicker to shoot armed African American suspects than armed White suspects.[32] He also found that these trainees were less likely to shoot armed White suspects than armed African

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[29] Jacobs, David. "The Determinants of Deadly Force: A Structural Analysis of Police Violence." *American Journal of Sociology* 103.4 (1998): 837–862. Web...
[30] Ibid.
[31] Ho, Taiping. "Individual and Situational Determinants of the Use of Deadly Force: A Simulation." American Journal of Criminal Justice AJCJ 18.1 (1994): 41-60. Web.
[32] Ibid.

American suspects.[33] However, Ho's results have been criticized because they take place in a controlled setting, the police training facility, and therefore do not examine the real life pressures officers typically face in such a scenario.[34] However, given that the initial bias was present even in the training of officers, one wonders if the training helps instill this bias, or if perhaps some officers carry prejudices into the training with them.

Testing racial bias in police officers is extremely difficult, and easy to dispute. In 2005 E. Ashby Plant and B. Michelle Peruche tested just that and published their results in an article entitled, "The consequences of race for police officer's responses to criminal suspects." They utilized a computer simulation and current police officers to see if officers had a tendency to shoot at minorities more frequently than Whites.[35] Their study concluded that initially officers were far more likely to shoot unarmed African American suspects then unarmed White suspects.[36] However, they modified their study, and once they detached the race of the suspect and the possible presence of a weapon, officers were less likely to shoot African Americans than Whites.[37] This study highlighted the strong link between the race of the alleged perpetrator and the likelihood of an officer using lethal force on them.[38]

Contrary to the Plant and Peruche study, an article in the Journal of Experimental Criminology counters the belief that police in the United States had a

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[33] Ibid.
[34] Ibid.
[35] Plant, E. Ashby, and B. Michelle Peruche. "The Consequences of Race for Police Officers' Responses to Criminal Suspects." Psychological Science 16.3 (2005): 180-83. Web.
[36] Ibid.
[37] Ibid.
[38] Ibid.

tendency to kill minorities more readily than Whites. The study was conducted by Lois James, Bryan Vila, and Kenn Daratha, and uses "60 realistic, high definition video deadly force scenarios based on 30 years of official data on officer-involved shootings in the United States" to examine if current police officers indeed had racial biases.[39] Officers were tested with scenarios involving Whites, African Americans, and Hispanics, and were analyzed on the key response variables of reaction time and shooting errors.[40] The results contradict many of the studies above, as they found that officers took longer to shoot African American suspects than White or Hispanic suspects.[41] They also found that officers were more likely to shoot unarmed White suspects than unarmed African American or Hispanic suspects.[42] They found that any biases worked in favor of African-Americans when officers were deciding to use lethal force.[43] The study acknowledges that the results conflict with countless studies on minorities and the use of lethal force, and suggest, "The favoring of Black suspects [could] be a consequence of administrative measures (e.g., education, training, policies, and laws)."[44] The results, while contradictory to other studies, succeed in offering a different side of the equation.

Section 2: Limitations with Existing Literature

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[39] James, Lois, Bryan VIlla, and Kenn Daratha. "Results from Experimental Trials Testing Participant Responses to White, Hispanic and Black Suspects in High-fidelity Deadly Force Judgment and Decision-making Simulations." Springer. N.p., 23 Oct. 2012. Web. 22 Mar. 2016.
[40] Ibid.
[41] Ibid.
[42] Ibid.
[43] Ibid.
[44] Ibid.

The largest challenges facing the study of police violence is a lack of current information, and researchers' inability to be present during actual incidents. Because of these challenges, researchers have traditionally focused on simulations and the number of deaths to identify biases. Existing literature is also limited because it does not represent the current state of the use of lethal force and the polices that may now influence it. As I discussed previously, it is incredibly difficult to receive any reliable numbers from any agency of the U.S. government because the tracking and accountability system for police violence does not really exist. However, technology has brought with it new methods of information gathering. I will be grounding my study in one of these methods: crowdsourcing. Crowdsourced information has become increasingly verifiable, and has provided the most complete picture of police violence yet in the United States.

Section 3: Theories and tests

In addition to providing new data, I will be testing several core hypotheses that came out of previous research. First, given the studies I have discussed above that found that African Americans were more likely to be killed than Whites, and considering all of the recent media accounts of minority deaths, I expect to find a clear racial disproportionality between the rate at which Whites are killed by police officers using lethal force and the rates at which African Americans and Hispanics are being killed. Second, I expect to see that some of my key policy variables, the race of the mayor and the city's highest ranked police official, the amount each race is on the police force, and the use of body cameras will correlate with the rate at which lethal force is

used on each of the three races. Consequentially, I expect to see that the presence of

some policy variables are responsible for an increase or decrease in the discrepancy of

minorities killed more frequently then Whites by police officers in the United States in

2014.

Chapter 2

Section 1: Research Design and Methodology

I am looking at homicides that were the result of uses of lethal force by police officers in the United States in 2014 to see what, if anything, helps explain the number or degree of deaths of Whites and minorities. I am particularly focusing my analysis on minorities as there are claims that the use of lethal force by police officers in the United States has been disproportionate. I define lethal force as close to its legal definition as possible: "An amount of force that is likely to cause either serious bodily injury or death to another person."[45] My scope will be the one hundred most populated cities in the United States in 2014. I examine the one hundred most populated cities in the United States because they have more complete data on incidents, and the socioeconomic and police department specific variables I will test. Although these one hundred cities are not necessarily representative of the nation as a whole, the patterns found here may differ from the patterns found elsewhere, it is important to note that these cities represent a large share of the American public and are more likely to include many of the nationally known cases of police violence towards minorities. In addition, all one hundred cities I will be looking at differ in population, size of police force, and racial demographics. All of this variation will allow for substantial findings to be reached, as I seek to examine the causes of disproportionate police violence against minorities in the United States.

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[45] "Lethal Force." *TheFreeDictionary.com*. N.p., n.d. Web. 22 Feb. 2016.

Section 2: Detailed Account of Data Set

My primary source of information will be from *Mapping Police Evidence,* which is a crowdsourced website that collects data on uses of lethal force by police officers in the United States. The websites data looks at the one hundred most populated cities in the United States and details the incidents concerning police violence in 2014. It also includes the many factors that can come into play when looking at lethal uses of force against minorities by police.

I will therefore use the data from *Mapping Police Evidence* as the foundation of my data set. The data from *Mapping Police Evidence* is "meticulously sourced from the three largest, most comprehensive, and impartial crowdsourced databases on police killings in the country: Fatalencounters.org, the U.S. Police Shootings Database, and KilledbyPolice.net…[they] have also done extensive original research to further improve the quality and completeness of the data; searching social media, obituaries, criminal records databases, police reports and other sources to identify the race of 91 percent of all victims in the database."[46] In addition, I will use the Census Bureau to construct the sections of my data set relating to a city's socioeconomic status. I will also use the data that the website *Governing Data* provides to populate my data set with the racial composition of police departments, and the race of the police chief's of the cities in my study. *Governing Data* obtains their data from the 2013 Law Enforcement Management and Administrative Statistics, which was conducted by the Bureau of Justice Statistics.

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[46] "City Comparison Tool." *Mapping Police Violence*. N.p., n.d. Web. 22 Feb. 2016.

Finally, I utilized various news media sources in order to determine whether or not body cameras were being used by the police forces in my study in 2014.

Section 3: Detailed Account of Variables

<u>Dependent Variables</u>

I will be using the following 16 dependent variables measured at city level in my study:

1. The Number of African Americans Killed

2. The Number of Hispanics Killed

3. The Number of Whites Killed

4. The Average Rate at Which African Americans are Killed per Hundred Thousand African Americans

5. The Rate at Which Hispanics are Killed per Hundred Thousand Hispanics

6. The Rate at Which Whites are Killed per Hundred Thousand Whites

7. The Number of Unarmed African Americans Killed

8. The Number of Unarmed Hispanics Killed

9. The Number of Unarmed Whites Killed

10. The Average Rate at Which Unarmed African Americans are Killed per Hundred Thousand African Americans

11. The Average Rate at Which Unarmed Hispanics are Killed per Hundred Thousand Hispanics

12. The Average Rate at Which Unarmed Whites are Killed per Hundred Thousand Whites

13. The Difference Between the Rate African Americans and Whites Are Killed

14. The Difference Between the Rate Hispanics and Whites Are Killed

15. The Difference Between the Rate Unarmed African Americans and Whites Are Killed

16. The Difference Between the Rate Unarmed Hispanics and Whites Are Killed

These dependent variables will allow me to test my hypothesis that minorities faced disproportionate uses of lethal force by police officers in the United States in 2014.

Independent Variables

My independent variables will allow me to show whether or not disproportionate police violence against minorities occurs due to racial prejudices or local variables. To test this, I split my independent variables into control and policy variables. Control variables speak to the local conditions in cities, while policy variables speak to factors that could be influencing any disproportionality in the use of lethal force by police officers. I will look at the following 18 independent control and policy variables:

Control Variables

1. Total Number of People Killed by the Police and All Unarmed Victims Killed by Police

   I include the total number of people killed by the police in order to have a benchmark perspective of the total amount of police killings in the United States. *Mapping Police Evidence* provided me with this number, which they

found by verifying and accumulating incidents from other crowdsourced websites.

2. The Murder and Violent Crime Rate

It is important to include this variable because it shows the local conditions of the city. If the murder or violent crime rate is high, it could provide an explanation for why police killings are higher for a certain racial group. I received this information from the FBI's Uniform Crime Reports.

3. The Population

I used information from the Census Bureau to populate this variable. The population is an important variable because it helps to establish the amount and racial composition of the citizens in a city.

4. The Percentage of People over 25 with a Bachelors Degree

I also used information from the Census Bureau to populate this variable, which speaks to the socioeconomic conditions of a city. The level of education in a city could help offer explanations for the presence of certain policing practices.

5. The Median Household Income

This variable is also useful for speaking to the socioeconomic conditions in a city, and how they can impact policing practices. These numbers were also received from the Census Bureau.

<center>Policy Variables</center>

6. Cities with an African American, White, or Hispanic Mayor

7. I researched the mayor of each of the one hundred cities, and then based on the color of their skin and last name determined their race as either African American, White, or Hispanic. For the purposes of my study these are the only three races I recorded.

8. Cities with an African American, White or Hispanic Police Chief

   I used information from *Governing Data* to find the race of the police chief in 2014, and then determined their race as African American, White, or Hispanic based on their skin color and last name. Similar to the above variable, I only recorded these three races in my study.

9. The Size of the Police Force

   I used information from *Governing Data* to fill in this data source, and used it to see if the amount of minorities in a city affected the size of its police force.

10. The Percentage of African Americans, Whites, or Hispanics on the Police Force

    This variable is used to see the percentage of Whites, African Americans and Hispanics on the police force, and also comes from *Governing Data*.

11. Use of Body Cameras

    I used various news media sources to determine whether or not a city was utilizing police body cameras in 2014. By tracking this, I could see if body cameras had an effect on any of the dependent variables I was testing.

I analyzed this wide range of independent variables as local control and policy variables in order to better discern the presence of an implicit racial bias; whether it

existed in the city's leadership or police department; or if any disproportionality could be attributed to the local control variables.

Section 4: Limitations

Before closing Chapter Two I would like to briefly address the possible limitations of my data sources. As I have stated, the United States federal government does not legally require police departments to submit many metrics related to the uses of lethal force by police, especially uses of deadly force against unarmed victims. As a result, I turned to crowdsourced data, which can be best understood through an explanation of the term. In the late 2000s the phenomena of crowdsourcing primarily marked a major shift in the way businesses launched their products. A business no longer had to be the sole funder of an item, and could then allow the public to receive perks in return for donations of the item. Crowdsourcing has since had a powerful impact on companies that otherwise would not have survived without it. As I researched data on the use of lethal force in the United States, I discovered another dimension to crowdsourcing. I found countless websites with information on the use of lethal force by police officers in the United States against minorities that was all crowdsourced.

These websites only exist because people are coming together to compile this data for the public. Crowd-sourced information gives a voice to those who have none, and clarity to complicated matters, such as police violence. However, as a result of the user inputted data, it is important to disclose that some of the data regarding the instances of lethal force could be incorrect due to intentional or accidental error.

However, my data was also compiled using reputable sources such as the Census Bureau. This disclosure is not meant to diminish my findings, but to provide total transparency of my methods and approach. Crowdsourced information is still a novelty in most fields of study. However, as researchers continue to investigate difficult topics such as disproportionate uses of lethal force against minorities, communities will increasingly come together to supplement the information currently available from the United States federal government.

Lastly, it is important to note that I am only examining one year of data. This short period of time could reflect an anomaly in an otherwise larger period of time. In addition, I am only examining the one hundred most populated cities in the country. There still remains the possibility that my results will not be representative of the rest of the country. Concerning my variable selection, there are many additional variables I could have examined in order to expand the depth of information on police violence. Finally, perhaps the largest limitation I faced was that it is nearly impossible to prove if any of the deaths I base my results on were warranted or unwarranted. Regardless of these possible limitations, I believe the results presented below still contribute to those researching disproportionate uses of lethal force by police officers against minorities in the United States.

Chapter 3

Section 1: The Averages and Rates of the Use of Lethal Force by Police Officers

After an examination and comparison of the averages and rates at which each race is killed by the police generally or unarmed, I identified key discrepancies between police killings of minorities and Whites. My next task was accounting for these discrepancies. The analysis that follows shows how I isolated key policy variables, such as the race of the highest ranked police official in the city, the race of the mayor in the city, and the racial composition of the police force and ran correlations and linear regressions in order to try and account for the discrepancies noted.

I begin my analyses by examining the average amount each race is killed by the police and how often the deaths occur when victims are unarmed. I first look at the average amount each race is killed by the police (see Table 1.1). The data showed that 4.23 African Americans were killed on average in each city in 2014 in comparison to the .92 Whites that were killed on average in each city. That means that African Americans were killed over four times more than Whites on average in 2014 in the one hundred largest American cities. 1.4 Hispanics were killed on average during 2014, which is also a higher rate then Whites. Both minority figures are troubling. I do not seek to go into the nuances engaged by police officers determining to use lethal force, simply to highlight the massive inequality occurring between White, African American, and Hispanic deaths regardless of circumstance

Table 1.1-Average Amount Each Race is Killed by Police

Metric	Average

Total Whites Killed	0.92
Total Hispanics Killed	1.4
Total African Americans Killed	4.23

Data Source: *Mapping Police Evidence*

I have just shown that a greater number of African Americans and Hispanics die at the hands of police, which suggests a bias. But what happens when we control for the size of each group in each city? Are the biases still evident? Are they more prominent? In order to account for any skews that different cities' minority populations might present, I calculated the average rate at which each race was killed in each city per hundred thousand citizens of that racial group (see Table 1.2). On average, for every hundred thousand African American residents, police killed 1.8 African Americans. That compares to only .46 Whites per 100,000 Whites. The comparable figure is .84 Hispanics for every 100,000 Hispanic residents.

By combining all of the White and non-White police homicide figures, we see just how much worse the problem of police homicide is for minorities. African Americans are killed at rate that is roughly four times higher then the rate at which Whites are killed. Hispanics are killed at a rate, which is more than twice the rate at which Whites are killed. The differences between the rates at which African Americans and Hispanics are killed in comparison to Whites continues to point to a discrepancy in how race can impact a police officer's decision to use lethal force.

Table 1.2- Rate Each Race is Killed on Average by Police

Metric	Average

Rate of White Killing Per Hundred Thousand	.46
Rate of Hispanic Killing Per Hundred Thousand	0.84
Rate of African American Killing Per Hundred Thousand	1.8

Data Source: *Mapping Police Evidence*

One could, however, argue that total police killings might overstate the racial bias. Many, if not most, of police killings may be justified. One of the critical factors in determining whether a police homicide is justified is whether or not the victim was armed. Unarmed police homicides receive an enormous amount of attention and are often cited as the most egregious incidents of police violence. To begin to examine police killings that take into account the circumstances surrounding the killing, I next looked at data regarding the average number of unarmed killings by police officers. Since police officers are often considered as not having a bias towards a particular race, this controversial data could be more evenly spread out among the races (see Table 1.3).

However, the results once again suggest that there is indeed a racial disparity. To clarify, lethal force should only be utilized by police officers who feel that their own or other persons' lives are immediately threatened. As a result, when lethal force is utilized against an unarmed victim, it raises questions on the motives of the police officer. It is particularly questionable when we see that lethal force is used disproportionally against unarmed victims from certain races. On average in 2014, .74

unarmed African Americans officers and .31 Hispanics were killed by police officers in

each city. Both of these numbers are higher than the average of .27 unarmed Whites

that were killed by police. The clearly disproportionate number of unarmed killings by

police again points to the possible presence of a racial bias among United States

police officers in 2014.

Table 1.3- Average Each Race is Killed Unarmed by Police

Metric	Average
Total Unarmed Whites Killed	.27
Total Unarmed Hispanics Killed	.31
Total Unarmed African Americans Killed	.74

Data Source: *Mapping Police Evidence*

      However, similar to the general kill rates I discussed above, it is important to

note that the population differences between each racial group could have skewed my

results. So I looked at the rate of unarmed killings of each race per one hundred

thousand, and continued to see a notable disparity (see Table 1.4). There were .54

unarmed African Americans killed per hundred thousand African American residents

and .22 Hispanics killed per hundred thousand Hispanic residents, versus .15 Whites

killed per million White residents. Unarmed African Americans are again being killed

almost four times as often per hundred thousand citizens than Whites. The smaller gap

between the rate of Hispanic and White unarmed killing suggests a slightly less

pronounced - yet still significant - problem for Hispanics. This data continues to

suggest racial bias among police officers determining whether or not to use lethal force

on an unarmed African American or Hispanic.

Table 1.4- Rate Each Race is Killed Unarmed on Average by Police

Metric	Average
Rate of Unarmed White's Killed Per Hundred Thousand on Average	.15
Rate of Unarmed Hispanic's Killed Per Hundred Thousand on Average	.22
Rate of Unarmed African American's Killed Per Hundred Thousand on Average	.54

Data Source: *Mapping Police Evidence*

<u>Main Story</u>

All of the data firmly suggests that a differential or bias plays a role in police deciding whether or not to use lethal force against a minority group. In addition, at the data's core, it is clear that America's one hundred largest cities had a race problem in 2014 due to the disproportionate rates at which African Americans and Hispanics, on average, were being killed by police regardless of circumstance.

Section 2: Correlations Between Dependent and Independent Variables

The next analysis I performed on my data set was run a series of pairwise correlations between my dependent and independent variables. I did this for two reasons. First, these correlations offer a preliminary assessment of the factors that might motivate police killings. In particular, I wanted to see if there were any key policy variables that correlated with police behavior. Second, because I have a relatively small

number of cases and several independent variables that are correlated with each other,

it is not possible to include all of my independent variables in all of the models. The

correlations then allow us to look at every variable of interest. Because of the size of

the sample I am examining, I considered up to a .25 confidence interval as potentially

significant. I primarily looked at three key policy variables: the race of the highest

ranking police official in each city, the race of the mayor in each city, and the

percentage of a racial minority on the city's police force.

The rate at which African Americans are killed by police is also correlated with

the racial makeup of the police force. As Table 2.1 shows, fewer African Americans are

killed as the share of African Americans on the police force increases and as the share

of Hispanics on the police force decreases. In fact, the rate of African American killings

decreased drastically when the percent of African Americans on the police force was

higher. This correlation seems to align with previous research about the impact of a

city having an African American mayor. Simply put, if there is a higher proportion of

African Americans on the street policing, they are less likely to kill a member of their

own race in general or when they are unarmed. This finding suggests that the African

American police officials and officers band together to limit instances of killing of

African American citizens. By contrast, the fact that a higher proportion of Hispanics on

the police force was associated with an increase in the rate of African Americans that

were killed suggests that there could be an inter-minority discrimination between

African Americans and Hispanics.

Table 2.1- Rate of African Americans Killed by Police

African American Police Chief	Percent of Hispanics on the Police Force	Percent of African Americans on the Police Force
-.21+	.25+	-.18+

Significance Levels: +<.25, *<.1, **<.05
Data Source: *2014 Largest 100 Cities Data*

I next looked at the rate of Whites killed by police (see Table 2.2). The correlations suggest that the key policy variables could potentially impact police killings. In cities with an African American mayor, the rate at which Whites were killed unarmed by the police drops .22 points, yet in cities with a Hispanic mayor the rate at which Whites were killed rose by .24 points. I found these two correlations fascinating, and am unsure how an African American mayor can lower the rate of killings but a Hispanic mayor can raise the rate of killings. It is likely other unknown variables that contribute to these puzzling discoveries.

Overall, what I found most interesting was how much the rate of Whites killed was effected by the presence of a Hispanics or Whites on the police force. The correlation between the percent of Whites and Hispanics on the police force showed that as the percentage of Hispanics on the police force increased, the rate of Whites killed significantly increased. I found this interesting, and am unsure how to interpret it, as it suggests that there could be a racial discrimination between Whites and Hispanics, or just a result of unrelated circumstances. However, the rate at which Whites are killed went down .2 points when there was a higher percentage of Whites on the police force in a city. This rate suggests that White police officers were more hesitant to kill White citizens in general or unarmed. This could be attributed to the

notion that a member of a certain race wants to limit the killing of other members of their own race.

Table 2.2- Rate of Whites Killed by Police

Percent of Whites on the Police Force	Percent of Hispanics on the Police Force	African American Mayor	Hispanic Mayor
-.2**	.24+	-.22+	.24+

Significance Levels: +<.25, *<.1, **<.05
Data Source: *2014 Largest 100 Cities Data*

The next dependent variable I looked at a correlation on was the rate of Hispanic killed by police (see Table 2.3). The correlations suggest that the key policy variables could potentially impact police killings by race. The correlation was between the percent of Whites and Hispanics on the police force. The correlation showed that when there was a higher amount of Hispanics on the police force the rate of Hispanics killed went up by .15. This suggests that there could be a racial discrimination between Hispanics on the police force and Hispanics in the general population. The rate at which Hispanics were killed by the police also dropped .22 points when there was a higher percentage of Whites on the police force. These two correlations raise more questions than answers, as they indicate that Hispanics were more likely to be killed by other Hispanics on the police force, and that it is more beneficial for Hispanics when there are more Whites on the police force. Both of these observations defy common sense, because you would think Hispanics would want to limit the killing of other Hispanics. In addition, it directly contrasts the data regarding the rates at which African Americans are killed which suggested that the rates went down in the presence of a

higher amount of African Americans on the police force, and went up when there was a higher amount of Whites on the police force.

The final correlation concluded that in cities where there was an African American mayor in office, the rate at which Hispanics killed dropped .15 points. This is a significant drop, and it can possibly be attributed to the notion that African American officials take special note of other minorities because they are aware that White police officers and officials can hold a bias towards them. However, it is worth noting I found no correlation between the rate at which Hispanics were killed and the presence of a Hispanic mayor or police chief.

Similar results were seen when I ran a correlation on the rate of unarmed Hispanic killed by the police. The correlations suggest that one of the key policy variables could potentially impact police killings by race. The rate of unarmed Hispanics killed by the police went up .18 points in the presence of a White mayor. This was a surprising correlation given that previous data had repeatedly shown that the rate of Hispanics killed by the police went down where there was a higher percentage of Whites on the police force in a city. However, this data suggests that while Whites on the police force lowers the rate of Hispanics killed, the presence of a White mayor raises the rate of killing by .18 points. This once again poses more questions then answers, such as why does a White mayor lead to more Hispanic deaths, yet more Whites on the police force leads to less Hispanic deaths? One would think that a White mayor could not influence the rate of deaths as much as the White officers on a police force.

Table 2.3- Rate of Hispanics Killed by Police

African American Mayor	Percent of Whites on the Police Force	Percent of Hispanics on the Police Force	White Mayor
-.15**	-.22**	.15+	.18+

Significance Levels: +<.25, *<.1, **<.05
Data Source: *2014 Largest 100 Cities Data*

I next looked to explain the difference between the rate of Hispanics and Whites killed by the police (see Table 2.4). The correlations suggest that the key policy variables could potentially impact police killings by race. Here the analysis showed that a primary cause for the different rate between Hispanics and Whites killed by the police was the percent of Whites and Hispanics on the police force. The correlation showed that when there was a higher amount of Whites on the police force the difference between the rate of Hispanics and Whites killed by the police went down .16 points. This aligns with my earlier find that the rate of Hispanics killed by the police goes down when there is a higher percentage of Whites on the police force. Also, similar to the other data point, the rate at which Hispanics are killed went up by .16 points when there was a higher percentage of Hispanics on the police force in a city. Both of these observations continue to confirm the counter intuitive nature by which the rate of Hispanics killed was affected by the presence of Hispanics or Whites on the police force. Overall, the correlations involving the rate of Hispanics killed leaves more questions then answers.

Table 2.4- Difference Between Rate of Hispanics and Whites Killed by Police

Percent of Whites on the Police Force	Percent of Hispanics on the Police Force
-.16**	.16+

Significance Levels: +<.25, *<.1, **<.05

Data Source: *2014 Largest 100 Cities Data*

I next ran a correlation on the difference between the rate of African Americans and Whites Killed by the police (see Table 2.5). The correlations suggest that one of the key policy variables could potentially impact police killings by race. The correlation was between the percent of African Americans on the police force. The correlation showed that, when there was a higher amount of African Americans on the police force, the rate of African Americans killed went down by .16. This once again aligns with the earlier data regarding the rates of African Americans killed and the postulation that African Americans are less likely to kill a member of the same race.

Table 2.5- Difference Between Rate of African Americans and Whites Killed by Police

Percent of African Americans on the Police Force
-.16**

Significance Levels: +<.25, *<.1, **<.05
Data Source: *2014 Largest 100 Cities Data*

I next looked at a correlation on the difference between the rate that unarmed African Americans and unarmed Whites were killed by the police (see Table 2.9). The correlations suggest that one of the key policy variables could potentially impact police killings by race. The difference between the rate of African Americans and Whites killed unarmed by the police dropped in cities with a Hispanic mayor. This was an interesting correlation as it suggests that a Hispanic mayor can help to equalize any disparities between the amount of unarmed African Americans and Whites killed even though previous correlations suggested that African Americans generally fare worse under a

large amount of Hispanics on the police force.

Table 2.6- Difference Between Rate of African Americans and Whites Killed Unarmed

by Police

Hispanic Mayor
-.22**

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

　　The last dependent variable I used a correlation on was the difference between

the rate of unarmed Hispanics and Whites Killed by the police (see Table 2.10). The

correlations suggest that three of the key policy variables could potentially impact

police killings by race. The first correlation was the percent of Whites on the police

force. The correlation showed that, when there was a higher amount of Whites on the

police force, the difference between the rate of Hispanics and Whites killed unarmed

by the police went down by .22 points. This aligns with the previous correlations that

suggest that Hispanics fare better when there is a higher percentage of Whites on the

police force. However, when there was a strong presence of African Americans on the

police force, the difference between the rates at which both races are killed unarmed

increased .19 points. This result is curious because this is the first correlation that

suggests that the presence of African Americans on the police force negatively impacts

Hispanics. The last correlation was that, in the presence of a Hispanic mayor, the

difference between the rates at which Hispanics were killed unarmed went down .24

points. This was the first correlation to suggest that cities with a Hispanic mayor

actually assisted Hispanics and worked to balance the scale of Hispanics and Whites

killed unarmed.

Table 2.7- Difference Between Rates of Hispanics and Whites Killed Unarmed by

Police

Hispanic Mayor	Percent of Whites on the Police Force	Percent of African Americans on the Police Force
-.24**	-.22**	.19+

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

Main Story

     I used the the pairwise correlations between my dependent variables and my

independent variables in order to see if any key policy variables could account for the

discrepancies in general and unarmed police killings of Whites, African Americans, and

Hispanics that I noted in Section 1. I had several notable findings which I will briefly

summarize. The rate that police killed African American was lower when the highest

ranking police official was an African American and when there was a higher

percentage of African Americans on the the cities' police force. The rates of Whites

killed decreased when there was a higher amount of Whites on the police force. Both

Whites and African Americans followed the notion that a race is less likely to kill a

member of the same race. However, date on Hispanics repeatedly raised doubt about

that notion. The rate of Hispanics killed goes down when there is a high amount of

Whites on the police force. For African Americans, the most important point appears to

be that there is a disparity in the way they are treated by White police officers in

comparison to the way Whites are treated. In line with the idea that African Americans have a higher degree of linked fate with each other, African Americans fare better with an African American mayor, who perhaps mayors encourage racial toleration or discourage racial discrimination.[47] Linked fate refers to the "feeling closeness to others who identify with the group label and involves the acceptance of the belief that individual life chances are inextricably tied to the group as a whole."[48] Essentially, when you help members of your fellow race, you help yourself.[49]

Whites also appear to have a certain degree of linked fate with other Whites because Whites are less likely to be killed when there is a higher proportion of White police officers.[50] Hispanics are the most complicated of the three races because there are several counterintuitive conclusions. The best explanation of why Hispanics suffer more when there are more Hispanics on the police force could be because of the broad nature of the racial term Hispanic. Hispanic can encompass a fairly large group of individuals because sometimes it is presented as the only option on a survey for any Latin American to select. As a result, they could have a lower level of linked fate because there are so many different ethnic groups within the general category of Hispanic.[51]

Section 2: Regressions Utilizing Dependent and Independent Variables

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[47] Dawson, Michael C. Behind the Mule: Race and Class in African-American Politics. Princeton, NJ: Princeton UP, 1994. Print.

[48] Dawson, Michael C. Behind the Mule: Race and Class in African-American Politics. Princeton, NJ: Princeton UP, 1994. Print.

[49] Ibid.

[50] Ibid.

[51] Ibid.

The final section of my analysis is seven linear regressions involving my dependent and independent variables. I utilized these regressions to help identify relationships between my dependent and independent variables. Similar to my pairwise correlations, regressions differ in that I am able to see the degree to which many independent variables account for a particular dependent variable controlling for other factors. I used seven of my dependent variables in the regressions, excluding the averages that each race is killed generally or unarmed. I also used a set of local control variables: the population, the percentage of people over 25 with a Bachelor's Degree, the median household income, total number of people killed by the police, all unarmed victims killed by the police, the murder rate per million, and the violent crime rate per million. I am utilizing these particular local control variables because it is extremely difficult to conclude that race accounts for all the data regarding the use of lethal force by police officers. As a result, it is important to account for the local conditions in each city, and the effect that they can have on my dependent variables.

For each regression I also used several policy variables: the race of the mayor, the race of the highest ranking police official, the percentage of a certain race on the police force, and the use of body cameras at the time. For the policy variables involving race, I used the race of the dependent variable in question. For example, for the regression concerning unarmed African Americans killed, I considered the variables: African American mayor, African American police chief, and the percentage of African Americans on the police force. I divided data on the chief of police and mayor by race in order to offer a more in depth examination as to why certain races fare better with mayors or police chiefs of certain races. Because of my sample size, I am accepting up

to a .25 confidence interval as significant. For each regression I aimed to stitch

together a tentative story about the dependent variable by identifying the effect that

local control and policy variables had on the dependent variable in question. I did this

by analyzing the relationship of my control and policy variables, contextualizing the

information by stating how many observations the regression is based on, and by

looking at the adjusted R-squared of the regression. The adjusted R-squared of the

regression indicates how much of the dependent variable is explained by the

independent variables ran in the regression. In addition, the number of observations

differ between each regression due to the disparity between the information that cities

make public and the information that remains confidential.

I first ran a regression using the rate of unarmed African Americans killed as my

dependent variable. The adjusted R-squared, or the amount which my independent

variables accounted for the phenomena, was .42. I had 56 observations total. The

independent control variables that were significant were the total number of people

killed by the police, the total amount of unarmed victims killed by the police, and the

murder rate per million. The rate of unarmed African American killed went down as the

total number of people killed by the police went up by .66 points. That the rate rose as

the number of unarmed victims of the police increased better highlights my prior data

that hinted at a racial bias among police deciding whether to use lethal force on an

unarmed victim. The rise in the rate that occurs with the increase of the murder rate

also seems consistent with the previous notion that police officers exhibit a difference

in the lethal process. The control variables that were significant were the population

and the percent of people over 25 with Bachelor's Degrees. The rate of African

Americans killed rose .0000022 as the population increased, and rose 14 points as the

amount of people over 25 with Bachelor's Degrees went up. The first data regarding

the population conforms with the notion that African Americans face bias among police

officers, since even as population rises, African Americans are a minority in the cities in

question. The spike in the rate of unarmed persons killed in conjunction with the

amount of people over 25 with Bachelor's Degrees increased also suggests that

African Americans experience police violence disproportionally in cities where people

are more educated.

Table 3.1- Rate of African Americans Killed by Police
Adjusted R-Squared: .42
Number of Observations: 56

Variable	Coefficient (Std. Error)
Total Number of People Killed by the Police	-.65 (.24)+
All Unarmed Victims Killed by the Police	7.2 (.01)**
Murder Rate Per Million	.27 (.23)+
Violent Crime Rate Per Million	-.3 (.41)
Population	.0000022 (.09)*
Percent of People over 25 with B.A.s	14 (.24)+
Median Household Income	.000024 (.27)
African American Mayor	.31(.29)
African American Police Chief	-1.9 (.27)

Percent of African Americans on the Police Force	-12 (.28)
Body Cameras in Use in 2014	1.9 (.26)
Constant	-.0000067 (.88)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

My next regression used the rate of unarmed Hispanics killed as my dependent variable. The adjusted R-squared was .53, one of the higher adjusted R-squared I encountered in my study, which had 53 observations total. The most significant independent control variables were the total number of people killed by the police, and the total amount of unarmed victims killed by the police. The rate of unarmed Hispanics killed dropped as the total number of people killed by the police went up by .69 points. This data point seems counterintuitive when compared with the rest of my data, as the prior two sections consistently showed that minorities faced disproportionate lethal force by police officers in the United States. However, the rate went up three points as the amount of unarmed victims killed by the police increased. This rate increase could possibly show that the difference between general kills and unarmed kills could be a crucial difference. As the data shows, Hispanics are killed in greater numbers as more unarmed victims are killed. This raises further questions surrounding the detailed circumstances of the shootings, but highlights significant complexities involved in unarmed and general killings.

Table 3.2- Rate of Unarmed Hispanics Killed by Police
Adjusted R-Squared: -.08
Number of Observations: 53

Variable	Coefficient (Std. Error)
Total Number of People Killed by the Police	-.69 (.04)*
All Unarmed Victims Killed by the Police	3 (.0013)**
Murder Rate per Million	.19 (1.7)
Violent Crime Rate Per Million	-.19 (4.1)
Population	-.00000063 (1.2)
Percent of People over 25 with B.A.s	4.4 (1.0)
Median Household Income	.000055 (1.6)
Hispanic Mayor	.8 (6.7)
Hispanic Police Chief	-1.9 (3.5)
Percent of Hispanics on the Police Force	2.8 (6.8)
Body Cameras in Use in 2014	-1.1 (2.5)
Constant	.00000038 (9.3)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

My following regression used the rate of unarmed Whites killed as my dependent variable. The adjusted R-squared, or the amount that my independent variables accounted for the phenomena, was .51. This was another one of my higher adjusted R-squared, which had 51 observations total. The independent control variable

that was significant was the murder rate per million. The rate of unarmed Whites killed

went down .14 as the murder rate rose. This suggests that as more crime occurred and

the murder rate rose, fewer Whites were being killed. This could speak to the local

conditions in the city, which may be primarily responsible for the amount of deaths in a

city. The policy variable that was significant was the percent of people over 25 with

Bachelor's Degrees. The rate of unarmed Whites killed fell 8.1 points as the amount of

people over 25 with Bachelor's Degrees went up. This observation continues to affirm

the notion that in cities with a large educated White populace, police instead choose to

regulate minorities more heavily. This new data point adds to that notion by suggesting

that, while minorities are policed heavier in educated cities, Whites enjoy less policing

and thus are killed at a lesser rate by officers when unarmed.

Table 3.3- Rate of Unarmed Whites Killed by Police
Adjusted R-Squared: .01
Number of Observations: 51

Variable	Coefficient (Std. Error)
Total Number of People Killed by the Police	-.21 (1.9)
All Unarmed Victims Killed by the Police	.61 (5.8)
Murder Rate Per Million	-.14 (.24)+
Violent Crime Rate Per Million	.19 (1.9)
Population	-.00000024 (5.7)
Percent of People over 25 with B.A.s	-8.1 (.23)+
Median Household Income	.000023 (7.1)
White Mayor	1.1 (1.2)

White Police Chief	-.77 (1.1)
Percent of Whites on the Police Force	-1.6 (4.2)
Body Cameras in Use in 2014	.3 (1.2)
Constant	.0000014 (6.1)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

My next regression used the difference between the rates of unarmed Hispanics

and Whites killed as my dependent variable. The adjusted R-squared was .09, one of

my lower adjusted R-squared, and there were 49 observations total. The independent

control variables that were significant were the total amount of unarmed victims killed

by the police, the violent crime rate per million, and the murder rate per million. The

difference between rates of unarmed Hispanics and Whites killed went up 1.7 points as

the amount of unarmed victims killed by the police went up. This seems to confirm the

notion that unarmed minorities are killed disproportionally by police officers and that

the rate rises as the overall number of unarmed victim's increases. The difference

between the rates also went up .46 as the murder rate rose. This could signify that the

local variables of the city primarily account for this rate increase. As the number of

people killed in general increases, so to does the number of disproportionate minority

killings. Curiously, the difference between the rates went down .54 as the violent crime

rate rose. This could either be better explained through other unknown variables, or

understood through the notion that cities with higher violent crime rates have police

officers that are more accustomed to crime committed by all three races, and as a

result, they are less likely to utilize lethal force. The policy variables that were significant were cities with Hispanic mayors. The difference between the rates of unarmed Hispanics and Whites killed went down 7 points when there was a Hispanic mayor in office. This is the first confirmation of the notion that having a Hispanic mayor can lower the rate at which unarmed Hispanics are killed. Further, it also supports the idea that minorities work to mitigate the unarmed deaths of citizens of the same race.

Table 3.4- Rate Difference of Unarmed Hispanics and Whites Killed by Police
Adjusted R-Squared: .09
Number of Observations: 49

Variable	Coefficient (Std. Error)
Total Number of People Killed by the Police	-.48 (3.6)
All Unarmed Victims Killed by the Police	1.7 (.12)+
Murder Rate Per Million	.46 (.04)**
Violent Crime Rate Per Million	-.54 (.23)+
Population	.00000004 (1.0)
Percent of People over 25 with B.A.s	6.2 (1.3)
Median Household Income	.0001 (1.5)
Hispanic Mayor	-7 (.23)+
Hispanic Police Chief	1.8 (3.4)
Percent of Hispanics on the Police Force	1.1 (1.0)
Body Cameras in Use in 2014	-1.9 (.26)
Constant	-.0000048 (8.1)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

I next used a regression to look at the difference between the rates of unarmed African Americans and Whites killed by police. I did this calculation in order to see what accounts for the significant difference between the rates at which police killed unarmed African Americans and Whites. The adjusted R-squared, was .16 and I had 49 observations total. The independent control variables that were the total amount of unarmed victims killed by the police, and the murder rate per million. The difference between the rates of unarmed African Americans and Whites killed went down 5.7 points as the amount of unarmed victims killed by the police went up. This is one of the first data points to suggest that a greater number of unarmed Whites were killed as the number of unarmed African Americans decreased. The rate went up .42 as the murder rate rose. This seems to be the work of local variables. The policy variables that were significant were the presence of a White mayor and the percentage of Whites on the police force. The difference between the rates of unarmed African Americans and Whites killed fell 4.2 points in cities with White mayors. I found this observation curious, as it is the first one to suggest that White mayors lower the number of deaths of unarmed African Americans. In addition, the difference between the rates rose by 1.5 points as the amount of Whites on the police force increased. This relationship is more in line with my previous findings that state as the percentage of Whites on the police force rises, so to does the rate at which unarmed African Americans are killed by police.

Table 3.5- Rate Difference of Unarmed African Americans and Whites Killed by Police

Adjusted R-Squared: .16
Number of Observations: 49

Variable	Coefficient (Std. Error)
Total Number of People Killed by the Police	-.12 (.55)
All Unarmed Victims Killed by the Police	5.7 (.01)**
Murder Rate Per Million	.42 (.22)+
Violent Crime Rate Per Million	-.42 (5.5)
Population	-.0000015 (1.6)
Percent of People over 25 with B.A.s	.44 (1.8)
Median Household Income	.0002 (2.1)
White Mayor	-4.2 (.24)+
White Police Chief	1.1(.32)
Percent of Whites on the Police Force	1.5 (.21)+
Body Cameras in Use in 2014	.7 (.35)
Constant	-.0000221 (1.8)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

The next regression I considered was using the difference between the rates of

African Americans and Whites killed as my dependent variable. The adjusted R-

squared was .28 and I had 61 observations total. The independent control variables

that were significant were the violent crime rate per million. The difference between the

rates of African Americans and Whites killed went up 2.1 points as the violent crime

rate per million went up. This rate difference can likely be best explained through the local conditions in a city. However, it still suggests a disparity at the rate at which African Americans were killed by police rather than one in the rate at which Whites are being killed by the police. The policy variables that were significant were the median household income and the percent of Whites on the police force. The difference between the rates of African Americans and Whites killed rose by .00069 points as the median household income increased. This finding seems to confirm previous data, which showed that minorities are more likely to be policed disproportionally in more affluent neighborhoods. The difference between the rates also went up 4.5 points as the percentage of Whites on the police force increased. This further supports the idea that when there are more Whites on the police force, a greater number of African Americans are killed by the police force.

Table 3.6- Rate Difference of African Americans and Whites Killed by Police
Adjusted R-Squared: .28
Number of Observations: 61

Variable	Coefficient (Std. Error)
Total Number of People Killed by the Police	.64 (.93)
All Unarmed Victims Killed by the Police	3.2 (3.0)
Murder Rate Per Million	2 (.43)
Violent Crime Rate Per Million	2.1 (.04)**
Population	-.0000016 (.31)
Percent of People over 25 with B.A.s	1.7 (.27)
Median Household Income	.00069 (.07)*

White Mayor	-.25 (.63)
White Police Chief	4.8 (.57)
Percent of Whites on the Police Force	4.5 (.01)**
Body Cameras in Use in 2014	.29 (6.0)
Constant	-.0000918 (.27)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

The final regression I considered used the difference between the rates that

Hispanics and Whites were killed as my dependent variables. The adjusted R-squared,

was -.04, the only negative adjusted R-squared I had in my regression, and I had 60

observations total. The independent control variables that were significant were the

total amount of unarmed victims killed by the police and the violent crime rate per

million. The difference between the rates of Hispanics and Whites killed rose .56 points

as the amount of unarmed victims killed by the police increased. This continues to

support the idea presented in the previous regression that Hispanics suffer from police

violence disproportionally because the rate at which they are killed rises as the total

number of unarmed victims rises. In addition, the difference between the rates went up

.99 as the violent crime rate rose, which suggests that local variables in the city play a

significant role in the difference between the rates.

Table 3.7- Rate Difference of Hispanics and Whites Killed by Police
Adjusted R-Squared: -.04
Number of Observations: 60

Variable	Coefficient (Std. Error)

Total Number of People Killed by the Police	-.6 (7.0)
All Unarmed Victims Killed by the Police	.56 (.22)+
Murder Rate per Million	-.081(.29)
Violent Crime Rate per Million	.99 (.23)+
Population	-.0000011 (2.1)
Percent of People over 25 with B.A.s	7.5 (1.6)
Median Household Income	.00023 (2.1)
Hispanic Mayor	-1 (1.11)
Hispanic Police Chief	-3.7 (5.3)
Percent of Hispanics on the Police Force	4.7 (1.0)
Body Cameras in Use in 2014	-.36 (4.5)
Constant	-.0000142 (1.5)

Significance Levels: +>.25, *>.1, **>.05
Data Source: *2014 Largest 100 Cities Data*

Main Story

I performed the regressions in order to see which variables contributed to explaining the dependent variables. There were several notable discoveries that I will briefly summarize. The significant control variables for the rate in which African Americans were killed in general and unarmed were the total number of people killed

by the police, the total amount of unarmed people killed by the police, and the murder rate. The results of the regressions raise several concerns about the existence of a differential in the way that police use lethal force against minorities. The policy variables that were significant for the rates concerning African Americans were the population and the percentage of people over twenty-five with Bachelor's Degrees. The significant control variables for the rates of Hispanics killed in general and unarmed were the total number of people killed by the police, and the total amount of unarmed people killed by the police. Some questions remain about the impact of police violence on Hispanics because there were no significant policy variables. The significant control variable for the rates of Whites killed in general and unarmed killed was the murder rate. The significant policy variable for rates concerning Whites was the percentage of people over 25 with Bachelor's Degrees.

The main story for African Americans was that they are killed in greater numbers in cities with higher crime, which raises a number of questions. How can we account for this extreme disproportionality? Are African Americans truly committing crimes at higher rates? Or are they victims of biased police departments? The main story for Whites is that they benefit in cities that are more educated, likely because Whites are typically more educated then African Americans and Hispanics, and thus police could be less prone to use lethal force against Whites than other groups. In other words, police officers are more reluctant to utilize lethal force against Whites. The main story for Hispanics is once again largely a puzzle. I refer back to my previous hypothesis that, because the term can encompass so many racial groups with varying levels of linked fate, it can be more difficult to categorize the actions committed against

Hispanics' as a general group like African Americans or Whites.[52]

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[52] Simien, Evelyn M.. "Race, Gender, and Linked Fate". *Journal of Black Studies* 35.5 (2005): 529–550. Web...

Conclusion

Section 1: Policy Recommendations

After working with the data, or lack thereof, on this topic, it is clear there is the need for immediate policy changes to improve accountability, standards, and protocols regarding uses of lethal force by police officers in the United States. First, there is no real system to track uses of lethal force by police or the circumstances surrounding them. This system needs to be created at the federal level, and implemented nationally. Its purpose needs to be aimed at accumulating incidents involving the use of lethal force by police officers, and there also needs to be a committee tasked with investigating suspicious incidents. Next, non-lethal but debilitating weaponry must be integrated more heavily into police officers' arsenals. Officers need to be trained to use items such as Tasers, or guns loaded with bean bag (non-lethal) rounds, so that encounters necessitating the subduing of an aggressor are not lethal.[53] Third, the federal government needs to implement a series of standardized protocols and requirements that guide police officers' decisions to use lethal force. The lack of national standardization has resulted in wide discrepancies in states' laws concerning uses of lethal force. Fourth, as I showed in my results, when police departments have a racial composition that is not representative of their communities' populations, the use of lethal force against minorities often is often high. Police departments need to make a more concerted effort to expand hiring to all racial groups and be mindful of the effects a racial imbalance can have on incidences of lethal force. Fifth, though they did not

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[53] "Alternatives to Bullets." The Marshall Project. N.p., n.d. Web. 28 Mar. 2016.

appear prominently in my study, body cameras have also proved to be a useful tool in

aiding with accountability.[54] I postulate that they did not play a larger role in my study

because my data focuses on 2014 and many police departments did not use them at

this time. As a result, there was only a small sample size to draw from. Overall, the

enactment of these policies could assist in curbing the current disproportionate use of

lethal force by police officers against minorities based on the data I used from the one

hundred largest cities in the United States in 2014.

Section 2: Remaining Questions

Every topic explored in this thesis could very well have its own thesis on it. The

use of lethal force by police officers in the United States, and the role racial biases play

in police officers' decisions are all incredibly complex issues. In an age of subtler racial

discrimination, it is nearly impossible to conclude whether any real race differential

exists. However, I believe this thesis provides a new stepping stone for further

research. If I were to continue my study, I would expand my time frame and the

amount of cities I analyze. I would spend more time focusing on smaller cities, and

inquire about their demographic breakdown. I would also attempt to contact the

federal government to request all of the information they have on uses of lethal force

by police officers. Finally, I would expand the independent variables I use in order to

find the correct mix that can even more reliably account for disproportionality in uses

of lethal force by police officers.

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[54] "7 Findings from First-ever Study on Body Cameras." PoliceOne. Force Science Institute, n.d. Web. 28 Mar. 2016.

In the context of my thesis, I partly anticipated the results I received for Whites and African Americans. However, my findings on Hispanics still leaves some unanswered questions. If I were to continue my study, I would dedicate a large amount of time to further exploring the difficulties that the broad Hispanic category poses for analysis. Overall, I found more information then I anticipated in my work. I found results I predicted, and several results that I did not. I believe the data set I have constructed and the correlations I have noted will prove a reliable tool for researchers interested in examining the disproportionate uses of lethal force by police officers against minorities in the United States.

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