THE MILITARIZATION OF POLICE'S EYES, EARS, AND HANDS: THE 1033 DEPARTMENT OF DEFENSE PROGRAM AND POLICE SAFETY OUTCOMES

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THE MILITARIZATION OF POLICE'S EYES, EARS, AND HANDS:

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ABSTRACT

The current state of race relations in Baltimore, Ferguson, and New York have brought to light the issues of police legitimacy and trust with police officers and the citizens they serve to protect. The results of these conflicts have brought to light the militarization of local police, where officers are being provided with unused equipment from the government's war chest. But why are these police being heavily armed? Is there truly a threat? Using data on police equipment purchases provided by NPR and assaults on police officers provided by the FBI, this investigation analyzes the effects of purchases on the count of assaults on police officers. Negative binomial regressions on state-month level data shows that the compounded summation of surveillance purchases have a negative, but substantively insignificant, effect on assaults across both linear and quadratic models, while military grade weapons purchases exhibit a significantly positive increase on the risk ratio of assaults under a quadratic model. Results are discussed in light of psychology research on procedural justice and trust of law enforcement, and implications for the policy arena are developed, recommending a decrease in the program's use in regards to weapon-based purchases. Future work continuing this analysis with stronger controls, more data points, and other datasets are considered.

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CHAPTER ONE

INTRODUCTION

The image of two armored vehicles rolling down the streets of a small, 21,000 resident city, made national news. The small city of Ferguson, Missouri, which had just became the next headline in a string of police shootings, found itself facing swift condemnation on the police department attempting to handle protests and riots. The Department of Defense, in a quick statement, quickly recalled the vehicles. But still, the question remained – were those trucks necessary? Were they helping to protect the officers or citizens? And if so – from what threat?

In 1996, Congress approved of the National Defense Authorization Act. A section of this act, called the 1033 Program, authorized the Secretary of Defense to "transfer to Federal and State agencies personal property of the Department of Defense, including small arms and ammunition, that the Secretary determines is— (A) suitable for use by such agencies in counter-drug activities; and (B) excess to the needs of the Department of Defense."(S 153-2576a). This program sanctioned the transfer of military grade equipment to local police for an extremely low price – to the magnitude that a $733,000 mine-resistant, ambush protected vehicle sold to Connecticut for $2,800 (Wofford, 2014).

And yet, Ferguson simply was a highlight to an overarching concern. Across the nation, there are countless SWAT (Special Weapons and Tactics) forces, with 80% of cities between 25,000 and 50,000 people have a dedicated SWAT team which raid over 50,000 times a year (Fund, 2014).These forces, first started by Los Angeles in 1967, were meant to combat the drug

trade and fight gangs and heavily armed suspects that an average officer may be unfit to handle, such as at a college campus (Balko, 2013).

The actions in Ferguson, and now in Baltimore, Chicago, San Francisco – and too many more to name – have motivated individuals to seek to find ways to keep both officers and citizens more accountable for these interactions through the use of body cameras and more observational-based, evidence-based actions. It has been shown that body cameras increase trustworthiness of law enforcement (Press, 2014).

The following paper seeks to analyze the efforts by the Department of Defense to protect its officers from harm through equipping them with military grade equipment. I will evaluate the effect of purchasing both weapons and cameras, along with other tools, on the amount of police assaults in following months. I will contextualize my examination under the presumption that military equipment is visible to the average citizen and causes feelings of distrust and fear in the average citizen, which will be backed by empirical evidence. After examining my results, I will discuss the implication of the results and suggest some further avenues for research.

CHAPTER TWO:

INSTITUTIONAL BACKGROUND

The 1033 program is so named as it was the 1033rd section to the National Defense Authorization Act in 1997, voted on by Congress in 1996. (Nat'l Defense Authorization Act for Fiscal Year 1997, Pub. L. No. 104-201, § 1033, 110 Stat. 2422, 2639^0 (codified at 10 U.S.C. § 2576a)) Prior to this, the National Defense Authorization Act of 1990 had provided the transfer program strictly for "counter-drug activities" (Wofford, 2014) but, in 1996, this was amended to allow transfers for all " bona fide law enforcement purposes that assist in their arrest and apprehension mission" (Agency, n.d.) The Department of Defense, through the Law Enforcement Support Office (LESO) under the oversight of the Defense Logistics Agency, provides county, state, and federal law enforcement officers with surplus equipment from the various wars. This is beyond armored cars and land mines, but extend to undergarments, air conditioners, and sonar equipment. Agencies are required to use the equipment within a calendar year, lest it be revoked and sent back to the DLA (Walker, 2014).

Ferguson, a city with merely 21,000 residents, was able to have access to these military grade tools (Walshe, 2014) even though some reports state that many states have no system in place to examine the efficiency or amount of time the equipment is taken out (ACLU, 2014). This image was most prevalent at the high of the Michael Brown protests in Ferguson, Missouri, where police were facing peaceful protesters with assault rifles, armored trucks, and tear gas (Swaine, 2015), and President Obama called on the Pentagon to remove the armored vehicles from Ferguson.

And that is the state of the United States. Paramilitarization, or the increase in a military-structured taskforces, has been on the rise in the United States since the 1980's. As of the late 1990s, a survey found that ninety percent of police departments in cities over 50,000 citizens had paramilitary units (Kraska, 2007). These task forces typical train with army and navy officers, and many have stated that this trend is encouraging law enforcement to "view the inner-city urban environment [as] a war zone" (Meeks, 2006, p. 36).

The question is – if law enforcement is preparing for a war in the urban environment, is there evidence that this war exists? And, more importantly, are these purchases, in some way, winning the war for the police? Or, is it the case that this growth in police power – the arming and changing culture – is reducing tension, increasing conflict, and putting our law enforcement in more danger and in closer proximity to civilians than they would otherwise? Most importantly, does equipping our officers with surveillance equipment – equipment that could provide them with a better understanding of the civilians in which they interact with and perhaps increase the trustworthiness of police officers – reduce the violence against law enforcement?

CHAPTER THREE

PREVIOUS RESEARCH

While the discussion around the police-state and protection has gone on for quite some time (Miller, 1996), most discussion around the rise in the power of the police in the United States has been theoretical in nature. Of the work that is not theoretical, much of that work is qualitative interviews with police officers, their experiences with coping with stress (Biggam, Power, & MacDonald, 1997), feelings of invulnerability (Dorn & Brown, 2003), or general work hazards (Brandl & Stroshine, 2012). However, as this issue has been developing over the last thirty years, some research surrounding police, weapons, and assaults on officers does exist.

Research on Weapons

Analysis from North Carolina's introduction of pepper spray, could not find any significance on reducing police officer assaults back in 1993 (Ashcroft, Daniels, & Hart, 2003), while a 1998 study showed a decrease in assaults in Baltimore county, Maryland with the implementation of pepper spray by 3.2 assaults per month (Kaminski, Edwards, & Johnson, 1998). A multinomial logit model was run in which researchers found that OC only assisted in making an arrest easier 70.7% of the time (Kaminski, Edwards, & Johnson, 1999), which is significantly lower than other estimates that range in the 90 to 100% range (Phillips, 1994; Robin, 1996).

Some researchers have likened this effect to the sound that is made when police arm thesmelves with it – the "Velcro effect" (Kaminski, Edwards, & Johnson, 1998). In this way, simply the threat of using the pepper spray was hypothesized to reduce the amount of assaults against officers. Yet, some researchers question this conclusion. Buttle (2005), namely argues

that it is not simply the spray, but the appearance and décor of the officer that deters assaults. His argument surrounds the notion that it "is the officer's ability to appear competent and ready to fight" (Buttle, 2005, p.133) that reduces assaults, as the carrying of a baton, of better uniforms, of body armor – all provide, in some way, a sign to citizens that this person should not be attacked.

Other work has examined the other classic, non-military based weapon – that of the taser, or conducted energy device (CED). A logistic regression on five years of data comparing seven departments that did use tasers and six departments that did not use tasers showed that those who deployed CEDs saw reductions in officer injuries, suspect severe injuries, and injuries for both officers and subjects that required some medical attention (Taylor & Woods, 2010). When analyzing taser use in arrest-related deaths, researchers found that deployment of a taser continued resistance in nearly 60% of cases, and that other force (most often physical) was required before and after deployment (White et al., 2012). Other analysis of New York's use of the taser pointed towards that while nearly all suspects were engaged in some form of violent behavior, just fewer than half of suspects were armed (White & Ready, 2010).

Assaults on Officers

Some research makes the claim that officers who are married are less likely to be killed than officers who are single, and that this could be due to a change in decision making and risk seeking by those with additional responsibilities (Kachurik, Ruiz, & Staub, 2013). More interestingly, they also found that officers on the force for more years were more likely to be killed than officers with fewer years. While the authors were not able to make sense of such a result, it seems plausible to assume the more years one has been indoctrinated in a culture of

fear, the more likely they are to react in an aggressive or risk-adverse manner, which may risk their own lives. Grennan's (1987) research shows at least part of this idea to be true, in that officers who have been involved in more prior firearm incidents were more likely to be injured than those who had been involved in fewer incidents in the past. However, other research showed that additional years of service on the force decreased the odds of injury for officers significantly (Kaminski & Sorensen, 1995).

Much of research on officers surrounds what type of call is the most risky to take – which call will most likely cause an injury to an officer. To this extent, Stanford & Mowry (1990) found that while general disturbance calls were most likely to receive an assault, domestic disturbance calls were the calls most likely to cause injury to officers, while others have found the reverse to be true (Hirschel, Dean, & Lumb, 1994). Other research finds even different calls as most dangerous (Ellis, Choi, & Blaus, 1993) to the extent it may be safest to assume all calls are equally dangerous.

In an examination on assaults on Boston police officers, Kaminski, Jefferis, & Gu found that a one standard deviation increase in resource deprivation in a given community block was associated with a 31% increase in assaults on police (2003), with one standard deviation increases on arrests and violence being associated with 60% and 40% increases in expected assaults. An early OLS stepwise multiple regressions back in 1974 also showed that both narcotics arrests and residential stability were the most powerful explanatory predictors when it came to analyzing assaults on police (Regens, Meyer, Swanson, Chapman, & Wilson, 1974). Other research supports the idea that having a partner in law enforcement present decreases the amount of assaults an officer will face (Wilson, Brunk, & Meyer, 1990).

Prior research using the datasets that will be used in the presented research has been limited in scope, but a first attempt at analyzing the data found no within state effect in the protection of officers injuries, while also showing small, significant positive effects on assaults with increase in transfers from the 1033 program (Wickes, 2015). Stewart & Oliver (2014) found that initiatives in Texas involving homeland security were not significantly associated with threat levels or incidents that required higher measures of security, but instead simply the amount of security related grants a given police department received.

In general, research has shown a variety of communal based factors that contribute to the safety of police officers. Some work has studied some of the equipment carried by officers – pepper spray and tasers – but none of the work gets at the increase in military based equipment and their protection (or tension) by the officers. Just as some researchers state that the symbol of the uniform may send a message, so it may too send a message of distrust and conflict. As officers are being more and more trained with Navy Seals, Army veterans, and being shown images of brutal shootings, it may make sense why they are quick to draw a military-based behavior out of a civilian based situation, especially if they are being equipped with battle-ready surplus.

The Psychology of Procedural Justice and Trust of Officers

The previous literature provided evidence for the increase in military-grade weapons being given to police officers, and that there is a growing understanding of the risks associated with being a police officer. Some of these risks have attempted to be mitigated through equipping of pepper spray, tasers, higher-grade uniforms, and weapons. However, this literature has failed to acknowledge the other targets of these changes in policy – the citizens. Policing has moved from

"a focus on acting against crime which is in the process of occurring or on solving already committed crimes to a proactive strategy of preventive measures aimed at deterring future crimes" (Tyler, Jackson, & Mentovich, 2015, p.604). This preventive state causes concerns and issues – police must be more suspicious and distrustful of citizens (*could THEY commit a crime in the next moment?)* which was highlighted clearly in light of the controversy around New York's stop and frisk policy (Goldstein, 2013).

Across time, we have seen a decrease in the trust of police officers – 53% reported having high confidence in police in 2014, a historic low since 1993 where it was 52% (Gallup, 2015). The question of trust – and through trust, legitimacy of authority, has been studied frequently within the legal system (see Jackson et al., 2012, Jackson, Aziz, Bradford, & Tyler, 2013, Tyler & Jackson, 2014 for some examples). By approaching individuals with suspicion, the police are perceived of being unfair and are not genuinely caring about the community's needs (Gau & Brunson, 2012), breaking relational bonds and risk damaging the identity of the community as one of "us" to one of "us versus them" (Tyler & Lind, 1992). A sample of 1,603 individuals showed that feeling suspected by police was linked with negative beliefs of police motives, lower legitimacy, and higher levels of disorder in the community (Tyler et al., 2015). Examining the perceived procedural justice – or perceived fairness of the system - of individuals has been found to be extremely predictive of support of the system and its legitimacy (Tyler, 2006) and are in general more compliant with orders (Tyler, 2009), and are more favorable in outcomes even when it may not benefit them (van der Toorn, Tyler, & Jost, 2011). Those who find the system to be non-legitimate are aggressive in their non-compliance and may strike out against the officers.

There have been signs of technology that can mediate this growing division between police officers and citizens in the implementation of body worn cameras on police officers. The seminal randomized controlled trial that tested body worn cameras in the United States found that use-of-force against citizens reduced by half compared to the control group in the Raitlo Police Department (Ariel, Farrar, & Sutherland, 2014). Other studies found 50% less likelihood to exhibit force when a camera was on (Henstock, 2015) and reduce false allegations against officers (Grossman et al., 2015; White, 2014).

It could be the case that overall, there is a positive Velcro effect that protects officers. This effect does not rule out the secondary case – that this effect, while working, may be at the same time increasing the conflict in more subconscious, non-overt waysCitizens, who see themselves facing a police force in heavier gear, using more advanced technology, and carrying more heavy-caliber weapons – while fearing the retributive justice of the officers, are angered by the procedural injustice of the officers.

This present study addresses these fundamental questions. While prior work has examined how certain gear such as tasers or pepper spray has assisted police officers in their arrests, or what contextual conditions are more likely to result in assaults against police, but very little work has been done examining how assaults against officers is changing over time. Based off work that shows decreases in assaults and reparations of trust when officers utilize body cameras, this study examines the effect of both weapon and surveillance purchases on trust of police officers, operationalized as the amount of assaults against police officers.

CHAPTER FOUR

METHOD

Data

National Public Radio received a dataset from the Department of Defense detailing out all purchases made by states in conjunction with the '1033' program (Rezvani, Pupovac, Eads, & Fisher, 2014). Each transfer is listed by item-definition by state from 2006 through March of 2014. For purchases prior to 2006, we took all purchases reported by Open Virginia (Bowden, 2015) prior to January, 2006 and summed them as a baseline. See Appendix A for mean transfers across states. The transfer dataset has 3,602 observations across 54 states, including Virgin Islands, Guam, District of Columbia, and Puerto Rico.

The FBI complies officer assaults and injuries by month through the Uniform Crime Report called the LEOKA data – or Law Enforcement Officers Killed or Assaulted data (Uniform Crime Reporting Program Data: Police Employee (LEOKA) Data, 2012). This dataset, which is released yearly, was combined together from 2006 until 2013. We are interested in two outcome variables – total assaults on police officers, and assaults on officers who are called towards civil disorder calls. Fifty-four states reported their assault data, including the District of Columbia, Puerto Rico, Canal Zone, and Guam. However, Puerto Rico has no assault data reported, even though it was included in the LEOKA reports. In total, across this 8-year span, there were a total of 4,750 observations for 49 states-months.

Analytic Sample

Florida was removed from all subsequent analyses due to only having observations of assaults in December. The Virgin Islands and Puerto Rico had no reported assault data, so they

are removed from all subsequent analyses. The Canal Zone had no reported purchases, so it was also removed from all subsequent analyses. Missing months – in which a given state saw no assaults against their officers reported, were filled in with zeroes, which is included in the above count, however this is quite small (n=40). If a state was found to have a full year worth of zeroes, these were set to missing. In total, after combining the data, there are a total of 5,340 observations across 49 states, with 3,387 state-month non-zero purchase observations and 4,652 state-month non-zero assault observations.

Variables

Outcome Variable: Assaults Against Police Officers

States report on assaults against police officers through the LEOKA dataset. Each county reports on how many officers were assaulted and what type of call they were responding to. Categories of possible calls include disturbance calls, burglaries, robberies, attempting arrest, civil disorders, custody of prisoners, suspicious persons, ambush without warnings, mental derangement, traffic stops or pursuits, and all other calls. Assaults were also coded as either assaulted by firearms, knives, hands and feet, or other. Overarching the type of call, assaults were also counted on whether or not each of the weapon used caused injury or not to the officer. This analysis focuses on general assaults (a summation of all possible call categories) without regard to injury or not. This variable – amount of assaults on officers by a given state during a given month – is a count variable. Not only are these types of variables unable to be negative (There is no state in which a negative amount of assaults could occur), but it also is on integer basis (no observation can be in decimal points of assaults).

Independent Variables of Interest: Purchases of Weapons & Surveillance Equipment

As the LESO program offered items at an extremely reduced cost, equipment transfers will be counted by quantity bought and shipped – not their cost. The unit then is a single purchase of equipment in terms of the equipment itself. I will be analyzing the militarization of police through two different indicators of police militarization – of material and of operational (Kraska, 2007). By material, I am indicating the general overt, visible qualities of militarization – weapons, armored vehicles, and body armor. By operational militarization, I am describing "patterns of activity modeled after the military such as in the areas of intelligence, supervision" (Kraska, 2007, p.3) – that of sonar, radar, photographic equipment, and communication-based devices. The NPR dataset provides these purchases in terms of their Federal Supply Class Name, and the division of if they were indicated to be a purchase of a given category can be seen in Appendix A and B.

However, equipment needs time to ship, unload, and be ideally trained in how best to use the equipment. It also takes time for the public to notice the equipment, notice its increase in its presence, and decide what to do about its existence. To account for this delay in effect, all equipment purchases will be lagged six months in time. Because the equipment comes with a "use it or lose it" attachment, we can assume that (a): the equipment has been used at least once (and therefore, should have an effect) and (b): the equipment, having been used, stays with the office and can be considered stockpiled over time.

Control Variables

Prior research (Kainski, Jefferis, & Gu, 2003) points out some of the most relevant control variables - resources and crime rates. We can control for resource levels through mean

income, unemployment percentage, and poverty percentages. Those states that face lower incomes, or higher unemployment and higher poverty, may already be aggressive against the government and upset and untrustworthy of police officers, and this lack of trust may catalyze frustration to aggression. Trust towards police officers is lowest in areas where crime rates are high (Wilson, 1975). All of these controls may also be impacting the amount of transfers, as higher crime rates may encourage police to arm themselves against the perceived threat. Beyond that, a feeling of distrust may work both ways, in that those officers who receive less feelings of trust may be untrusting of their fellow citizens, demanding more equipment to investigate and protect themselves from the masses. Having a control for the per capita police officer rate may be related to how many assaults are committed, and at the same time, may see more equipment being bought for larger police departments.

There are issues with the data that must be addressed, so as for future research to contemplate better strategies to handle examining such a question. Most state level data is taken only during the census. Other attempts at finding data, including a better proportion of black Americans, have only found limited success in the years 2010-2014 (U.S. Census Bureau, n.d.). Crime rates could be found between the years of 1998-2012 (National Archive of Criminal Justice, 2010). As noted, other data on the LESO 1033 Program exists and was used to create a baseline category, but should be investigated to see differences overall between the NPR data provided and its estimates, to see if one is providing different results than the other (Bowden, 2015). Overall, our control variables provide little within-state variation and are not perfectly suited to handle within state examination. Due to this, we will present results from both the between state regressions as well as fixed effect regressions, controlling for both time and state.

Analytic Strategy

To determine the association between assaults on officers and purchases by the state, we estimate two across time negative binomial regression models (Greene, 1994, Paternoster, Brame, Bachman, Sherman, 1997; Dietz et al., 2003). I use the negative binomial model, rather than an ordinary least squares model, because of the discrete count outcomes of the dependent variable. The negative binomial regression reports its coefficients in a difference in logs of expect counts, such that a one unit increase in our predictor would provide a β unit increase in logs of the expected count. This coefficient can be transformed into an incidence rate ratio by taking the exponential function and inserting the coefficients into the x. The provided coefficients, now in IRR terms, will be the expected factored increase given an increase of one unit in our covariate. The first model, using a six month lagged purchase to predict future assault rates, is provided below.

$$
\begin{aligned}
&Officer\ Safety\ Outcomes_{ij} \\
&\quad = \beta_0 + \beta_1(Weapons\ Purchased)_{it-6} + \beta_2(Survellience\ Purchased)_{it-6} \\
&\quad + \beta_3(Officer\ Rate)_{it} + \beta_4(Violent\ Crime\ Rate)_i \\
&\quad + \beta_5(Poverty\ Rate)_{it} + \beta_6(Miscellaneous\ Con\square rol\ Variables)_{it} \\
&\quad + (State\ and\ Month\ Fixed\ Effects) + \epsilon_{ij}
\end{aligned}
$$

In this equation, the total counts on a state *i* at time *t* is being predicted by a six-month prior purchase of both weapons and surveillance equipment purchased in quantity of purchases. Crime rate is the state crime rate in 2004, and officer rate is the amount of police officers for every 1,000 people in a given state at a given month. However, the purchases are not lost at the next month. Instead, states are continually collecting and acquiring this equipment and therefore a more meaningful measure of purchases is the compounded summation of purchases for each state *i* at time *t,* which is shown in model two.

$$
\begin{aligned}
&Officer\ Safety\ Outcomes_{ij} \\
&\quad = \beta_0 + \beta_1(Weapons\ Stockpile\ in\ Hundreds)_{it-6} \\
&\quad + \beta_2(Photo\ Stockpile\ in\ Hundreds)_{it-6} + \beta_3(Officer\ Rate)_{it} \\
&\quad + \beta_4(Violent\ Crime\ Rate)_{ij} \\
&\quad + \beta_5(Poverty\ Rate)_{it} + \beta_6(Miscellaneous\ Control\ Variables)_{it} \\
&\quad + (State\ and\ Month\ Fixed\ Effects) + \epsilon_{ij}
\end{aligned}
$$

Finally, there assumes to be a chance that the 1,000th stockpiled weapon does not have equal effect as the 10,000th stockpiled weapon – that there are diminishing returns to continued purchases. Adding the squared term of both weapons and photos into the model can examine if there are marginal differences across purchases over time, which is modelled in model three.

$$
\begin{aligned}
&Officer\ Safety\ Outcomes_{ij} \\
&\quad = \beta_0 + \beta_1(Weapons\ Stockpile\ in\ Hundreds)_{it-6} \\
&\quad + \beta_2(Weapons\ Stockpile\ in\ Hundreds\ )^2{}_{it-6} \\
&\quad + \beta_3(Photo\ Stockpile\ in\ Hundreds)_{it-6} \\
&\quad + \beta_4(Photo\ Stockpile\ in\ Hundreds)^2{}_{it-6} + \beta_5(Officer\ Rate)_{it} \\
&\quad + \beta_6(Violent\ Crime\ Rate)_{ij} \\
&\quad + \beta_7(Poverty\ Rate)_{it} + \beta_8(Miscellaneous\ Control\ Variables)_{it} \\
&\quad + (State\ and\ Month\ Fixed\ Effects) + \epsilon_{ij}
\end{aligned}
$$

Data Processing

The data processing steps can be summarized as follows:

Read in all fifty four states of data provided by NPR. Combine them all together into one larger dataset, where each row is a different purchase by a given county of a given state of a given month and year. Based off of the federal supply class name, assign indicators to purchases of weapon-based, surveillance based, or other categories of interest, including neither. Generate the proper time variable, and then collapse the dataset, summing across each county of the same state to produce observations for each state at a given month-year. Repeat for all states provided by Open Virginia, but restricting data to prior 2006. Collapse by summation, ending with 50 states with baseline purchases prior to 2006, calling its time variable December of 2005. Combine these 54 observations into NPR's dataset.

Open the LEOKA datasets that fill the time series (from 06 to 2013). It shows a given county's reports from a state during a specific month. Generate variables based off summing the breakdown of a given type of call the officer was out for (type of call broken down by assaulted by gun, knife, hands or feet, other) to get total assaults on a given month for county. Reshape and reform dataset so each row is a given state-month and variables read properly. Create a new dataset with the controls taken from the LEOKA datasets. Create a meaned-county officer per 1000 rate per state, a summed total employees per state from each county, and a summed population from each county per state. Repeat for each year and combine them into one dataset with a variable indicating the month and year.

Read in the NPR dataset, the LEOKA dataset, as well as the controls dataset. Collapse together by state-month-year and rename variables. Remove all observations past 2014 due to lack of LEOKA data and remove Florida, Guam, District of Columbia, Canal Zone, Puerto Rico, and Virgin Islands due to lack of LEOKA data. In the end, this leaves us with a total of 49 states, across 97 months (December 2005 + 8 years of 12 months) for a total of 4,753 cases.

CHAPTER FIVE

RESULTS

Descriptive Statistics

Table 1 gives descriptive statistics for our variables of interest. Across all states, an average of ninety assaults were found per month with forty five weapons purchased and twenty-five surveillance equipment purchased per month. Purchases broken down by state can be found on Table 2. There are an average of 1.7 officers per one thousand citizens and an average state population of around six million individuals. Our estimated population is underestimated, then, as a more accurate average state population falls around the 6.3 million category. The average natural logged income of the states is about 10.8, which falls within the national average. Model one in Table 3 examines the effects of a six-month prior purchase on later outcomes of assaults, without accounting for previous stockpiling of weapons. This is simply the effect of a six-month prior purchase on contemporaneous assaults. The negative binomial regression shows some significant effects on surveillance purchasing, such that an additional purchase of one surveillance equipment would be expected to reduce the rate of assaults by a factor of .999. It is note worthy that the direction and significance holds various across all fixed effect models. The amount of officers is associated with large increases of assaults – an increase of 1 officer per 1,000 people is expected to increase the rate of assaults by a factor of 1.40.

However, purchases as stated are not simply used and put away – they can be continually stockpiled by a given state across time. As noted, time zero is amount of stockpiled photos or weapons as reported by the Open Virignia dataset, and any purchases past January 2006 are counted through the NPR provided dataset. Model Two examines the effect of an additional

purchase of a weapon or photo cumulatively across time on assaults against police officers given a six-month lag.

In all models, surveillance stockpile points to a decrease in assaults while weapons stockpile is non-significant. An additional purchase of one hundred stockpiled weapons is expected to decrease assault rate by a factor of .9976 within a given state and month. Weapon purchases showed no effect on rate of assaults in any of the models. We see significance in all of our control variables besides poverty. An increase in officers is predicted to increase the rate of assaults against officers by a factor of 1.38. This is semi-logical, as more officers provide a greater chance to be assaulted. However, one may assume that more officers provide back up and more chances for a partner, which in the past have been shown to decrease assaults (Wilson, Brunk, & Meyer, 1990). Proportion of the population is black was a significant negative predictor of assaults. However, we are critical of the measurement error on this variable, with its mean of 49 states stating 7% Black, where the more accurate measure is around 13.6% in the United States (Census, 2010). As this variable seems to be underestimated, we can assume our estimate is larger than it should be and may move towards zero if properly defined. Income has a positive significant effect on assaults, which seems counter-intuitive and further research would need to examine this, especially in light of the obvious questionable statistics of other control variables. However, we can make a prediction. As higher income is correlated with higher tax revenue for the state, and more tax revenue means more spending, it could be the case that this revenue is paying for further trainings for police officers. This would be beneficial if the training was for good purposes, but literature seems to indicate that training for these officers involves training with the army (Meeks, 2006), perpetuating the view that citizens should be viewed as the enemy, which promotes distrust. The lack of significance on poverty may also be connected

with the issue of trust and legitimacy, since those who are the lowest in the system have been found to justify the fairness of the system as a means of cognitive dissonance from their position (Jost, Legerwood, & Hardin, 2008).

Finally, Model Three attempts to examine the effect of using a quadratic term within the negative binomial analysis. In doing so, the linear terms lose their significance but the quadratic terms become significant in both the time-fixed effects model as well as state and time fixed effects models. The weapon stockpile is significantly increasing the risk of assaults as the stockpile continues to grow, while surveillance continues to decrease assaults as the stockpiles increase.

CHAPTER SIX

DISCUSSION

The results from this study provide us with two main implications – one, that weapons are not influencing an individual's analysis whether or not to retaliate against an officer in a linear manner, while two, that surveillance equipment seems to decrease the number of assaults against officers. However, it may not be the case there is no change in the analysis – simply just a lack of change in outcomes. Officers are clearly utilizing this equipment (though prior work showed also no effect in injury-based outcomes – see Wickes, 2015) and it is clearly visible to the protesters, suspects, and citizens with whom the officers are interacting with. It could be the case that individuals are seeing this additional equipment, and rejecting it as a boundary for whether or not they should assault. This makes sense as assaults are showing a positive relationship using a quadratic predictor of stockpiled weapons, in the sense that a smaller stockpile may not upset an individual, but as the stockpile increases, so does the distrust of the citizens facing the stockpile. Their additional feelings of injustice towards the overt display of distrust from the officers may be causing them to rebel and fight back at equal if not higher rates. Yet, it could also be the case that weapons are not decreasing assaults linearly because these weapons are only being deployed for the individual SWAT teams of a given state – the original intention of the law to crack down on drugs. However, the author relies on the anecdotal evidence to discount this explanation as well as trends out of Texas that point to no correlation between crime and requests of equipment (Stewart & Oliver, 2014).

Should we increase the purchases of surveillance equipment then? An advisement of yes or no has major consequences. Some RCT's have shown that police officers who wear body-worn cameras find less complaints by citizens and report less force being used on their

interactions (Ariel, Farrar, & Sutherland, 2015) and suggest that a greater awareness of procedural fairness may have been the mediating variable within this experimental condition. But are purchases of communication and surveillance equivalent to body worn videos? It could be the case that states that are purchasing this surveillance equipment are simply just disengaging from their citizens – they are staying farther away, and it is the distance, not necessarily the equipment itself, that is causing a reduction in assaults. If this were true, then the purchases are not actively getting at the roots of procedural justice, but instead, are deflecting the situation from ever occurring.

Future Directions

The first step of this research requires us to revisit the data in a multitude of ways. For one, assault data from 2014 was just released by the FBI in March (United States Department of Justice, 2014), and so that data should be added to the dataset. Secondly, data from the UCR may be available to provide with accurate crime data on a state-year basis. If this is the case, then the whole dataset should be re-created with this control variable and considerations to reduce to a larger time analysis (every six months, or yearly) instead of by month. Finally, the results could be substantiated with analysis from both sets of data individually, and various configurations of combining the datasets. This method of using Open Virginia's dataset to provide a baseline was useful, but may be clearer if we let each dataset speak for itself.

This research track provides many further investigations. Much current work surrounding procedural justice issues are based on experimentation or phone-survey manipulations (Tyler et al., 2015, van der Toorn, Tyler, & Jost, 2011) . However, there are many larger, public datasets that can be explored in relation to procedural justice. The World Value Survey (WVS, 2016)

could be examined to see how procedural justice perceptions have changed with the rise of values shifting due to terrorism or a rise of right-wing authoritarianism and its links towards militarization.

Conclusions

This work is a first attempt at looking at how the militarization of police officers may influence the relations between officers and citizens in a non-linear manner. My analysis showed consistent results that increasing purchases of surveillance equipment can lead to decrease rates of assaults against officers, and that an increase of purchases of military-grade weapons can lead to an increase rate of assaults in a quadratic shaped model. Further analyses should be conducted to understand these effects, but they point to both a tension between citizen and law enforcement and a possible avenue towards reconciliation. I hesitate to recommend complete investment into surveillance, lest we devolve into a completely watched society. However, this work continues to build onto the scholarship of procedural justice, and warns of the effects of purchasing too many weapons without full consideration of their perceived status in the United States.

TABLES AND FIGURES

Table 1: *Descriptive statistics*

	Mean	*Standard Deviation*
Assaults	90.458	120.96
Weapons Bought	45.012	206.51
Weapons Stockpile	2518.82	3810.11
Surveillance Bought	25.027	83.19
Surveillance Stockpile	879.88	2285.30
Officers Per 1000 Citizens	1.736	.5552
Mean Population	6,015,201	6,740,077
Log(Income)	10.791	.1735
Percentage Black Population	.07631	.0893
Unemployment Percent	.07060	.0267
Poverty Percent	.10565	.0374

Table 2: *Mean Quantity of Weapons Bought on 1033 Program Across 97 Months*

Alabama	**Alaska**	**Arizona**	**Arkansas**	**California**
1659.633	10.87156	1320.073	57.55046	6025.651
(3740.696)	(32.48022)	(2743.117)	(118.6774)	(13985.98)
Colorado	**Connecticut**	**Delaware**	**Georgia**	**Hawaii**
4052844	47.6422	335.4312	1881.651	0.16667
(0.6767155)	(143.476)	(796.4859)	(3582.19)	(.6767155)
Idaho	**Illinois**	**Indiana**	**Iowa**	**Kansas**
66.3211	409.5138	587.4312	22.51376	22.08257
(143.476)	(776.4859)	(1392.611)	(55.91787)	(58.0329)
Kentucky	**Louisiana**	**Maine**	**Maryland**	**Massachusetts**
550.2294	118.6972	155.3853	116.6697	76.43119
(1203.703)	(285.6517)	(450.4577)	(245.7805)	(137.9234)
Michigan	**Minnesota**	**Mississippi**	**Missouri**	**Montana**
1186.789	96.81651	29.6789	169.7156	45.90826
(2449.611)	(181.7414)	(88.99248)	(334.8442)	(176.2868)
Nebraska	**Nevada**	**New Hampshire**	**New Jersey**	**New Mexico**
27.14679	90.99083	53.97248	200.3211	88.13761
(131.3298)	(178.5495)	(143.2101)	(685.3719)	(202.9357)
New York	**North Carolina**	**North Dakota**	**Ohio**	**Oklahoma**
160.7615	327.1193	18.36697	961.3028	251.2752
(583.2513)	(648.1651)	(61.56112)	(1661.808)	(844.0874)
Oregon	**Pennsylvania**	**Rhode Island**	**South Carolina**	**South Dakota**
76.27253	356.1101	182.3761	374.3028	19.0367
(155.8602)	(1354.446)	(650.7641)	(598.5956)	(49.35171)
Tennessee	**Texas**	**Utah**	**Vermont**	**Virginia**
467.9725	4551.44	121.2202	3.055046	147.7431
(870.27237)	(8863.921)	(313.4804)	(12.04147)	(262.497)
Washington	**West Virginia**	**Wisconsin**	**Wyoming**	
655.7064	256.0459	202.7523	27.0487	
(2209.44)	(663.1323)	(420.0377)	(67.70188)	

Table 3: *Negative binomial regression models predicting assaults against police officers based on six month prior transfers*

State Fixed Effects						
	Model 1		Model 2		Model 3	
	IRR	*se*	IRR	*se*	IRR	*se*
Surveillance $_{(t-6)}$	.999**	0.00003				
Survel. Stockpile $_{(t-6)}$			.999*	0.0005	.997	0.001
Survel. Stockpile^2 $_{(t-6)}$					.999	0.0001
Weapons $_{(t-6)}$	1	0.00001				
Weapon Stockpile $_{(t-6)}$			1	0.0004	.992	0.0007
Weapon Stockpile^2 $_{(t-6)}$					1	3.01e-06
Officers Per 1000	1.457****	0.057	1.433****	0.057	1.44****	0.058
Pop. In Millions	1.095****	0.004	1.101****	0.005	1.103****	0.006
Log(Income)	1.299****	0.071	1.226****	0.069	1.210***	0.069
Unemployment %	1.003	0.003	1.006*	0.003	1.006	0.003
Poverty %	1.104	0.212	.986	0.191	.994	0.196
Percent Black	.373****	0.045	.349****	0.043	.357****	0.044
Crime Rate 04	1.001****	0.0001	1.001****	0.0001	1.001****	0.0001
_cons	.049****	0.029	.091****	0.055	.105****	0.065

**p<.05, **p<.01, ***p<.001, ****p<.0001. Note: Stockpiled variables are in terms of hundreds of purchases*

Time Fixed Effects						
	Model 1		Model 2		Model 3	
	IRR	*se*	IRR	*se*	IRR	*se*
Survel $_{(t-6)}$	.999**	3e-				
Survel. Stockpile $_{(t-6)}$			.998****	0.0005	.997	0.0009
Survel. Stockpile^2 $_{(t-6)}$					.998*	0.0001
Weapons $_{(t-6)}$	.999	0.00001				
Weapon Stockpile $_{(t-6)}$			1	0.0004	.991	0.0007
Weapon Stockpile^2 $_{(t-6)}$					1.001*	2.97e-06
Officers Per 1000	1.412****	0.055	1.395****	0.055	1.395****	0.056
Pop. In Millions	1.111****	0.006	1.130****	0.0007	1.132****	0.007
Log(Income)	1.324****	0.103	1.393****	0.105	1.342****	0.103
Unemployment %	1.016**	0.005	1.034****	0.006	1.029****	0.006
Poverty %	.672	0.292	.991	0.425	1.098****	0.471
Percent Black	.433****	0.051	.376****	0.045	.392****	0.047
Crime Rate 04	1.001****	0.0001	1.001****	0.0001	1.001****	0.0001
_cons	.044****	0.039	.022****	0.018	.0312****	0.0269

**p<.05, **p<.01, ***p<.001, ****p<.0001. Note: Stockpiled variables are in terms of hundreds of purchases.*

Table 3: (cont'd) *Negative binomial regression models predicting assaults against police officers based on six month prior transfers*

State and Time Fixed Effects						
	Model 1		Model 2		Model 3	
	IRR	*se*	IRR	*se*	IRR	*se*
Survel $_{(t-6)}$	.999**	0.00003				
Survel. Stockpile $_{(t-6)}$			.998****	0.0005	.999	0.009
Survel. Stockpile^2 $_{(t-6)}$					.997***	0.001
Weapons $_{(t-6)}$	.999	0.00001				
Weapon Stockpile $_{(t-6)}$			1	0.0004	.991	0.007
Weapon Stockpile^2 $_{(t-6)}$					1.001*	0.0003
Officers Per 1000	1.399****	0.056	1.377****	0.055	1.376****	0.056
Pop. In Millions	1.111****	0.006	1.132****	0.007	1.136****	0.007
Log(Income)	1.324****	0.102	1.394****	0.105	1.341****	0.102
Unemployment %	1.016**	0.005	1.034****	0.006	1.029****	0.006
Poverty %	.681	0.295	1.003	0.427	1.117	0.476
Percent Black	.430****	0.051	.373****	0.045	.390****	0.047
Crime Rate 04	1.001****	0.035	1.001****	0.0001	1.001****	0.0001
_cons	.041****	0.036	.020****	0.017	.029****	0.024

**p<.05, **p<.01, ***p<.001, ****p<.0001. Note: Stockpiled variables are in terms of hundreds of purchases*

Table 4: *Federal Supply Class Names for Surveillance Equipment*

Antennas, Waveguide, and Related Equipment
Amplifiers
Cable, Cord, and Wire Assemblies: Communication Equipment
Cameras, Motion Picture
Cameras, Still Picture
Camouflage and Deception Equipment
Communication Training Devices
Communications Security Equipment and Components
Fiber Optics Accessories and Supplies
Fiber Optic Cables
Fiber Optic Conductors
Fiber Optic Interconnectors
Fiber Optic Kits and Sets
Hazard-Detecting Instruments and Apparatus
Headsets, Handsets, Microphones and Speakers
Intercommunication and Public Address Systems, Except Airborne
Intercommunication and Public Address Systems, Airborne
Mini and Micro Computer Control Devices
Miscellaneous Alarm, Signal, and Security Detection Systems
Miscellaneous Communication Equipment
Miscellaneous Power Transmission Equipment
Navigational Instruments
Night Vision Equipment, Emitted and Reflected Radiation
Office Information System Equipment
Office Type Sound Recording and Reproducing Machines
Ophthalmic Instruments, Equipment, and Supplies
Optical Instruments, Test Equipment, Components and Accessories
Optical Sighting and Ranging Equipment
Optoelectronic Devices and Associated Hardware
Other Cryptologic Equipment and Components
Photographic Developing and Finishing Equipment
Phonographs, Radios, and Television Sets: Home-Type
Photographic Equipment and Accessories
Photographic Projection Equipment
Photographic Sets, Kits, and Outfits
Photographic Supplies
Radar Equipment, Airborne
Radar Equipment, Except Airborne
Radio and Television Communication Equipment, Except Airborne
Radio and Television Communication Equipment, Airborne
Radio Navigation Equipment, Airborne
Radio Navigation Equipment, Except Airborne
Relays and Solenoids
Sound Recording and Reproducing Equipment
Shipboard Alarm and Signals Systems
Telephone and Telegraph Equipment
Teletype and Facsimile Equipment
Traffic and Transit Signal Systems
Video Recording and Reproducing Equipment
Visible and Invisible Light Communication Equipment
Visible Record Equipment
Underwater Sound Equipment
X-Ray Equipment and Supplies: Medical, Dental, Veterinary

Table 5: *Federal Supply Class Names for Weapon Purchases*

Combat, Assault, and Tactical Vehicles, Tracked
Combat, Assault, and Tactical Vehicles, Wheeled
A collection of items, which are used for a specific purpose.
Armament Training Devices
Armor, Personal
Guided Missile Handling and Servicing Equipment
Guided Missile Maintenance, Repair, and Checkout Specialized Equipment
Guns, 75 mm through 125 mm
Guns, over 125 mm through 150 mm Includes Breech Mechanisms, Power Drives; Gun Shields.
Guns, over 30 mm up to 75 mm
Guns, through 30 mm
Hardware, Weapon System
Land Mines
Launchers, Guided Missile
Miscellaneous Weapons
Munitions items-systems that are not held by the soldier but are deployed for future activation.
Torpedo Maintenance, Repair, and Checkout Specialized Equipment
Weapons Maintenance and Repair Shop Specialized Equipment
Weapons Systems Specific Vehicular Accessories

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