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Mass Shootings and Gun Sales: A Study on the Influence of Red and Blue Power

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by

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Dedication

Mamá, esto y todo lo que haga, hoy y por el resto de mi vida, es por y para ti. Antes de irte me dijiste que yo era el motor de tu vida, lo que yo no te dije es que tú eras el motor de la mía también. Aprender a vivir con tu recuerdo, pero sin ti, ha sido mi más dura lección. Te amaré y te extrañaré por siempre.

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Abstract

Mass shootings are one of the most discussed issues in American society. While it is evident who the main victims are, the impact of such an event reaches far beyond the lives that were directly impacted. One of the main effects mass shootings have been found to have is a spike in gun sales (Wallace, 2015; Studert et. al., 2017; Turchan et. al., 2017). This finding has been found time and time again by academic and non-academic researchers, and it is one of the most commonly believed ideas regarding the effects of mass shootings (Aish & Keller, 2016). The current study builds on previous research to determine whether a Democratic Government has a moderating effect on the mass shootings - gun sales relationship. There are two main hypotheses. Hypothesis one is that mass shootings increase gun sales. Hypothesis two predicts that when Democrats are in power, the increase in gun sales following a mass shooting is higher than when Republicans are in power. This hypothesis comes from the idea that gun enthusiasts will not only fear attacks, but they will also fear changes in gun regulation when Democrats are in power (Adams & Daniel, 2017). To test this hypothesis, a Democratic Government variable was created, and it measured which party controls the Presidency, and holds majority at the House of Representatives, and the Senate. Using FBI background check information as a proxy for gun sales, OLS regressions determined hypothesis one did not have support, while hypothesis two was partially supported, meaning the interaction between a Democratic Government and mass shootings is relevant to gun sales. It is worth noting that this relationship went in the opposite direction than what was expected, since it was found that Democrats holding office actually lead to a decrease in gun sales following a mass shooting. An explanation for why this

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might be the case, and why the first hypothesis was not supported is presented. Study limitations and future research directions are also discussed.

Chapter 1

Introduction

Mass shootings have always been an intriguing phenomenon within the social sciences. Psychologists are constantly trying to understand why mass shooters carry out such massacres, how and if it is possible to predict said massacres, and the effects of such events on the population (Bardeen, Kumpula, & Orcutt, 2013 ; Ben-Ezra, Leshem, & Goodwin, 2015 ; Ben-Ezra et. al., 2017 ; Knoll & Pies, 2019). Criminologists work on understanding the shooter's motivation from a non-psychological perspective, and on theorizing about possible predictability, yet not a lot of criminological research focuses on how mass shootings affect the population (Capellan, 2017; Capellan, 2016; Blum, & Gonzalez Jaworski, 2016; Bower, 2018). If mass shootings affect fear and motivates gun purchases, they may indirectly contribute to subsequent violence and mass shooting events by increasing the number of guns available.

Research has shown that guns have a significant role in violence in America (Briggs, 2017; The Lancet, 2016; Rahamim, 2018). For example, as reported by the National Institute of Justice in 2011, firearms were used in 68% of murders, 41% of robbery offenses, and 21% of assaults nationwide (NIJ, 2011). Research has also shown that when violence is high, people develop a fear of attacks, as their confidence in the safety of their environments goes down (Grinshteyn et. al., 2016; Barton, Weil, Jackson, & Hickey, 2017).[1] This fear has been shown to lead to an increase in gun sales, evidenced especially following a mass shooting, with the

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[1] Arguably, this is especially true for mass shootings, since these attacks tend to be largely unpredictable.

majority of gun owners listing their reason for owning as "self-protection" (Parker et. al., 2017). More guns on the streets, however, can lead to even more violence. In order to decrease violence each of the two main political parties in the country has a different approach. Democrats typically seek to reduce violence by restricting gun availability while Republicans believe that arming citizens is the best way to deter and decrease crime (Democrats, 2018; GOP, 2018).

In recent years, mass shootings have become more impactful to American society. Contrary to popular belief, the number of incidents has not spiked over the last decade (Eskey, O'Connor, Rush, & Schmalleger, 2016), but the data has shown a positive trend ever since the start of the 20th century (Lemieux, 2014). While the number of victims is constantly increasing, so does the debate regarding how the government can help prevent such tragedies. As explained above, there are two widely supported rival views on how to decrease firearm violence: the Democratic stance (pro gun regulations), and the Republican stance (pro guns). While these are constantly argued, years of debate have yet to lead to a bipartisan agreement.

In light of this cultural tension, and the prominent role that shooting massacres play within the context of the gun control debate, it is imperative that a quantitative understanding of how the governing political party shapes gun sales after a massacre. For instance, if calls for gun control increase gun sales, then those calls for gun control are self-defeating. Understanding the relationship between the governing political party, mass shootings, and gun sales will help create coherent policy discussions for the recurring topic brought about by these tragic events.

The current study tests previous research findings that gun sales increase following a mass shooting, and examines how a Democratic Government moderates the impact mass shootings have on gun sales. In order to best understand this research, the relevant research available to date will be presented. After this discussion, the study's conceptualization and

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methodology will be explained. Lastly, the findings will be illustrated and discussed, and

recommendations for future research will be given.

Chapter 2

Review of Literature

The following section will describe available literature and previous research findings regarding relevant topics for the study. These include mass shootings on gun sales, the differentiation between the political parties, their relationship with gun control, the support for each of their stances, and the relationship of mass shootings and the governing political party with gun sales.

Mass Shootings and Gun Sales

Significant research has been done regarding mass shootings and their various effects (Hepburn & Hemenway, 2004; Jang, 2019; Kaminski et. al., 2010; Studert et. al., 2017; Turchan et. al., 2017; Wallace, 2015; Webster, 2017). One of the most studied effects is the increase in gun sales that always seem to accompany these events (Wallace, 2015; Studert et. al., 2017; Turchan et. al., 2017). Various researchers have encountered this finding in their studies, some through statistical means (e.g. Wallace, 2015; Studert et. al., 2017; Turchan et. al., 2017), and some through interviews with primary sources, like gun shop owners and gun stock experts (e.g. Adams & Daniel, 2017; Wiener-Bronner & Dionisio, 2017). Below, a discussion of some of these studies is presented. For a visual representation of this relationship, please refer to Figure 1 .

Figure 1. Seasonally Adjusted Line Graph of Gun Sales Over Time With Significant Peaks Explained (Rojanasakul, 2017).
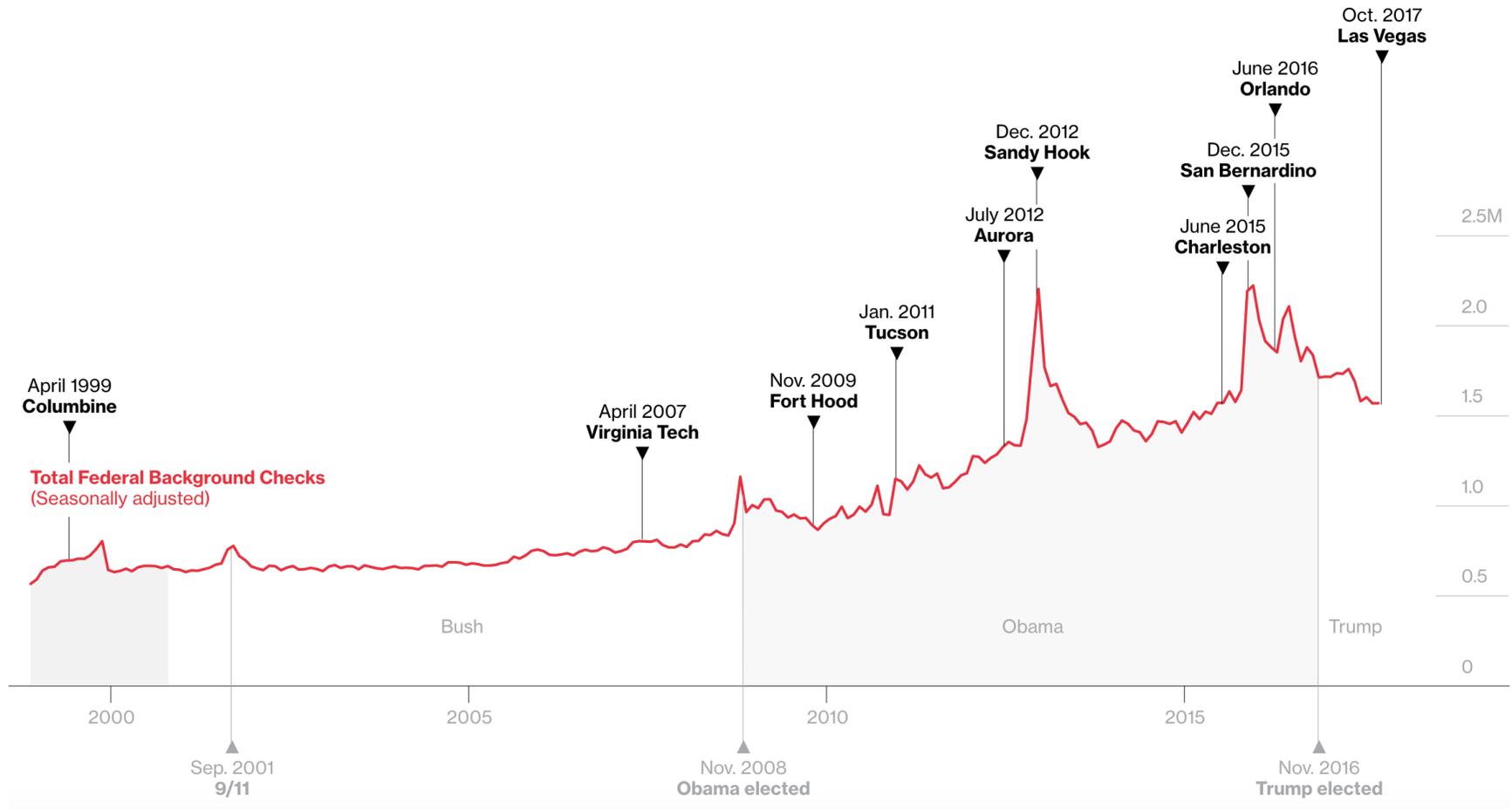
In 2015, Wallace set out to find whether mass shootings have an effect on gun sales. By using panel-data linear models estimated using feasible generalized least squares, he was able to test for the national and regional effects of mass shootings on gun sales. It is worth noting that Wallace controlled for the violent crime rate, the passing of Castle Doctrine laws (legislations that protect use of force for protection), the Obama election, and the Google search rate of terms regarding gun law, gun control, and gun restrictions. His nationwide results indicate that there is a statistically significant relationship between a mass shooting occurring and the log count of gun license background checks, however, some of the effects were delayed by up to six months, and all effects were found to be temporary (Wallace, 2015). His findings also indicated that the Obama election, and Google searches for terms regarding gun control had a significant positive effect on the number of monthly background checks, however, this relationship does not overpower the association found between mass shootings and background checks (Wallace, 2015).

Another study that tested whether mass shootings have an effect on gun sales was that of Studdert and his colleagues, in 2017. They examined handgun acquisitions in California after two mass shootings (Newtown and San Bernardino). By using time series analysis using seasonal autoregressive integrated moving-average models, the researchers were able to determine that gun acquisitions increased in both a 6-week and 12-week period following each mass shooting. The first mass shooting (Newtown) represented an increase of 53% on sales over the expected number, while the second mass shooting (San Bernardino) represented an increase of 41% on sales over the expected number. It is worth noting that the study controlled for certain buyers' demographic characteristics, including age, sex, race/ethnicity, and ZIP code of residence (Studdert et. al., 2017).

The issue at hand has also been studied within the state of Tennessee by Turchan and colleagues in 2017. They sought to find whether mass shootings affect gun sales by using handgun carrying permit application rates (HCP; measured per 100,000 residents aged 21 and over by county) as a proxy variable. For their study, control variables included several socioeconomic indicators (income, sex, race/ethnicity, employment status, educational attainment, political affiliation), monthly stolen guns rate (measured per 100,000 country residents), police presence (measured as annual number of uniformed officers per 100,000 country residents), hunting permit rates (measured per 100,000 county resident), and local violent crime rates. The results of their multilevel mixed-effects regression model reported a positive significant relationship between mass shootings and logged handgun carrying permit application rates. It is worth noting that political affiliation (measured as percentage of voters by county who voted Republican for the 2008 and 2012 presidential elections) was found to be statistically significantly associated with HCP. The relationship was very small, with one percentage point increase in conservatism being related to an approximate 1% increase in HCP (Turchan et. al., 2017).

The finding that gun sales increase following mass shootings has also been discussed in non-academic sources. Two of these will be discussed, with the first being an interview in which Marty Daniel, founder of Daniel Defense, a company that sells AR-15 semi-automatic rifles and accessories, discusses what Trump's presidency means for his business. When asked about the hike he saw in his gun sales during 2013, he pointed at the Sandy Hook Elementary shooting in 2012 as the main reason his company skyrocketed. He expressed that while such occurrences are awful, mass shootings do drive gun sales, mostly because people see politicians talking about gun control and they fear policy changes (Adams & Daniel, 2017).

The second relevant interview was that of Rommel Dionisio (Wiener-Bronner & Dionision, 2017). He is the managing director at Aegis Capital, a financial consultant company, and his expertise is in the gun industry. His knowledge is relevant to the study because although mass shootings increase gun sales, research has established that stock prices of firearm manufacturers actually decline significantly (between 22% and 49%) following these events (Gopal & Greenwood, 2017). It is speculated that this may be due to the publics dislike of guns in the immediate aftermath of a mass shooting. In an interview for CNN, Dionisio stated how there has been a consistent spike in gun stock prices once gun sales start increasing following mass shootings. The spike was most prevalent following the San Bernardino shooting and Charlie Hebdo Paris attacks in November of 2015 (increasing by 62% in December of 2015), but other mass shootings have also been associated with increases (the Orlando shooting of June 2016 was associated with a 20% climb in June, July, and August of that same year).

Explanatory theories. Previous research has suggested there are two reasons why gun sales spike in the aftermath of a mass shooting (Wallace, 2015; Turchan et. al., 2017). Although the reason behind it is different, both perspectives claim the increase is due to fear. One theory focuses on fear of more attacks, while the other one focuses on fear of stricter gun regulations and lower gun availability. Both are discussed in the following section. Additionally, gun purchasing under ordinary circumstances (non-mass shooting related sales) is discussed.

Fear of Attacks. Through different research, it has been established that crime rates have a significant relationship with fear of crime (Grinshteyn et. al., 2016; Barton et. al., 2017). That is to say that the more crime that is present, the more people fear for their safety, because a higher crime rate seems to lead to a higher probability of being victimized. While most of the effects brought upon by fear are negative, one of the few positive outcomes is engagement in

avoidance and defensive behaviors (May, Rader, & Goodrum, 2010). Avoidance behaviors include staying at home at night, or walking in groups, while defensive behaviors include installing a burglar alarm, or arming one-self (May et. al., 2010). Research has found the latter to be one of the most common ways people use to increase their sense of security (Asencio, Merrill, Steiner, 2014; Leverentz, 2012; Rader, 2007). Considering mass shootings are a very publicized part of violent crime by the media, it follows that mass shootings would also cause an increase in fear of crime. As stated before, fear of crime has been shown to reflect on gun sales, as people like to buy guns as a means for self-protection (Asencio, Merrill, Steiner, 2014; Leverentz, 2012; Rader, 2007). As such, it is expected that gun sales increase following a mass shooting, since people are looking for ways to increase their sense of protection. Various studies have found this relationship between fear of criminal victimization and gun ownership. Below are the findings from four of them.

Newton and Zimring were among the first to study the relationship between gun sales and fear of crime. In 1969, they conducted an investigation for the National Commission on the Causes & Prevention of Violence, and found that the people who buy guns for defensive purposes do so because of their fear of crime, violence, and civil disorder (Newton and Zimring, 1969). They came to this conclusion after analyzing data from the National Advisory Commission on Civil Disorders collected in Detroit, which correlated the number of handgun permits with the crime rate.

Interested in studying if previous findings vary by region, Cao, Cullen, and Link assessed various explanations of gun ownership from a survey conducted in Cincinnati (1997). After running multinomial logistic regressions, they found that the relative crime level of the community was positively associated with protective gun ownership. It is worth noting that

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control variables included demographic characteristics (income, sex, age) in addition to childhood socialization, military experience, and conservative crime ideology (Cao et. al., 1997). This last control variable is especially relevant to consider for the current study, since it evidences how previous research has determined that politics are important in the relationship between fear of crime and gun ownership. In the study, it was found that protective gun ownership is influenced by holding a conservative crime ideology (Cao, et. al., 1997).

Almost 15 years later, Kleck and colleagues set out to determine if perceived risk of criminal victimization is related to gun ownership for self-protection. As with previous research, it was their belief that there was a positive relation between these variables, meaning an increased perceived risk of victimization was associated with a higher likelihood of a person being a gun owner and listing their motives for being one self-protection. After running logistic regressions and accounting for demographic characteristics (sex, race/ethnicity, age, marital status, educational achievement, income, employment status, religion, political affiliation, number of minor children), their hypothesis was supported, as there was a statistically significant relationship between perceived risk of victimization and personally owning a gun for self-protection (Kleck et. al., 2011). Once again, the inclusion of a political affiliation variable demonstrates the field's belief that politics have some influential effect on gun sales in relation to fear of criminal victimization.

The established increased fear is usually accompanied by a belief that the people who carry out the mass shootings are unhinged (Wallace, 2015). As such, mass shootings work as support for Bob Altemeyer's "Belief in a Dangerous World" theory (BDW), in which the world is portrayed as a dangerous place full of people who are inherently bad. When a mass shooting occurs, the danger perception increases. This has been shown to occur despite the fact that the

probability of being involved in a mass shooting is very small (Bagalman et. al., 2013). In their 2017 study, Stroebe and colleagues researched whether danger perception lead to an increased likelihood of purchasing a gun. It was theorized that holding the "Belief in a Dangerous World" theory as true would lead to a feeling of need for self-protection, leading then to an increase in gun ownership. After running some regressions on their data, they found that believing the world is a dangerous place is associated with higher gun acquisition in the name of protection (Stroebe et. al., 2017a).

Fear of Gun Unavailability. It is a common debate whether following mass shootings, laws should change to prevent reoccurrences (Monuteaux et. al., 2015). Although Democrats constantly push for stricter gun regulations, the Republicans stand behind their belief that more guns means more safety (Luca, Malhotra, & Poliquin, 2016). It is this push for gun reform that increases pro-gun advocates' fear of gun restrictions, and therefore likely drives gun sales following a mass shooting. This has been studied in the literature, both academic and non-academic. Below is information on their findings.

In his study regarding the relationship between the demand for guns and the 2008 presidential election, Depetris-Chauvin (2015) established that the increase in gun demand in the months prior to the Obama election was at least partially driven by fear of increased gun control. This seemed like a plausible explanation considering three things regarding the pro-gun population: 1) Democrats seem to always push for stricter gun regulations, 2) Obama was leading the polls, 3) Due to NRA publicity, it was believed that Obama had the intention to eliminate the Second Amendment. It is worth noting the researcher also related the increase in gun sales following the Sandy Hook mass shooting to the gun control fear explanation, mostly

due to the fact that the months following the mass shooting were some of the most significant for the gun control debate (Depetris-Chauvin, 2015).

Another 2015 study that has been incredibly relevant to the research on gun sales due to fear of gun unavailability following mass shootings is that of Wallace. While the main objective of the study was to determine whether mass shootings have an impact on gun sales, the control variables employed in the study (Obama election and Google searches for words regarding gun reform) allowed for him to determine whether fear that gun purchasing rights will change increased gun sales. His results show a positive association between the two variables and gun acquisition, though the effect of mass shootings remained significant. As such, it is possible that both fear of gun restrictions and fear of future attacks impact gun sales (Wallace, 2015).

A more recent study on the topic comes from Chau (2018). He was interested in studying gun sales, and wanted to see the impact mass shootings had. He was also interested in seeing what other variables could be making gun sales so volatile. One of his main findings came from his variable that accounted for President Obama's pro-gun regulations tenure. This variable was associated with a monthly 210,000-unit increase in gun sales. Considering the presidential call for control was statistically significant for both long-time gun owners and first-time buyers, it is clear that there was a fear associated with President Obama's platform. It is worth noting that while no regulations were changed at the federal level during his time in office, his rhetoric did create a sense of uncertainty in the future of civilian gun ownership. It is thought that this uncertainty is what caused the large reactionary increase in gun sales (Chau, 2018).

Non-academic sources have also helped illustrate the idea that fear of gun unavailability drives gun sales. In the same interview presented above, Marty Daniel described how a lot of his customers had mentioned they were "buying guns now because gun control was coming and

when regulations changed, they would not be able to get whatever they wanted" (Adams & Daniel, 2017). This was following the Sandy Hook mass shooting. The New York Times also studied this theory through independent research in 2016. They said "fear of gun-buying restrictions has been the main driver of spikes in gun sales, far surpassing the effects of mass shootings and terrorist attacks alone" (Aish and Keller, 2016).

Gun Purchasing for Protection Under Ordinary Circumstances

At times when mass shootings are not affecting the country's population everyday thoughts, people give three main reasons when asked why they are interested in acquiring or have acquired guns. These are: for protection, for fun (sport shooting) or for collecting. Considering the present study is researching gun-buying behavior following a traumatic event that inspires fear in the population, the study will focus on gun purchasing for protection.

Historically, self-defense has been the most common motivator for gun purchasers to invest in firearms (Wallace, 2015). However, it is speculated that the number of people describing protection as their motivator has increased with time. In a 2015 New York Times article, Santos interviewed gun show attendees and shop owners, many of whom cited new fears of attack as a motivator for new gun purchases. With a national survey of gun ownership conducted in 2004, Hepburn, Miller, Azrael, and Hemenway (2007) found that 46% of gun owners have bought a firearm for self-defense. A later survey, conducted in 2015, has that number at 63% (Harvard Injury Control Research Center, 2016). Two years later, another national survey evidenced the continuing positive trend in the motivator. In their 2017 survey for the Pew Research Center, Parker and colleagues reported that 71% of current gun owners living in urban and suburban areas cite "protection" as their major reason for personally owning a gun.

While self-defense was the original motivator for the founding fathers to constitute the second amendment (Kleck, 1991), the motives behind self-defense have changed considerably since the institution of the right to bear arms. This is relevant because the laws have not yet changed to reflect this transition, which could make pro-gun owners more likely to purchase guns in fear of an update in gun laws. While historically Americans have had to worry about protecting themselves from wild animals more than anything else, the last couple decades have instilled a sense of danger that emanates from other civilians with guns (Stroebe, Leander, & Kruglanski, 2017b). This raises the question of whether or not more firearms out in the population increases or decreases the sense of safety the everyday American experiences. The answer to that question is constantly argued between proponents of the two major political parties in the country, the Democrats and the Republicans.

Political Parties

The United States has two major political parties; the Democratic Party and the Republican Party. While these share the same principle of providing the American people with a safe and comfortable environment in which to thrive, they each have different ideas on how to achieve that. Following a mass shooting, there are always two main questions the public wants answered: 1) Why would someone decide to shoot strangers without an apparent reason? 2) Is there anything that can be done in order to prevent these events from taking place again? (Frances, 2014). Politicians can do little to help answer the first question, but the influence they have through their job could be vital to answering the second question.

Democrats. The Democratic Party is the oldest political party in the world (Blue Party). It is widely known as the party for liberals and progressives, and more often than not, centrists (Levitz, 2018). The party's platform advocates for equality on all fronts. This means equal

opportunity despite race, religion, gender, or sexual orientation (Democrats, 2018). Other

important aspects to the Democratic platform include equal educational opportunity,

environmental protection, income-based tax reforms, and decreased government spending

(Democrats, 2018).

    Gun Control. Democrats pride themselves in always seeking the greater good, as

one of their core beliefs is that "out of many, we are one", and that "we are stronger together"

(Democrats, 2018). As such, they advocate for civil liberties that do not infringe on one another.

In the case of gun control, a common misconception is the belief that Democrats advocate for a

gun-free society (Sullivan, 2018). Some claim the party wants to eliminate the second

amendment altogether (e.g. Miniter, 2016; Tobin, 2017). What the Democratic platform works

towards is keeping American communities safe, but they believe this can be done while

respecting the rights of responsible gun owners (Democrats, 2018). The blue party has worked

tirelessly to create stricter gun controls, which, among others, would strengthen the background

check process, close loopholes in current laws, limit the availability of weapons of war, and

increase the Bureau of Alcohol, Tobacco, Firearms, and Explosives' ability to revoke selling

licenses from law breaking gun dealers (Democrats, 2018).

  Following a mass shooting, Democrat representatives are always amongst the first to

make a call for stricter gun control (Chau, 2018). Their calls seem to work, as previous research

has found that a single mass shooting is associated with a 15% increase in the number of gun

regulations introduced within a state in the year following the event (Luca, Malhotra, & Poliquin,

2016). However, there is no encouraging evidence supporting the new legislations' effectiveness.

This has found to be, in part, due to influential gun lobbyists, as they have prevented more

radical, yet effective, measures from being introduced (Stroebe, 2015). Nonetheless, stricter gun

regulations as a means of decreasing firearm violence (including mass shootings) have seen significant support in countries in which they have been implemented. The Democratic platform is based partly on this evidence that gun regulation reduces firearm violence, arguing that if it works for countries similar to the United States, it should work for the United States. The examples of Australia and Argentina are described below.

Australia was among the first countries to experience a mass shooting resembling the ones seen in present day[2]. This massacre led to an almost immediate change in gun regulations, and by 1998 a practical national gun agreement was made into law. This reform banned semiautomatic guns, and established a compensatory buy-back scheme so gun owners would be more inclined to give up their guns. A firearm registry was created, an improved licensing process was implemented, and safe storage requirements were heightened (Chapman, 2013). In 2016, Chapman and colleagues sought out to study the association between gun law reforms and intentional firearm deaths in Australia between the years of 1979 and 2013, in order to determine whether the regulations implemented following the mass shooting have succeeded at their goal of decreasing intentional firearm injuries. Findings revealed that in the 18 years before the new regulations, 13 mass shootings took place, while in the 20 years following the gun reform, no mass shootings have occurred, and the decline in total firearm deaths has accelerated (Chapman, Alpers, & Jones, 2016). Considering its similarities with the US as a developed country, Australia is a valid example of how increasing gun regulations and decreasing gun availability can decrease firearm related deaths.

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[2] In April of 1996, Martin Bryant, a 28 year old entered a café at a tourist hotspot in Port Arthur, Australia and started a killing spree. By the time he was done, 35 people were dead, and 23 more were injured (Chapman, 2013).

Argentina saw a drastic change in its gun regulations after a school mass shooting[3]. Concaro and Olaeta (2011) studied the disarmament plan that lead to an overall decrease in armed violence, and a complete elimination of the mass shooting issue. While efforts to disarm civilians had been taking place since 2001, the mass shooting in 2004 had a significant impact in the push for stricter gun regulations. It was then that the Argentinian Network for Disarmament (RAD, for its acronym in Spanish) became popular due to its slogan "You have a gun, you have a problem". Results of the buy-back program started showing soon after, with 8.5% of all registered guns being returned to officials by the end of 2006. Throughout the following years, gun ownership had continued to decrease, and by 2009, crime involving firearms was at a 10-year low, and mass shootings were an occurrence of the past (Concaro & Olaeta, 2011). As of 2019, this last statement stands, as the last recorded mass shooting in Argentina was that of 2004. Taking this into consideration, Argentina is a prime example of how limiting gun availability through legislation leads to a direct decrease in armed violent crime (including mass shootings).

Republicans. The Republican Party is the conservative party (Grand Old Party, Red Party). They believe in the upholding of traditional values, and constantly argue for more and increased civil liberties. The Republican platform has libertarian views in regards to government control and government taxing (lower is better), and environmental protection, while they have more restrictive views when it comes to individual liberties, like women's rights (GOP, 2018).

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[3] In September of 2004, Rafael Solich, a 15 year old student took his dad's gun from his home in Buenos Aires, Argentina and went to his school, Carmen de Patagones, with the intent to kill. After killing three people and injuring five more, he was apprehended and made to face justice (Laino, 2004).

Gun Control. The GOP is a big supporter of the second amendment, stating that it "enables Americans to exercise their God-given right to self-defense for the safety of their homes, their loved ones, and their communities" (GOP, 2018). Republicans oppose any laws that restrict magazine capacity, or the sale of select firearms (GOP, 2018). They also oppose federal intervention in the way of licensing processes and gun and ammunition registration (GOP, 2018). The conservative's rationale is that the American people would be safer if more guns were owned by community members, as guns are believed to deter crime (Stroebe et. al., 2017b). This applies especially to mass shootings, as Republicans believe that perpetrators could be shot down faster if a citizen already on scene were to act in defense of others, possibly saving lives. It is evident why people who agree with this rationale are more likely to buy guns in order to decrease their fear of an attack. One of the biggest organizations supporting the conservative view is the National Rifle Association (NRA), which has become notorious for their idea that "the only thing that stops a bad guy with a gun is a good guy with a gun" (LaPierre, 202: p. 5).

Following a mass shooting, the first thing Republicans do is send thoughts and prayers, and then besmirch anyone who raises their voice in favor of gun reform, as conservatives believe the time to talk about gun control is not following a mass shooting. This is because the public outcry for policy change may not hold once the initial shock from the event is gone (Barry et. al., 2015). In order to explain these events, and based on the shooter characteristics, Republicans tend to list one of the following as the underlying cause for a mass shooting occurring: mental health issues (and their related prescribed stimulant use and abuse), ineffective school security, decline in family values, and violent video game addictions (Pane, 2018; Mahdawi, 2018). Conservatives do not believe that gun regulation would prevent mass shootings as most of them involve guns that were purchased through the established legal means; none of them were

purchased through the loophole of unregulated private sales or at a gun show (Dane, 2013). As such, it is their belief that increasing gun controls would simply appease the public since it would appear as if officials are taking action to prevent further mass shootings, but in reality, nothing would change (Dane, 2013). This theory has been tested in some academic research; the results of these are discussed below.

In 1995, Kleck and Gertz ran the first survey ever devoted entirely to the subject of armed self-defense. They wanted to study whether being armed actually affects a person's possibility of being successfully victimized (defined as losing property or being injured). Results supported the hypothesis that gun-ownership decreases the probability of successful victimization, as it was found that only 11% of armed victims actually lost property, and only 5.5% of the same were injured during the attack. This is in direct contrast to, arguably, 100% unarmed victims who lost their property or got injured during the attack (Kleck & Gertz, 1995). As such, it is believed that gun ownership as a means for self-protection decreases a person's likelihood of becoming a victim. In other words, this means that the greater the number of guns in the population, the lower the crime rate will be, as more people will be able to successfully defend themselves. This would in turn also lower the fear of attacks, since it has been established that there is a direct relationship between the violent crime rate and a fear of crime (Grinshteyn et. al., 2016; Barton, Weil, Jackson, & Hickey, 2017). Presumably, this applies for all types of crime (personal and property), including mass shootings.

Another major research project supporting the Republican platform was that of Lott in 1998. One of the main conclusions from his book "More Guns Less Crime" is that allowing citizens to responsibly carry guns deters violent crimes. As explained in the book, responsible gun ownership only applies to people with a clean criminal record and no history of mental

illness. Lott states that if the whole country had adopted concealed-handgun provisions by 1992 instead of the 8 states that did, an estimated 1,500 murders and 4,000 rapes could have been avoided that same year (Lott, 1998). This is why Republicans support and encourage gun ownership, because it allows citizens to protect themselves and decrease crime at the same time.

Twenty years later, another researcher was interested in testing the relationship between gun ownership and crime (Donohue, 2017). To do so, nationwide data for the years of 1977 through 2014 was analyzed, in order to evaluate the impact of right-to-carry laws on violent crime. Findings revealed that the net effect of the implementation of a right-to-carry law was associated with a 15% increase in violent crime over a 10-year period (Donohue, 2017). As such, it was concluded that gun ownership has a positive relationship with violent crime, with an increase in the number of gun owners leading to an increase in violent crime. Due to this finding, it can be said that the Republican platform is based on tenuous research, as some researchers support its theory of more guns meaning more safety, but other researchers evidence that more guns means more crime. This discrepancy may be due to the significant gap in time between these studies, possibly indicating that times have changed.

Governing Political Party and Gun Sales Following Mass Shootings

Having established that mass shootings lead to fear of attacks, and an increase in gun sales, and that gun sales vary by political ideology, it is likely that the relationship between a mass shooting and gun sales varies by the governing political party. Previous research has also established a relationship between mass shootings and change in gun policies. In their 2016 study, Luca and colleagues found that a single mass shootings lead to an increase of 15% in firearm bills introduced. This accounted for 2.5 more bills than expected. It was also found that this change is influenced by the number of deaths from the mass shooting, with each additional

death leading to an additional 2.5% bills introduced. A noteworthy finding of this study is also the fact that the previously mentioned results hold regardless of which party controls the legislature (Luca, Malhotra, & Poliquin, 2016).

While the results presented above referenced enacted gun laws, no information was given on whether the new regulations increased or decreased gun control. This is why the researchers furthered their study, and investigated if and how Democrats and Republicans respond differently to mass shootings. Findings followed most expectations, as a mass shooting in a Republican-controlled legislature lead to a 75% increase in the introduction of bills aimed at loosening gun control (Luca, Malhotra, & Poliquin, 2016). This makes sense considering Republicans believe that the more gun owners there are, the safer the country will be (Stroebe et. al., 2017b). The same was not found in Democrat-controlled legislature, because although mass shootings lead to a reduction in laws that loosen gun control, this relationship was found to be insignificant (Luca, Malhotra, & Poliquin, 2016). This finding was explained through previous research, which has established that even if the majority of people support stricter gun control, those opposed to an increase in restrictions are significantly more likely to take action and defend their position (Schuman & Presser, 1981).

Considering the findings from Luca and colleagues (2016), it is important to investigate how the different political reactions to mass shootings influence gun sales. It can be theorized that if post-mass shooting bills were introduced under Democratic climate, they would likely be bills aimed at restricting gun ownership (based on the Democratic platform). As such, fear of gun restrictions may spur people (regardless of political affiliation) to buy guns because they are afraid of restrictions imposed by the Democratic government. We might not see a similar increase in sales under a Republican government because under their platform, there may not be

a fear of losing guns or stricter controls. Another theory for why gun sales could increase more under a Democratic government following a mass shooting goes back to the Fear of Attacks theory previously discussed. Considering Democrats have been continuously described as "weak on crime" (Holian, 2004), it is possible that people who agree with this view see mass shootings as a confirmation of their belief, and are motivated enough to purchase guns in order to protect themselves. Since Republicans are known as the "tough on crime" party (Holian, 2004), it is speculated that fear would not be as big of a motivator for gun purchasing because people would hold the belief that criminals are going to be put away.

Having established the relationship between mass shootings, gun regulations, and politics, and considering that gun regulations have a direct impact on gun sales, it is appropriate to examine whether the controlling party influences gun sales following mass shootings. Previous research has found that gun sales increase following unexpected election results, which hints at the possibility that the country's politics has an effect on gun sales (Studdert et. al., 2017). This is a possibility considering how different the two parties are in their views of gun control. If a Republican was expected to win an election, and a Democrat wins it instead, people may fear that a misalignment between their personal views and the government's may lead to the implementation of regulations they disagree with. Thus, it is theorized that the fear of gun unavailability explanation for the increase in gun sales after a mass shooting occurs is most affected by the country's governing political party. Considering pro-gun activists would not worry about lowered gun availability if Republicans were in power (Adams & Daniel, 2017), it is expected that gun sales increase more following a mass shootings and Democrats are in power.

Previous research has established a variety of characteristics that could influence gun ownership, including trust levels in criminal justice institutions, racial attitudes, income, and, more importantly for this study, political ideology (Flores, 2015). Support for the idea that partisanship may affect gun purchasing intentions traces back as far as 1991, when Dr. Kleck published his book "Point Blank: Guns and Violence in America," in which he discusses his finding that conservatives had significantly higher gun ownership rates than liberals (Kleck, 1991).

Chapter 3

Current Study

The current study aims to test two hypotheses. The justifications for these are explained in the section below.

Hypotheses

The first hypothesis is that gun sales increase after a mass shooting. This is hypothesized based on the idea that fear increases post mass shooting, therefore increasing gun purchasing. It is also in line with previous research that has found the same (e.g. Turchan et. al., 2017). The second hypothesis is that the reigning political party has a moderating effect on the number of nationwide gun sales following a mass shooting. More specifically, it is hypothesized that when Democrats control the government, and a mass shooting occurs, gun sales will increase more than when Republicans are in power and a massacre takes place. This is theorized due to the circumstances described as followed. First, research has shown that Democrats are significantly less likely than Republicans to buy guns under ordinary conditions (Parker et. al., 2017; Hepburn et. al., 2007). This suggests that more sales are being made to Republicans than Democrats. Second, considering previous research has established that Belief in a Dangerous World theory is strongly associated with political conservatism (Duckitt, 2001), it follows that Republicans are more likely to buy guns following a violent event. Third, if Republicans are in power, Republican supporters generally do not have to worry about stricter gun controls. This is the case since the Republican Party is a strong advocate for the second amendment (GOP, 2018), which states that "the right of the people to keep and bear Arms, shall not be infringed" (U.S.

Const. amend. II). It is theorized then that the governing political party may impact fear of gun unavailability, and thus motivate people to buy more guns.

Research Importance and Result Implications

While previous research has established the relationship between mass shootings and gun sales (Wallace, 2015; Studert et. al., 2017; Turchan et. al., 2017), the current research aims to expand the literature by investigating a generally understudied relationship, that of politics and gun sales following mass shootings. As such, there are 4 major contributions of the current study. These are as follows. 1) By incorporating a moderating variable, it will be possible to determine if/what kind of effect the governing political party has on gun sales following mass shootings. 2) By incorporating different control variables that may be related to gun sales, it will be possible to have a clearer picture of what confounding variables should be included when studying gun sales post mass shootings. 3) By using a novel data set, findings will be able to shed some light on whether the findings previous research has established stand the test of time. 4) By studying the issue nationally, this study is the first to look at politics and gun sales following mass shootings on a macro-scale.

The study's findings carry with them some research implications that can be valuable to each of the political parties. In the Democrats' case, if being in power while a mass shooting takes place increases the number of gun sales, they could be inadvertently adding to the number of guns on the streets, which may contribute to future violence. In the Republicans' case, an increase in gun sales would not be seen as an adverse effect, however, it is possible that an increase in gun sales leads to an increase in crime, which would then turn more guns on the streets into an adverse effect for conservatives as well. As such, the findings of the current study could lead to a shift in how political parties work towards advancing their own platforms.

Chapter 4

Methods

A time series regression was employed on a 19-year period database to test the two
hypotheses. Three key constructs were conceptualized (gun sales, mass shootings, governing
political party) and analyzed to answer the questions previously established. The following
section will describe in detail the methodological process completed for the study.

Data

The current study uses three different databases. The first database was collected by the
FBI, and it is the National Instant Criminal Background Check System (NICS) firearm
background checks database. Said database has the numbers for all background checks
conducted in the country for a 19-year period, November 1998 through October 2017. The
second database records which political party holds majority at Senate, majority at the House of
Representatives, and the Presidency throughout each month of the 19 years included in the FBI
database. This information was collected from different sources, including Scholastic's
"Timeline Guide to U.S. Presidents (for Presidency), the "History, Art, & Archives" webpage of
the United States House of Representatives (for House of Representatives), and the United States
Senate webpage (for Senate). The third and last database comes from Mother Jones, a nonprofit
investigative journalism magazine that has been collecting information on all US mass shootings
since 1982. The researcher simplified this database for the purposes of this study, noting only
whether or not there was a mass shooting in each month of the relevant 19-year period.

Variables

There are four different types of variables relevant to the current study: independent, dependent, moderating, and control.

Independent. The independent variable for this study is mass shootings. Ever since these events started becoming more common, and scholars began studying the different circumstances surrounding the killings, researchers have acknowledged the difficulty of standardizing the definition of such an event (Stroebe, Leander, & Kruglanski, 2017a; Bjelopera, Bagalman, Caldwell, Finklea, & McCallion, 2013). While the Federal Bureau of Investigation (FBI) defines mass shootings as "a single incident with four or more fatal victims, usually at the same location, with no significant gap in time between the murders" (Behavioral Analysis Unit, 2005), others have used broader definitions. For example, in their study of handgun acquisitions in California following two mass shootings, Studdert and colleagues (2017), labeled mass shootings as "a single continuous event, carried out in public, with at least 3 or 4 indiscriminate victims." Although at first sight the definitions do not seem so different, the lack of indication of degree of injury in the latter study could change the number recorded for affected parties significantly. In order to stay consistent with the great majority of previous research (e.g., Turchan et. al., 2017; Duwe. 2000; Duwe, Kovandzic, & Moody, 2002), the proposed study will use the definition set forth by the FBI. The independent variable was established as a dummy variable in order to simplify the study, because throughout the data, only one observation (month) had more than one mass shooting in it. As such, the variable simply noted whether or not a mass shooting took place each month over the 19-year study period.

Dependent. The current study has one dependent or result variable: gun sales. Information on the actual number of monthly gun sales is not available; there is no national gun registry nor organization that tracks this information. Therefore, background checks are used as a proxy, because it is assumed that not many people would go through the trouble and the expense of applying for a gun license if they do not have the intention of buying a gun. It is worth noting that, while private gun sales go unaccounted for, the data only reveals the number of initiated background checks, which likely does not represent the number of successful applications. Since one limitation underestimates and the other overestimates the actual number of gun sales, it is believed that the numbers presented in this study are fairly accurate.

Moderator. The moderator variable for this study is the governing political party. Conceptualizing this variable required a simple study on how the government works, and which branch is most relevant when it comes to dealing with issues like the one at hand. Considering the U.S. Constitution established that laws need to be proposed by and approved by Congress (U.S. Const.), it is clear that Congress holds the most power in regards to law making decisions. This is why, for the purposes of this study, holding majority in it was picked as the proxy variable for overall governing. However, no proposed law becomes law without being signed by the president, as such, it could also be argued that holding the presidency is holding the government as a whole. Taking the previous into consideration, a dummy variable was created to establish which party leads the government, by simply noting which party held two of the three relevant parts of the legislative branch of government. For example, if Democrats held the Senate and the Presidency, the variable would note the Democrats as the leading party. Dummy variables were also created noting which party holds each of the three branches independently (1=Democratic). This was done in order to measure whether holding a single branch is enough to

influence gun sales, or if it is the combination of two of the branches that would be needed to cause an impact.

Control. Control variables are different than the previously mentioned variables because, even though they relate to the study, they are not believed to be causing the total effect seen on the dependent variable. In other words, control variables have somewhat of an effect on the result variable, and as such, it is important to control for them. The proposed study has four relevant control variables, and the importance of each is explained below. The first control variable is national number of violent crimes, retrieved from the Disaster Center webpage, a government-run tool that provides online coverage and statistics of U.S. disasters. This variable is relevant because it gives an indication of the safety status in the country, and as explained earlier, people are more prone to purchasing guns for protection when they fear for their safety (Lizotte & Bordua, 1980; Cao, Cullen, & Link, 1997; Kleck et. al., 2011). The second control variable attempts to measure the country's economic status. It is important to account for the economic status of the country because a more thriving environment allows people more freedom of purchase (The Heritage Foundation, 2018). In consistency with previous research (Cain, 1979), the proxy variable used for this is unemployment rate. This data was collected from Multpl, a free economics data provider. The study also controls for two external events that could impact human behavior. It is important to account for these, as history effects are a threat to a research's internal validity (Voght, 2005). Research conducted by the Pew Research Center determined that the two most relevant US historic events for the current living generations are the 9/11 attacks and the Obama election (Deane, Duggan, & Moring, 2016). In the case of 9/11, the increased sense of danger was evident, as the US was under attack on its own ground. During the first Obama election period (from July, when he won primaries, to November, when he won

the election), research also reported significant increases in gun sales, driven by the uncertain fate of the current gun laws (Depetris-Chauvin, 2013). As such, data that concerned dates surrounding those two events was given special consideration, as it was a time of uncertainty and change for the country. The last control variable is hunting season. Considering people who buy guns for sport are likely preparing for hunting season during the month prior to the beginning of it, and throughout it, special consideration was taken for the fall months (September through December). While hunting periods are regional, some of the main hunting states in the nation have the fall designated as hunting season (for Kentucky see Kentucky Department of Fish and Wildlife Resources, 2019; for Indiana see Indiana Department of Natural Resources, 2019; for Missouri see Missouri Department of Conservation, 2019)[4]. Lastly, it is worth noting that the number of gun sales in the month prior to the mass shooting is also being controlled for through a lagged variable, in attempts to establish whether the change in gun sales goes beyond the normal expected variation.

Analytical Plan

The data used for this research is comprised of 19 years of monthly data, which adds up to 228 observations. Throughout the 19 years, the average number of gun sales (in thousands) was 1,193.48, with a standard deviation of 574.82. The minimum number was recorded on November of 1998 at 21.2, while the maximum was recorded on December of 2015 at 3,314.6. Out of the 228 studied months, a mass shooting occurred in 56 of them (24.56%). Democrats held the Presidency for 123 months (53.95%), majority at the House for 48 months (21.05%), majority at the Senate for 119 months (52.19%), and governed for 97 months (42.54%). In

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[4] A famous hunting blogger has put together every state's hunting season periods together. For this information, refer to Caroline Mayou (2016).

regards to the control variables, the average number of violent crimes was 1,328.06, with a

standard deviation of 100.21, while the unemployment rate had an average of 6.02, with a

standard deviation of 1.76. The 2008 Presidential Election and the 9/11 attacks influenced 5

months (2.19%) each, and hunting season was in effect for 76 months (33.33%). The relevant

descriptive statistics information for all these variables can be found in Table 1.

Table 1. *Descriptive Statistics of Variables (N=228)*

Variable	N (%)	Mean (Standard Deviation)
Gun Sales		1,193.48 (574.82)
Months in which a mass shooting occurred	56 (24.56)	
Months Democrats held the Presidency	123 (53.95)	
Months Democrats held the Majority at House	48 (21.05)	
Months Democrats held the Majority at Senate	119 (52.19)	
Months Democrats had Control of the Government	97 (42.54)	
Violent Crimes		1,328.06 (100.21)
Unemployment Rate		6.02 (1.76)
9/11 Attacks	5 (2.19)	
2008 Presidential Election	5 (2.19)	
Hunting Season	76 (33.33)	

Note: Gun sales are measured in thousands.

The study tests variations in gun sale numbers following a specific event (mass shooting),

which means temporal order is relevant, as the change in gun sale numbers is expected to have a

lagged effect. A lagged effect is "the delayed response of a dependent variable to a change in an

independent variable" (Duignan, 2016). With this type of data, different statistical tests like time

series analysis and structural equation modeling are possible, yet the current study will use

Ordinary Least Squares (OLS) regression. This test was chosen because previous research has

established that the complicated dynamics of politics are better understood when OLS is used in

research that involves time series data (Keele & Kelly, 2006).

In order to test the first hypothesis, gun sales are regressed on the lagged variable for mass shootings. This simple model reveals whether mass shootings significantly increase the number of gun sales. This same regression is then re-run, while accounting for the control variables. This illustrates if, as expected, the control variables affect gun sales. In order to test the second hypothesis, gun sales are regressed on the lagged variable for mass shootings, while accounting for all four variables relevant to politics, and the control variables. A model including the Democratic Government variable is run separately from the independent branches of Congress in order to test for direct effects of each branch by itself. A fourth and last model tests for the interaction effects of politics and mass shootings on gun sales (variable created by centering the relevant variables, then multiplying the effects of mass shootings alone with the effects of a Democratic Government alone), while still accounting for the control variables.

Chapter 5

Results

The results of the OLS regression analysis, shown in Table 2 (see page 34), reveal that the association between gun sales and the lagged effect of a mass shooting is statistically significant (Model 1A; $p<0.01$). This means that the occurrence of a mass shooting in the prior month is associated with an increase in gun sales of 312.71 (in thousands) units in the following month ($SE= 85.51$; $p<0.01$). It is worth noting that the R^2 value is very small ($R^2 = 0.056$), so this simple model does not hold a lot of explanatory power. In hopes of increasing this power, a new model (1B), which included control variables, was run. This did increase the explanatory power, as the model now explains 84.8% of the variance ($R^2 = 0.848$), however the statistically significant association previously found between gun sales and the lagged effect of a mass shooting has become insignificant ($p=0.06$). Taking this into consideration, hypothesis one has to be rejected, as there is not enough evidence to support previous research findings that gun sales increase following a mass shooting when accounting for other factors that influence gun sales. This finding is discussed in detail in the next chapter.

Table 2. *OLS Regression Analysis Representing the Main Effect of Mass Shootings on Gun Sales*

Variable	Regression Coefficient (SE) Control Variables Excluded (Model 1A, N=227)	Regression Coefficient (SE) Control Variables Included (Model 1B, N=226)
Lagged Mass Shootings	312.71** (85.51)	68.17 (36.08)
2-Month Lagged Gun Sales		0.0007**(0.00004)
Violent Crime		-1.7** (0.29)
Unemployment Rate		- 34.96** (11.52)
2008 Presidential Election		205.50 (106.19)
9/11 Attacks		-6.16 (105.18)
Hunting Season		327.03** (32.80)
Constant	1,128.91**(42.58)	2,732.03**(467.25)

Note: R^2 Model 1A = 0.056; R^2 Model 1B = 0.848; *$p<0.05$; **$p<0.01$

In order to test the second hypothesis, three different models were run two times, one excluding the control variables (Models 2A, 3A, and 4A), and one including them (Models 2B, 3B, and 4B). Models 2 and 3 test the direct effect of the different variables regarding a Democratic Government, while model 4 tests the moderating effect of the Democratic Government variable on gun sales following a mass shooting. The results for Models 2 and 3 can be found in Table 3 (see page 35), while the results for Model 4 are presented in Table 4 (see page 36).

The results of models 2 and 3 follow the results of model 1. When not including the control variables in the models, most of the independent variables of interest are statistically significant (Model 2A: Mass shootings $\beta = 277.85$, $p<0.01$, Democrat Controlled Government $\beta = 223.58$, $p<0.05$; Model 3A: Mass shootings $\beta = 206.12$, $p<0.01$, Presidency $\beta = 495.60$, $p<0.01$, Majority at House $\beta = -118.19$, $p>0.05$, Majority at Senate $\beta = 30.70$, $p>0.05$). However, once the variables determined to have a confounding effect are included, those associations become insignificant. The theory that the chosen control variables are relevant to the relationship between gun sales and mass shootings is further supported by the R^2 values. When not accounting for these variables, model 3 offers the most explanatory power, at a mere 25.4%.

Once the explanatory variables are included, both models R^2 increase to over 80% each (Model 2B: $R^2 = 0.848$; Model 3B: $R^2 = 0.850$). While it is common that the R^2 value increases when new variables are accounted for, this is a significant raise in explanatory power that illustrates the relevance of the added variables for the second version of each model.

Table 3. *OLS Regression Analysis Representing the Main Effects of Mass Shootings on Gun Sales, While Accounting for a Democratic Government*

	Variable	Regression Coefficient (SE) Control Variables Excluded (Model A, N=227)	Regression Coefficient (SE) Control Variables Included (Model B, N=226)
M	Lagged Mass Shootings	277.85** (84.76)	70.67 (36.53)
O	Democrat Controlled Government	223.58* (73.41)	-20.83 (44.14)
D	2-Month Lagged Gun Sales		0.0007**(0.00004)
E	Violent Crime		-1.72** (0.29)
L	Unemployment Rate		-31.56* (13.61)
	2008 Presidential Election		212.74*(107.48)
	9/11 Attacks		-10.66 (105.8)
	Hunting Season		327.21** (32.86)
2	Constant	1,041.82**(50.26)	2,747.45**(469.23)
M	Lagged Mass Shootings	206.12** (77.82)	65.96 (36.37)
O	Democrat Presidency	495.60** (68.1)	34.33 (40.22)
D	Democrat Controlled House	- 118.19 (93.51)	67.08 (51.64)
E	Democrat Controlled Senate	30.70 (77.08)	- 30.78 (43.46)
L	2-Month Lagged Gun Sales		0.0007**(0.00004)
	Violent Crime		- 1.82** (0.35)
	Unemployment Rate		- 42.20** (14.60)
	2008 Presidential Election		190.21 (108.01)
	9/11 Attacks		46.61 (112.77)
	Hunting Season		321.90** (33.03)
3	Constant	897.28**(58.12)	2,942.52**(555.20)

Note: R^2 Model 2A = 0.094; R^2 Model 2B = 0.848; R^2 Model 3A = 0.254; R^2 Model 3B = 0.850; *$p<0.05$; **$p<0.01$

Hypothesis two does not appear to be supported from the two previous models (Models 2 and 3), however, the most relevant test for this hypothesis is in model 4. This is the case because the hypothesis predicts a moderating effect between a Democratic Government and mass shootings. Results indicate that there is a statistically significant negative interaction between

mass shootings and a Democratic Government (β = -156.88, $p<0.05$), in association with gun

sales. This means hypothesis two is partially supported, because even though a Democratic

Government does moderate the effect mass shootings have on gun sales, the relationship went in

the opposite direction as hypothesized. This shows that while Democrats are in power, gun sales

are expected to decrease by 156.88 (in thousands; $p<0.05$) in the month following a mass

shooting. It is worth noting that the explanatory power for this last model is 85.2% (R^2 = 0.852),

which is remarkably high considering fields that attempt to explain human behavior rarely get

high R^2 values (Minitab, 2013).

Table 4. *OLS Regression Analysis Representing the Moderating Effect of Mass Shootings on Gun Sales,
while accounting for a moderating effect from a Democratic Government*

Variable	Regression Coefficient (SE) Control Variables Excluded (Model 4A, N=227)	Regression Coefficient (SE) Control Variables Included (Model 4B, N=226)
Lagged Mass Shootings (Centered)	314.54** (84.67)	84.87* (36.79)
Democrat Controlled Government (Centered)	227.09** (72.41)	-16.57 (43.80)
Interaction	- 452.75** (167.18)	-156.88* (71.45)
2-Month Lagged Gun Sales		0.0007**(0.00004)
Violent Crime Rate		-1.76** (0.29)
Unemployment Rate		- 32.61* (13.50)
2008 Presidential Election		191.83 (106.97)
9/11 Attacks		5.75 (105.14)
Hunting Season		326.88** (32.58)
Constant	1,217.214**(35.81)	2,842.60**(465.30)

Note: Interaction variable = Lagged Mass Shootings * Democratic Government Variable;
R^2 Model 4A = 0.123; R^2 Model 4B = 0.852; *$p<0.05$; **$p<0.01$

Chapter 6

Discussion

The first purpose of the current study was to determine whether or not gun sales increase following a mass shooting. While prior analyses have looked at similar issues, this study moves beyond the extant literature by incorporating various control variables that have been independently found to be relevant, and by studying the issue on a national scale. Previous research determined gun sales increase following a mass shooting, and so this study hypothesized the same. The second purpose of the study was to determine whether the country's governing political party moderates the impact mass shootings have in gun sales. It was hypothesized that it did, with gun sales being most impacted when a mass shooting occurred and the Democrats are in power. This is important to know, because knowing whether trends in gun sales after a mass shooting are influenced by the governing political party can help inform policy decisions to control violence.

In its simplest form, the relationship between gun sales and mass shootings was supported. However, once the control variables were included in the model, the statistical significance previously found disappeared. As such, hypothesis one was rejected, as there is no evidence that gun sales increase after a mass shooting while accounting for confounding variables. This finding directly contradicts previous research that was the basis for hypothesis one (Wallace, 2015; Studert et. al., 2017; Turchan et. al., 2017). This is believed to be due to one of at least two possibilities, discussed below.

The first possibility for why the results in the current research did not support previous studies' findings is that one of the studied variables has been influenced by a desensitizing effect. Considering there have been at least 239 school shootings since Sandy Hook in 2012 (Mother Jones, 2019), it is plausible that this high frequency of violence has started affecting Americans less with each additional occurrence. In an interview with The Cut, Tulane social work professor, Charles Figley talked about this possibility, and described how the human nature of looking for happiness leads to a tunnel vision adaptation that does not allow for traumatic events to affect people, as long as it does not impact the person directly (Morgan & Figley, 2018). This theory of desensitization was also studied by Kaminski and colleagues while researching the impact of the Virginia Tech and Northern Illinois University shootings on fear of crime on University of South Carolina's campus. They found that the Virginia Tech was more impactful, not only because more people were killed on the Virginia Tech attack, but also because the NIU massacre happened afterwards, decreasing its impact (Kaminski et. al., 2010). Taking this into consideration, it is possible gun sales stop seeing the effects of mass shootings, because people are no longer scared of more attacks, nor are they scared of the possibility of restrictive gun reform being implemented. It could also be due to a ceiling effect, as people may buy guns following a particularly notorious mass shooting, but when the next one occurs, they might feel that they are already protected since they own a gun, and they would then have no need to purchase more firearms.

The second possibility could be due to the analytical strategy used. Recalling the information provided in the literature review, two of the three discussed articles evidencing the positive relation between mass shootings and gun sales accounted for at least one of the control variables that were included in the current research, but neither included all. Wallace (2015)

accounted for violent crime rate, and the Obama election (simplified as a dummy variable differentiating pre/post months in which Obama was in office), while Turchan and colleagues (2017) accounted for political affiliation (measured as election results for the previous two presidential elections), local violent crime rates, and hunting license rates (this last one, while similar, did not account for the effects of hunting season). Considering the current research found all the included variables to be statistically significant (three of them at the $p<0.01$ level), it is clear that these variables have an effect on gun sales. As such, failing to include all of them in any statistical model with hopes of studying the relationship between mass shootings and gun sales would lead to inaccurate results.

Evaluating the second hypothesis required the development of a few different models, all leading to model 4, which directly tests the moderating effect a Democratic Government has on gun sales following mass shootings. Throughout the model development, the lagged variable for mass shootings was always significant when the models did not include the control variables, but lost its significance when the same were included. This further supports the decision taken in regards to the first hypothesis above. It also reconfirms the relevance of the studied control variables, and supports the speculation that previous research got different results because they fail to include all these variables. The same loss of significance was experienced by the Democrat Controlled Government variable and the branches of Congress variables when control variables were introduced into the models, meaning that a Democratic Government, Holding Majority at House, Holding Majority at Senate, nor Holding the Presidency individually affect gun sales.

After running model 4, hypothesis two was partially supported, as it was shown that the interaction variable between mass shootings and a Democratic Government does affect the

number of gun sales. This is despite the fact that neither mass shootings nor the Democratic Government variable were statistically significant on their own. The finding then upholds the theory for the second hypothesis, as gun sales react to an interaction between mass shootings and a Democratic Government. It is worth noting that the original hypothesis theorized an increase in gun sales when Democrats were in power, yet findings actually uncovered a significant decrease in gun sales when the Blue Party holds power. As such, hypothesis two is only partially supported. Like with hypothesis one, there are at least two possibilities for why this was the case. These are explained below.

The first explanation to why gun sales decrease following a mass shooting when Democrats are in power is that the population buying guns is different when Republicans are in power than when Democrats are in power. Considering for each of the houses of Congress the popular vote determines who will be representing the citizens, elected officials can be an indication for the country's political affiliation. For a Democratic government to be in place, the majority of Americans will have to have voted in favor of the Democratic platform. As such, it can be said that a Democratic government represents a Democratic population. Considering Turchan and colleagues (2017) established a statistically significant relationship between a Republican population and increased gun sales, it can be assumed that a Democratic population has either no effect on gun sales, or is associated with a decrease in gun sales. As such, the impact of a Democratic government on gun sales would only be enhanced by a mass shooting, leading people to agree with the reigning platform more than ever, possibly even turning their gun purchasing intentions into an advocacy for gun reform. This Democratic social perception on gun restrictions would also possibly decrease the fear of attacks, as people would know that by

trying to limit access to guns, the government is working on preventing violence and making the country a safer place.

The second explanation goes back to the analytical plan. In the past, media outlets have reported that following mass shootings, gun sales do not immediately go up; rather, the increase comes after some part of the government threatens gun reform and lowered gun availability (Aisch & Keller, 2016). This same finding has been evidenced in academic research. Wallace (2015) found that some mass shootings did not start affecting gun sales until six months afterwards, while Studdert and colleagues (2017) saw an effect that lasted for up to 12 weeks. As such, this study failed in only lagging the gun sales variable for a single month. This also means that it is possible that the Democratic Government variable was not given the best conceptualization for this study. Since the effect on gun sales has been found to have a lag of up to six months, it is possible that the impact of the governing political party changes within that time. As such, the governing party at the time of the shooting would not be relevant, but how they react once the calls for gun control start would. Another way to get at this would be to study the restrictiveness of the gun bills that are introduced following mass shootings, and studying whether more restrictive controls leads to higher sales. This is important to study, as overcoming this study's methodological limitations would yield results more relevant to the question of how politics moderates the effects of mass shootings on gun sales.

Limitations and Future Directions

The current research has a few relevant limitations that future research should consider. The three main concerns all revolve around the data. Due to the lack of information there is on actual number of gun sales, number of background checks was picked as the most appropriate proxy variable. However, this does not allow the research to account for people who already had

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a gun license and are buying guns to expand their collection. Similarly, this proxy variable does not account for the people who are purchasing a gun illegally, and skipping the license process altogether. Another limitation is failing to include other possible confounding variables, like the landmark case of DC v. Heller, the entirety of Obama's time in office or Trump's election and time in office. The former could be a limitation due to the fact that the Supreme Courts' upholding of the Second Amendment right could lead to a decrease in fear of gun unavailability. This means people would not be so quick to buy guns out of fear of missing out later, because the ruling guaranteed that guns were to be available to individuals. The latter could also be limitations due to the rhetoric each president used during their time in office. Obama was always vocal about his belief in gun restrictions being the answer to violence, so it can be argued that throughout his time in office, people were more scared of gun unavailability, increasing sales. Trump, on the other hand, has made it clear he would only change gun regulations in order to make them more accessible. As with the DC v. Heller case, this means people should have no fear of gun unavailability, and so gun sales should decrease. The final limitation regarding the data comes from the nature of politics. While gun sales were reported on a monthly basis, government changes every two years at its fastest, which means not a lot of variation was seen throughout the study, even though 19 years of data were analyzed. In order to study theories involving the influence of changing parts of the government, a substantially larger range of dates would be ideal, as then the effects of the changes would be more evident.

Future research can get around some of these limitations by trying to get at the problem from a different angle. For example, since it is known that the majority of millennial and Generation X are Democrats (Pew Research Center, 2018), future studies could control for age of background check applicant. By doing this, they could then compare median age of gun

buyers with the national mean. A median above the mean would then indicate Republicans are buying more guns than Democrats following mass shootings.

A different, but relevant, study that could be conducted regarding this topic would investigate the impact the number of mass shootings has on gun sales. The current study simplified the mass shooting variable to a dummy variable, simply accounting for whether or not a mass shooting had occurred. It did not account for repeated shootings. Considering the number of mass shootings per month has been above one in recent years (Follman et. al., 2019), it would be informative to study whether additional shootings increase the impact on gun sales, or if it is like in other fields where the impact of subsequent events is minimal compared to the first relevant event (e.g. Implicit Bias; Correll et. al., 2011).

Conclusions

The current research aimed to expand the literature by answering two basic questions: 1) Do gun sales increase following a mass shooting? 2) Does a Democratic Government influence the relationship between mass shootings and gun sales by creating a more prominent spike? The answer to the first question was unsatisfactory, as there was no evidence of an increase in gun sales following mass shootings while accounting for relevant control variables like violent crime, the 9/11 attacks, the first Obama election, hunting season, and economic status of the country. The answer to the second question was surprising, as it was found that when Democrats are in power and a mass shooting occurs, the number of gun sale decreases. This could mean that the Democratic platform is more correct than the Republican platform in their approach to decreasing violent crime through gun regulation. The importance of this research lays in the fact that this is a novel dataset that could help identify the changing patterns of this problem

throughout time. Additionally, this was the first national study of its kind, as such, it is groundbreaking in its approach.

References

Adams, S (Interviewer) & Daniel, M. (Interviewee). (2017). A gun maker reveals what Trump's presidency means for his business. *Forbes Magazine.* Retrrieved from https://www.forbes.com/sites/forbestreptalks/2017/02/06/a-gun-maker-reveals-what-trumps-presidency-means-for-his-business/#5ec613fa16a9

Aish, G., & Keller, J. (2016). What happens after calls for new gun restrictions? Sales go up. *The New York Times.* Retrieved from https://www.nytimes.com/interactive/2015/12/10/us/gun-sales-terrorism-obama-restrictions.html

Altemeyer, B. (1988). *Enemies of freedom: Understanding rightwing authoritarianism*. San Francisco, CA: Jossey-Bass.

Ascensio, E., Merrill, M., Steiner, M. (2014). Self-esteem, the fear of crime, and the decision to protect oneself from victimization. *Sociological Forum, 29*(3). 587-606

Bagalman, E., Caldwell, S. W., Finklea, K. M., & McCallion, G. (2013). Public mass shootings in the United States: Selected implications for federal public health and safety policy. (Congressional Research Service, R43004). Retrieved from https://journalistsresource.org/wp-content/uploads/2013/03/MassShootings_CongResServ.pdf

Bardeen, J.R., Kumpula, M. J., & Orcutt, H.K. (2013). Emotion regulation difficulties as a prospective predictor of posttraumatic stress symptoms following a mass shooting. *Journal of Anxiety Disorders, 27*(1), 188-196. doi: 10.1016/j.janxdis.2013.01.003

Barry, C.L, McGinty, E. E., Vernick, J. S., & Webster, D. W. (2015). Two years after Newtown – public opinion on gun policy revisited. *Preventive Medicine 79*(1), 55-58. doi: 10.1016/j.ypmed.2015.05.007

Barton, M., Weil, F., Jackson, M., & Hickey, D. (2017). An investigation of the influence of the spatial distribution of neighborhood violent crime on fear of crime. *Crime & Delinquency, 63*(13). 1757-1776.

Behavioral Analysis Unit. (2005). Serial murder: Multi-disciplinary perspectives for investigators. *Federal Bureau of Investigation*. Retrieved from https://www.fbi.gov/stats-services/publications/serial-murder#two

Ben-Ezra, M., Leshem, E., & Goodwin, R. (2015). In the wake of national trauma: psychological reactions following the Charlie Hebdo terror attack. *The American Journal of Psychiatry 172*(8), 795-796. doi: 10.1176/appi.ajp.2015.15020239

Ben-Ezra, M., Hamama-Raz, Y., Mahat-Shamir, M., Pitcho-Prelorentzos, S., & Kaniasty, K. (2017). Shattering core beliefs: Psychological reactions to mass shooting in Orlando. *Journal of Psychiatric Research 85*(1), 56-58. doi: 10.1016/j.jpsychires.2016.09.033

Bjelopera, J., Bagalman, E., Caldwell, S.W., Finklea, K.M., & McCallion, G. (2013). Public mass shootings in the United States: Selected implications for federal public health and safety policy. *Congressional Research Service Report for Congress*. 1(1), 1-40. Retrieved from https://fas.org/sgp/crs/misc/R43004.pdf

Blum, D., & Gonzalez Jaworski, C. (2016). From suicide and strain to mass murder. *Social Science and Public Policy, (53)*1. 408-413.

Briggs, W. (2017). *How America got its guns: A history of the gun violence crisis.* Albuquerque, NM: University of New Mexico Press.

Bower, B. (2018). Why science still can't pinpoint a mass shooter in the making. *Science News. 193*(7), p. 14.

Cain, G. (1979). The unemployment rate as an economic indicator. *Monthly Labor Review 102*(3), 24-35.

Cao, L., Cullen, F., Link, B. (1997). The social determinants of gun ownership: Self-protection in an urban environment. *Criminology, 35*(4). 629-657.

Capellan, J. A. (2016). *Looking Upstream: A Sociological Investigation of Mass Public Shootings* (Doctoral dissertation). Retrieved from CUNY Academic Works.

Capellan, J.A. (2017). Change and stability in offender, behaviours, and incident-level characteristics of mass public shootings in the United States, 1984-2015. *Journal of Investigative Psychology and Offender Profiling, 15*(1). 51-72.

Chapman, S. (2013). *Over our dead bodies: Port Arthur and Australia's fight for gun control*. Sydney, Australia: Sydney University Press.

Chapman, S., Alpers, P., & Jones, M. (2016). Association between gun law reforms and intentional firearm deaths in Australia, 1979-2013. *JAMA, 316*(3), 291-299.

Chau, E. (2018). The effects of mass shootings on gun sales. *College of the Holy Cross, Department of Economics, Faculty Research Series.* Retrieved from http://web.holycross.edu/RePEc/hcx/HC1804-Chau_GunSales.pdf

Concaro, C., & Olaeta, H. (2011). Violencia armada y el desarme de la sociedad civil. El caso de la República de Argentina. *Revista Latinoamericana de Estudios de Seguridad. 10*(1), 60-76.

Correll, J., Wittenbrink, B., Park, B., Judd, C. M., & Goyle, A. (2011). Dangerous enough: Moderating racial bias with contextual threat cues. *Journal of Experimental Social Psychology, 47*(1), 184–189. [SEP]

Dane, L. (2013). Why more gun control won't prevent mass shootings. *The Daily Sheeple*. Retrieved from http://www.thedailysheeple.com/why-more-gun-control-wont-prevent-mass-shootings_122013

Deane, C., Duggan M., Moring, R. (2016). Americans name the 10 most significant historic events of their lifetimes. *Pew Research Center*. Retrieved from: http://www.people-press.org/2016/12/15/americans-name-the-10-most-significant-historic-events-of-their-lifetimes/

Democrats. (2018). *Our Platform*. Retrieved from https://democrats.org/about/party-platform/?source=homepage

Depetris-Chauvin, E. (2013). Fear of Obama: An empirial study of the demand for guns and the U.S. presidential election. *Journal of Public Economics 130*(1), 66-79

Disaster Center. United States Population and Number of Crimes 1960 – 2017. Retrieved from http://www.disastercenter.com/crime/uscrime.htm

Donohue, J. (2017). Does increased gun ownership help decrease crime? *Stanford Lawer – NPR Interview.* Retrieved from https://www.npr.org/2017/11/07/562619774/does-increased-gun-ownership-help-decrease-crime

Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology, 33*, 41-114. doi: 10.1016/S0065-2601(01)80004-6

Duignan, John. (2016). *A dictionary of business research methods.* Oxford, United Kingdom: Oxford University Press.

Duwe, G. (2000). Body-count journalism: The presentation of mass murder in the news media. *Homicide Studies,* 4(1), 364-399. doi:10.1177/1088767900004004004

Duwe, G., Kovandzic, T., & Moody, C. E. (2002). The impact of right-to-carry concealed firearm laws on mass public shootings. *Homicide Studies, 6(1)*, 271-296. doi:10.1177/108876702237341

Eskey, M., O'Connor, T., Rush, J., & Schmalleger, F. (2016). Mass killings: What we know and where do we go: Roundtable discussion, Southern Criminal Justice Association, 2015. *Journal of Social Sciences and Humanities 1*(5), 528-539. Retrieved from http://www.aiscience.org/journal/jssh

Flores, R.D. (2015). Taking the law into their own hands: Do local anti-immigrant ordinances increase gun sales? *Social Problems, 62*(3), 363-390. doi: 10.1093/socpro/spv012

Follman, M., Aronsen, G., & Pan, D. (2019). US Mass Shootings, 1982-2019: Data From Mother Jones' Investigation. *Mother Jones.* Retrieve from: https://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data/

Frances, A. (2014). The Mind of the Mass Murderer. *Psychiatric Times*, *31*(7), 1-2.

GOP. (2018). *Republican Platform*. Retrieved from https://prod-cdn-static.gop.com/static/home/data/platform.pdf

Gopal, A., & Greenwood, B. (2017). Traders, guns, and money: The effects of mass shootings on stock prices of firearm manufacturers in the U.S. *Plos One, 12*(5). 1-29. doi: 10.1371/journal.pone.0177720

Grinshteyn, E., Eisenman, D., Cunningham, W., Andersen, R., & Ettner, S. (2016). Individual- and neighborhood-level determinants of fear of violent crime among adolescents. *Family & Community Health, 39*(2). 103-112.

Harvard Injury Control Research Center. *Reasons for gun ownership, 2015*. Retrieved from https://www.hsph.harvard.edu/hicrc/

Hepburn, L., & Hemenway, D. (2004). Firearm availability and homicide: A review of the literature. *Aggression and Violent Behavior, 9*(4), 417-440. doi: 10.1016/S1359-1789(03)00044-2

Hepburn, L., Miller, M., & Azrael, D. (2007). The US gun stock: Results from the 2004 National Firearms Survey. *Injury Prevention*, *13*(1), 15-19. doi: 10.1136/ip.2006.013607

History, Art, & Archives. (n.d.) *Party Divisions of the House of Representatives, 1789 to Present*. [Data file]. Retrieved from https://history.house.gov/Institution/Party-Divisions/Party-Divisions/

Holian, D. (2004). He's stealing my issues! Clinton's crime rethoric and the dunamics of issue ownership. *Political Behavior, 26*(2). 95-124

Indiana Department of Natural Resources. (2019). *Hunting and trapping seasons*. Retrieved from https://www.in.gov/dnr/fishwild/files/fw-hunting_trapping_seasons.pdf

Jang, S. M. (2019). Mass shootings backfire: The boomerang effect of death concerns and policy attitudes. *Journal of Media Psychology, 22*(2). 298-322.

Kaminski, R. J., Koons-Witt, B.A., Stewart Thompson, N., & Weiss, D. (2010). The impacts of the Virginia Tech and Northern Illinois University shootings on fear of crime on campus. *Journal of Criminal Justice 38*(1), 88-98. doi: 10.1016/j.jcrimjus.2009.11.011

Keele, L., & Kelly, N. (2006). Dynamic models for dynamic theories: The ins and outs of lagged dependent variables. *Political Analysis, 14*(2). 186-205

Kentucky Department of Fish & Wildlife Resources. (2019). *Season Dates.* Retrieved from https://app.fw.ky.gov/seasondates/

Kleck, G. (1991). *Point Blank: Guns and Violence in America*. New York, NY: Routledge

Kleck, G., & Gertz, M. (1995). Armed resistance to crime: The prevalence and nature of self-defense with a gun. *The Journal of Criminal Law and Criminology, 86*(1), 150-187.

Kleck, G., Kovandzik, T., Saber, M., & Hauser, W. (2011). The effect of perceived risk of victimization on plans to purchase a gun for self-protection. *Journal of Criminal Justice*, *39*(1), 312-319. doi: 10.1016/j.jcrimjus.2011.03.002

Knoll, J., & Pies, R. (2019). Moving beyond "motives" in mass shootings. *Psychiatric Times, 36*(1). 1-2.

Laino, D. (2004). Sobre lo acontecido en una escuela de Carmen de Patagones. *Dialogos Pedagogicos.* Retrieved from http://revistas.bibdigital.uccor.edu.ar/ojs/index.php/prueba/article/viewFile/381/pdf

LaPierre, W. (2012). NRA press conference December 21, 2012 (Transcript). Fairfax, VA: National Rifle Association.

Lemieux, F., (2014). Effect of gun culture and firearm laws on gun violence and mass shootings in the United States: A multi-level quantitative analysis. *International Journal of Criminal Justice Sciences, 9*(1), 74-93. Retrieved from http://www.sascv.org/ijcjs/

Leverentz, A. (2012). Narratives of crime and criminals: How places socially construct the crime problem." *Sociological Forum, 27*(2). 348-371.

Levitz, E. (2018). America already has a centrist party. It's called the Democrats. *Intelligencer*. Retrieved from http://nymag.com/intelligencer/2018/10/tribalism-exhausted-majority-centrism-david-brooks-democratic-party.html

Lizotte, A., & Bordua, D. (1980). Firearms ownership for sport and protection: Two divergent models. *American Sociological Review, 45*(April), 229-244.

Lott, J. R. (1998). *More Guns Less Crime.* Chicago, IL: The University of Chicago Press.

Luca, M., Malhotra, D., & Poliquin, C. (2016). The impact of mass shootings on gun policy. *Harvard Business School*.

Mahdawi, A. (2018). Doors, backpacks and Ritalin: What Republicans have blamed school shootings on. *The Guardian.* Retrieved from https://www.theguardian.com/us-news/2018/may/21/school-shootings-republicans-nra-blame-gun-violence

Mayou, C. (2016). *Hunting Seasons By State*. [Data file]. Retrieved from https://papaswarehouse.com/blogs/blogs/deer-hunting-seasons-by-state

May, D., Rader, N., & Goodrum, S. (2010). A gendered assessment of the "threat of victimization": Examining gender differences in fear of crime, perceived risk, avoidance, and defensive behavior. *Criminal Justice Review, 35*(2). 159-182.

Minitab, (2013). Regression analysis: How do I interpret R-squared and assess the goodness-of-fit. *The Minitab Blog*. Retrieved from http://blog.minitab.com/blog/adventures-in-statistics-2/regression-analysis-how-do-i-interpret-r-squared-and-assess-the-goodness-of-fit

Miniter, F. (2016, August 11). Proof that Hillary does want to make the second amendment meaningless. *Forbes*. Retrieved from https://www.forbes.com/sites/frankminiter/2016/08/11/proof-that-hillary-does-want-to-make-the-second-amendment-meaningless/#2a706d54297c

Missouri Department of Conservation. (2019). *Hunting seasons*. Retrieved from https://huntfish.mdc.mo.gov/hunting-trapping/seasons/species

Monuteaux, M., Lee, L., Hemenway, D., Mannix, R., & Fleegler, E. (2015). Firearm ownership and violent crime in the U.S. *American Journal of Preventive Medicine, 49*(2), 207-214.

Morgan, K., & Figley, C. (2018). The psychological explanation for why we become desensitized to mass shootings. *The Cut.* Retrieved from https://www.thecut.com/2018/02/stoneman-shooting-why-we-become-desensitized-to-mass-shootings.html

Multpl. (2019). *US Unemployment Rate by Month.* [Data file]. Retrieved from www.multpl.com/unemployment/table?f=m

Newton, G., & Zimring, F. (1969). Firearms & violence in American life. *National Commission on the Causes and Prevention of Violence.*

National Institute of Justice. (2011). *Gun Violence.* Retrieved from https://www.nij.gov/topics/crime/gun-violence/pages/welcome.aspx#note2

Pane, L. (2018). After mass shootings, NRA pins blame on familiar list. *The Associated Press News.* Retrieved from https://www.apnews.com/d9e2f6f20c6c48869109c5f4a5d6d348

Parker, K., Mensace Horowitz, J., Igielnik, R, Oliphant, B., & Brown, A. (2017). The demographics of gun ownerships. *Paw Research Center.* Retrieved from http://www.pewsocialtrends.org/2017/06/22/the-demographics-of-gun-ownership/

Pew Research Center, (2018). Millennials are the most Democratic generation, Silents the most Republican. *Pew Research Center.* Retrieved from http://www.people-press.org/2018/03/01/1-generations-party-identification-midterm-voting-preferences-views-of-trump/030118_1_1/

Rader, N. (2007). An empirical assessment of the threat of victimization: Considering fear of crime, perceived risk and avoidance or defensive Behaviors. *Sociological Spectrum, 27*(5). 475-505.

Rahamim, S. (2018). From dream to nightmare: Gun violence in America. *Interdisciplinary Journal of Partnership Studies, 5*(2). Article 7.

Rojanasakul, M. (2017). Gun Sales in America Have Stopped Spiking After Mass Shootings. *Bloomberg.* Retrieved from https://www.bloomberg.com/graphics/2017-gun-sales-in-america-stopped-spiking-after-mass-shootings/

Santos, F. (2015). In wake of shootings, a familiar call to arms drives latest jump in weapon sales. *The New York Times.* Retrieved from https://www.nytimes.com/2015/12/06/us/in-wake-of-shootings-a-familiar-call-to-arms-drives-latest-jump-in-weapon-sales.html

Scholastic. (n.d). *Timeline Guide To The U.S. Presidents.* [Data file]. Retrieved from https://www.scholastic.com/teachers/articles/teaching-content/timeline-guide-us-presidents/

Schuman, H., & Stanley, P. (1981). The attitude-action connection and the issue of gun control. *The ANNALS of the American Academy of Political and Social Science 455* (1): 40–47.

Stroebe, W. (2015). Firearm availability and violent death: The need for a culture change in attitudes toward guns. *Analyses of Social Issues and Public Policy, 16*(1). 7-35.

Stroebe, W., Leander, N. P., & Kruglanski, A. W. (2017a). Is it a dangerous world out there? The motivational bases of American gun ownership. *Personality And Social Psychology Bulletin, 43*(8), 1071-1085. doi: 10.1177/0146167217703952

Stroebe, W., Leander, P.N., & Kruglanski, A. (2017b). The impact of the Orlando mass shooting on fear of victimization and gun-purchasing intentions: Not what one might expect. *PLoS ONE, 12*(8), 1-15. doi: 10.1371/journal.pone.0182408

Studdert, D.V., Zhang, Y., Rodden, J.A., Hyndman, R.J., & Wintemute, G.J. (2017). Handgun acquisitions in California after two mass shootings. *Annals of Internal Medicine, 166*(1), 698-706. doi: 10.7326/M16-1574

Sullivan, A. (2018). Remember when Democrats didn't want to take your guns? *The Gazette*. Retrieved from https://www.thegazette.com/subject/opinion/staff-columnist/remember-when-democrats-didnt-want-to-take-your-guns-20181120

The Heritage Foundation. (2018). Chapter 2: Societies thrive as economic freedom grows. *2018 Index of Economic Freedom*. Retrieved from https://www.heritage.org/index/pdf/2018/book/chapter2.pdf

The Lancet. (2016). Gun violence in America: a national crisis. *The Lancet, 387*(1). 223.

Tobin, J.S. (2017). The gun control debate is pointless until liberals admit they want to repeal the second amendment. *The Federalist*. Retrieved from http://thefederalist.com/2017/10/04/gun-control-debate-pointless-liberals-admit-want-repeal-second-amendment/

Turchan, B., Zeoili, A.M., & Kwiatkowski, C. (2017). Reacting to the improbable: Handgun carrying permit application rates in the wake of high-profile mass shootings. *Sage Publications 21*(4), 267-286. doi: 10.1177/1088767917699657

United States Senate. (n.d.). *Party Division* [Data file]. Retrieved from https://www.senate.gov/history/partydiv.htm

U.S. Const. amend. II. Retrieved from https://www.gpo.gov/fdsys/pkg/GPO-CONAN-1992/pdf/GPO-CONAN-1992-10-3.pdf

Vogt, W. P. (2005). *Dictionary of statistics & methodology*. Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412983907

Wallace, L.N. (2015). Responding to violence with guns: Mass shootings and gun acquisition. *The Social Science Journal, 52*(1), 156-167. doi: 10.1016/j.soscij.2015.03.002

Webster, D. (2017). The true effect of mass shootings on Americans. *Annals of Internal Medicine, The Johns Hopkings Center for Gun Policy*. Retrieved from https://annals.org/aim/fullarticle/2624992/true-effect-mass-shootings-americans

Wiener-Bronner, D. (Interviewer) & Dionisio, R. (Interviewee). (2017, October 3). What the Las Vegas killing spree could mean for the gun industry. *CNN*. Retrieved from https://money.cnn.com/2017/10/03/news/gun-sales-las-vegas/index.html