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The *Gettysburg Social Sciences Review* (*GSSR*) began in 2017 by Miranda Wisor '17 as a place to showcase the excellent work of undergraduate students in the social sciences at colleges and universities across the world. The journal is unique in that it is authored, reviewed, and edited completely by undergraduate students, tapping into the wealth of knowledge generated at the undergraduate level. While the *GSSR* is maintained by Gettysburg College, submissions are also encouraged and welcomed from students outside the College.

The *Gettysburg Social Sciences Review* is housed in the Cupola, the Gettysburg College online repository for academic work. Currently, the Cupola maintains six specific academic journals in addition to a plethora of student- and faculty-authored works. As an open-access platform that aims to promote the exchange of ideas and equal access opportunities in academia, all published work can be downloaded free of charge. Although all the College's journals are now housed in the Cupola, the *GSSR* was the first to be born entirely digital, making it an even more exciting undertaking as we continue to expand in the future.

This publication marks the second edition of the third volume of the *Gettysburg Social Sciences Review* to be published to date. Since the fall of 2019, the *Gettysburg Social Sciences Review* has reached over 1,070 downloads from 168+ institutions across 60+ countries. With this volume, 25 total works have been published since 2017.

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Table of Contents

Page 4	Political Gridlock: The Ongoing Threat to American Democracy <i>By Jalen Alphonso Campbell</i>
Page 42	Following the Newark, NJ Drinking Water Lead Crisis <i>By Morgan Clauser</i>
Page 66	What is “Safe Sex”? Understanding the Need for Sex Education Reform <i>By Julianne Baker</i>
Page 88	The United States Love Affair with Maize A National Security Issue <i>By Jared Kelly</i>

Political Gridlock: The Ongoing Threat to American Democracy

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Abstract: My paper answers the question: What are the origins of extreme political gridlock in the United States government and how can it be solved? I use quantitative research in order to measure the exact periods of split government, and I note its effect on the probability of enacting legislation. The qualitative research highlights the key factors that led to increasing political gridlock from 1964-2016. From my case study, I argue political gridlock has increased because of ideological shifts in voters and politicians between 1980 and 1992, voting system imbalances, and critical political and economic juncture. I conclude with a comparative analysis of the US Congress, and possible solutions that can be used to solve gridlock. Each solution is linked to one of the key issues established in the case study, and from them I find that through constitutional reforms of the political system, political gridlock can be countered.

Keywords: Political Gridlock, Democratic Systems, Unified Government, Divided Government, Executive Branch, Legislative Branch, American Politics, Solutions to Gridlock.

Introduction

How is political gridlock created in the US government, and what are some ways to solve it? The United States government is one of the first democratic governments created in world history. Through the signing of the Constitution in 1787, the United States federal government was established with three branches of government, the legislative branch, the executive branch, and the judicial branch. The function of each branch of government is to provide a system of checks and balances to limit the power in each individual branch, to enact laws that further increase the rights of American citizens, and to ensure that the American political system runs to the will of the people. Despite being one of the oldest democratic systems, there are problems currently impacting the United States federal government. The main problem is the clashing of political parties within the government, and the negative impact it has on enacting laws. It is because of political gridlock that laws reduce the government's ability to address critical social and economic problems.

For this study, it is important to understand the definition of democracy, and the different types and structures of democratic governments. In Kesselman et al. (2012), countries with democratic governments are divided into two groups: presidential systems (the government of the United States) and parliamentary systems (the government of the United Kingdom), but there are nations that are a combination of both systems (France and Portugal). While structurally different, in order to be classified as democratic governments, parliamentary and presidential systems contain five key

factors: fair and free elections, institutionalized rules and norms, organized critical opposition, basic civil liberties and human rights, and an independent judiciary.

The differences between these democratic governments is shown through the structure of the governments. Presidential systems have independent legislative and executive branches, and the powers of the executive branch are mainly vested in the office of the President, who is the head of government and head of state. A key factor within some Presidential systems, such as the United States, is the existence of a two-party system, with Single Member Districts in national elections. It is the constricting two party system that locks the United States into having either liberal or conservative ideologies, which when given power within the separate executive and legislative branches leads to political gridlock (Kesselman et al. 2012).

In a presidential system, “the legislature and the chief executive have their own fixed schedule [...] and their own political mandate [...] and often have different political agendas” (Kesselman et al. 2012:69). This shows that due to both the legislative and executive branch being independent bodies from each other, they can set different political goals, and this can lead to clashes between both branches of government. Even when both parties in a presidential system are in control of a branch of government, “stalemates on key items of legislation are common” (Kesselman et al. (2012:69)), and it becomes difficult for laws to be created and passed in a Presidential system. Although Kesselman et al. (2012) provide a potential hypothesis for why political gridlock occurs in the United States – due

to the independent executive and legislative branch – there is not a clear consensus in the literature, and I will highlight other potential hypotheses in the subsequent section. Without a clear answer to causes and solutions for gridlock, American politics is doomed to a continuation of political inaction and lack of progress.

The various beliefs over the causes of political gridlock are introduced in the literature review of this paper. I highlight the insights of the authors of scholarly research on the subject and compare the information of most of my sources to see how the findings of each source compliment or contrast with each other. From there, the case study section takes a quantitative and qualitative examination into political gridlock within contemporary America. Information that describes different methods for avoiding gridlock in the United States and other presidential systems is explored in the “Solutions to Gridlock” section. Lastly, my conclusion section presents my understanding of the key factors of political gridlock, and my theories for multiple solutions to gridlock in the American government.

Literature Review

In reviewing the literature, I found five schools of thought that describe why political gridlock occurs in the United States. Within each section, various political scientists provide information that show how political gridlock occurs from cultural reasons or institutional reasons. Cultural explanations for political gridlock would include critical junctures in American society that changed the

political beliefs of both politicians and voters. Institutional reasons would examine how the structure of government, the relationship between both parties in the United States, and the structure of the voting system in the United States cause political gridlock. The cultural causes of political gridlock, as well as a few of the institutional causes of political gridlock are shown by the authors Dolbeare and Cummings (2004); Brady and Volden (2006); and Thurber and Yoshinaka (2015). Each source provides historical factors that have contributed to political gridlock from the 1960s to the contemporary period, but diverge on the direct factors causing political gridlock.

Dolbeare and Cummings (2004), argues the cause of political gridlock was the shift to the “right” by both voters and politicians, in response to the government’s failure in handling crises in both the 1960s and 1970s. The reason for the pull “right” by voters and politicians was the Democratic Party controlled power in the federal government, and influenced policies to promote the ideas of the “left,” such as the Great Society. This was a failure because when the United States began to experience economic problems, many blamed the progressive policies of the Democrats. Some of the examples that Dolbeare and Cummings (2004) provides are: the economic crisis of stagflation, which was created through excess government spending in both the Vietnam War and Great Society programs, the military defeat in the Vietnam War, and the political corruption that was shown in the Watergate scandal. Watergate would lead to a push in Congress to limit presidential powers in the federal

government, while both Watergate and the excess spending from the Vietnam War would push voters to prefer smaller government.

Brady and Volden (2006) agree with Dolbeare and Cummings (2004) that the shift to the “right” in the 1960s and 1970s did lead to political gridlock in the 1980s, and stress the exact cause for the shift was the crisis of stagflation. This is shown when Brady and Volden (2006) point out how the clashes between both the Democratic and Republican parties were mainly over the issues of taxation and government spending. During the presidencies of Ronald Reagan and Bill Clinton, policies that were created by the President of the rival party were able to be passed as legislation in Congress, even if the opposing party controlled it. Brady and Volden (2006) showed that by building coalitions with Congressional members from the opposing party, Presidents still had the ability to pass their own policies for taxation and government spending with little opposition.

Thurber and Yoshinaka (2015), who greatly disagree with Brady and Volden (2006), point out that Presidents have the ability to pass policies within a divided government. Bond, Fleisher, and Cohen. (2015) show how the amount of policies that a President can pass is mainly dependent on their ability to work with both chambers of Congress, not on the popularity of the President. Bond, Fleisher, and Cohen (2015) showed that over time (1953-2012), the success rates of majority Presidents and minority Presidents had greatly widened in the House of Representatives, but the success rates of majority and minority Presidents maintain a steady rate in the Senate. Thurber and Yoshinaka (2015:144) present the argument that the success of

minority presidents mainly rests in the hands of politicians in the House of Representatives, as when party polarization increases in the House “majority presidents win more and minority presidents win less (a lot less).” I will explore this specific dynamic in greater depth with my case studies of gridlock and individual presidential behavior below.

The next set of sources focus on the effects of political gridlock on both the American government and society. Saeki (2009), in addition to Callander and Krehbiel (2014), present the argument that political gridlock causes a barrier for policy implementation in the federal government. They also agree that there are some ways that politicians in the federal government try to prevent political gridlock. Saeki (2009) presents the concept of a “winset,” which is when veto players in Congress “unanimously support a bill for passage” and mainly occurs when interactions occur between politicians of opposing ideologies. Callander and Krehbiel (2014) show how different types of delegations (representative actions) can prevent different types of political gridlocks.

From my research, I have also found the voting system of the United States can be a contributing factor to political gridlock in the federal government. The authors behind such arguments include Adams (1996), Cox and Morgenstern (1993), Abramowitz and Saunders (1998), and Longley and Peirce (1996). Both Adams (1996) and Cox and Morgenstern (1993) show a deeper analysis for the differences between Single-Member Districts and Multi-Member Districts. The same results of the analysis show that even though the

United States mainly uses the “winner-take-all system” of Single-Member Districts at a federal level, on the state/local level Multi-Member Districts are used to elect members for state Houses of Representatives, as they promote more ideological diversity within governments. Cox and Morgenstern (1993) convey how in both state and federal elections, the politicians that have a higher chance of winning those elections are those with incumbency advantages, meaning that they have already served a term in the position that is up for election. Some of the examples of incumbency advantages that are provided include having a higher access and patronage for advertising/media and providing “personal service” to their supporters.

Dolbear and Cummings (2004) agrees with Abramowitz and Saunders (1998) about the shift of American voters to the “right” being caused by issues. These issues called “short-term forces” present cases that show how political realignment of voters lead to the increase in Republican control of Congress in the 1980s. Longley and Peirce (1996) present the argument for how the Electoral College creates an imbalance between the popular votes and the electoral votes that are casted in Presidential elections, and how this imbalance causes groups of people to become discouraged from voting as they feel that it takes away their “voice” in the political system. Abramowitz and Saunders (1998) reinforce the argument that the national voting system of the United States does not help promote the different ideologies of the people, as it mainly promotes the liberal ideals of the Democrats or the conservative ideals of the Republicans,

but fails to provide any room for the ideals of other political beliefs or third parties to gain offices in the federal government – in other words gerrymandering. Dolbeare and Cummings (2004), Abramowitz and Saunders (1998) and Longley and Peirce (1996) show that the use of Single-Member Districts does not allow for better representation of the ideologies of voters, and can be seen as a factor that prevents the political representation that can promote quality legislation.

Case Study

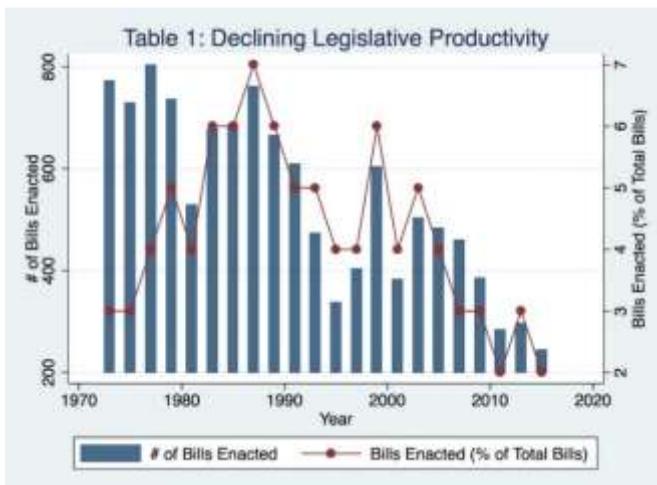
The first step in my research was a quantitative inquiry into gridlock, where I used STATA statistical software to test how legislative success rates in the United States were impacted by three scenarios. First, I show how particular party control of the executive branch can influence the passing of laws. The second variable is party control of the legislative branch, which I used a dichotomous coding for both the executive and legislative variables (dichotomous= 1,0). The last independent variable is unified party control over the federal government, which are periods in time where one party controls both the executive and legislative branches.

To map out these three independent variables, and to see how they relate to the passing of laws in the federal government, I examined party affiliations in the federal government and the number of laws passed by Congress from 1963-2016. For presidential party affiliation, I found that there are four Democratic presidents and five Republican presidents. In terms of Congress, I wrote which party had

control in both chambers of Congress, and found periods where one political party had control of both chambers. Specifically, from 1963-1981, as the Democrats were in control of Congress, which reinforces why voters and politicians made a shift to the “right” during that time-period.

For unified party control of the federal government, I looked at the points in history that one party controlled both chambers and the office of the president, and found that there are four periods where each party had unified control of both branches. The Democrats had three periods of unified party control, which were: Jimmy Carter (1977-1981), Bill Clinton (1993-1995), and Barack Obama (2009-2011). The Republicans had control of both branches during the Presidency of George W. Bush (2001-2007). Although Republicans had control of the executive branch through the first two years of Donald Trump’s Presidency, these results are not included in this paper.

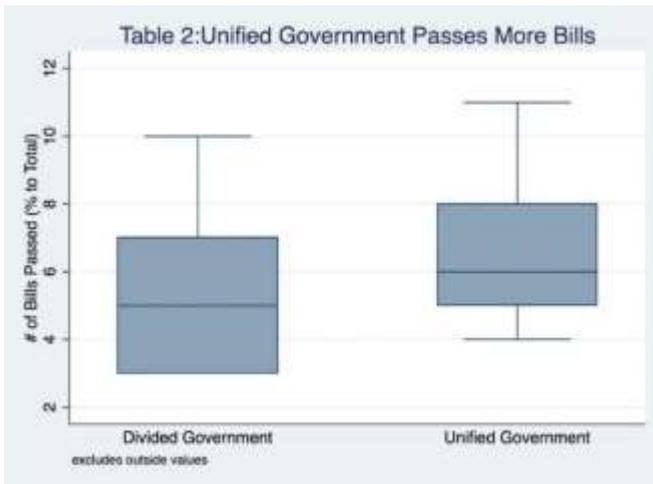
Table 1: Declining Legislative Productivity



To find the amount of legislation passed by Congress, I used the website Govtrack, which provided the number of laws that were passed, enacted, received a formal vote, failed in the legislature, or were vetoed, out of a total number of laws presented in session of Congress from 1973-2016. For my research, I wrote down the number of passed resolutions, which were laws/bills that were passed in both chambers of Congress, the number of enacted laws, and the percentages when compared to total amount of laws in that session of Congress. I recorded these numbers, along with the party identification of Presidents and House of Representatives, and used the information to create two graphs. As shown from the graph “Declining Legislative Productivity”, President Reagan had the highest percentage of enacted bills within the last 43 years, with 7% of Bills Enacted. President Clinton had the second highest percentage with 6% of bills enacted. Ultimately, this graph shows that the amount of enacted legislation has been decreasing in the federal government over the course of 43 years, and with the current situation in Washington it is very likely to continue decreasing.

From the information that I gathered to make the previous graph, I created three T-tests in Stata, to show which independent variable would have a greater effect on the passage of bills, and the number of enacted laws. The T-test “Bills passed by Unified Government”, uses dichotomous variables 0 and 1, the 0 represented divided government, while the 1 represented unified government. The results of that T-tests were then translated into the graph box titled “Unified Government Passes more Bills.”

Table 2: Unified Government Passes More Bills



As shown in the graph, the mean of the passage of bills under a divided government is “-5.2-”, while the mean of the passage of bills under unified government is around “-6.-” While this graph illustrates the fact that under unified government, more bills can be passed in the United States, the T-test conveys another interesting fact. When examining the probability, the test gave a 95% significance that the probability is greater than zero, and that under unified party control, there is an average 30% increase in the percent of bills passed. Although my quantitative research confirmed that legislative productivity in the federal government is not only decreasing, it does not explore how productivity was possible during periods of divided government.

Having established some trends in the data, I now explore how my findings relate to the general findings found in the literature

to present the qualitative research for my findings. Many of the sources directly link political gridlock to two presidencies, which are the Presidencies of Ronald Reagan (1981-1989) and Bill Clinton (1993-2001) (Brady and Volden 2006; Heffner 2005). Some of the factors that lead to political gridlock are shown to occur before the Presidential election of 1980. To highlight the progression of political gridlock in the American government, I have divided information that I have gained from my sources into Presidential terms, including a brief description of the Presidencies of Richard Nixon to Bill Clinton. Perhaps most importantly, I provide an overview of the personalities of the presidents in terms of their dealings with Congress, political views and as overall individuals (Haffner 2005). Relating this data to the statistical results may show how the personalities of Presidents can make or break political activity in the federal government.

Richard Nixon: 37th President (1969-1974), party: Republican

Even though Nixon was a Republican President and had a Democratic Congress, political gridlock was not a significant problem according to Gillon (2013). Nixon “adopted moderately progressive positions [...] favoring cooperation over confrontation” and continued some of the progressive policies within Washington created by Johnson’s Great Society. Under the median voter theorem, an event where those in power promote laws that are favored by people in the ideological center, politicians from both parties were able to vote for or against any legislation, without any problems, an example being how liberal Republicans voted for the liberal policies

of the Great Society (Gillon 2013). We will see under both Reagan and Clinton how conservative Democrats could vote for conservative taxation laws. Under the Nixon administration, many progressive laws were passed with the support of Congress, which included: Affirmative Action, increase in desegregation, and the Clean Air and Clean Water acts.

However, two events under the Nixon administration can be seen as contributing to later political gridlock in the 1980s. The first was the use of the “Southern Strategy” in the election of 1968, which was a campaign strategy that Nixon used in order to get Republican votes within the Southern States, which at the time was largely Democrat. As shown in both Brady and Volden (2006) and Abramowitz and Saunders (1998) most of the ideological shift to the “right” occurred from voters and politicians from the South. It also showed that men were most effected by the shift, as “in the late 1970s, Southern whites still identified with the Democratic Party [...] By the mid-1990s, southern whites had become more Republican than their northern counterparts” (Abramowitz and Saunders 1998:640).

The second event that occurred in the Nixon administration was the Watergate Scandal, during Nixon’s reelection of 1972, where he won a second term. During the election, Nixon had people wiretap the Democratic headquarters of the Watergate Hotel in order to gain information about the Democrats tactics for the election. However, through an investigation, authorities were able to link the events of Watergate to Nixon, which lead to the second impeachment process in American history, and to Nixon becoming the first president to

resign from office. While this event did not increase the ideological shift that will lead to political gridlock, it did show both Congress and American citizens the dangers of having too much power being abused by the President. This shows that Watergate led to an increase in checks on executive power by Congress and from the public through investigative journalism in order to prevent the President from gaining too much power. Watergate can be seen as the first step to limiting Presidential power to oversee legislative policies, and establishes an imbalance between policy making of both the President and Congress, as Presidents have to gain Congressional support in order to promote any legislation that they created.

Both events show the advantages and disadvantages of Nixon's personality in terms of his executive relationship with Congress, or with his skills as a politician. Nixon's implementation of the "Southern Strategy" demonstrates his ability to be strategic as it gained him success in winning his Presidential election. Still, a disadvantage was his "obsession with power, and had to be in control at all times" (Haffner 2005), which pushed him to abuse his executive privilege and to believing that he was above Congressional authority.

Jimmy Carter: 39th President (1977-1981), party: Democrat

Carter was the last president to have an ideologically moderate Congress, as many sources have pointed to the election of 1980 being the first national election where hard leaning conservative politicians had gained power in the federal government. The Carter administration was greatly defined by the further continuation of the

economic downturn that began under Ford, which worsened due to the stagflation crisis (Brady and Volden 2006). The stagflation crisis was the result of too much government spending in both the Vietnam War and the Great Society programs. This led to high levels of “inflation, unemployment, and recessions” for people living in the Northwestern states where the stagflation and oil crisis had led to a decline in the industrial sector of the economy (Brady and Volden 2006). It was because of the stagflation crisis being linked to the increased government spending for the Great Society. Many people, particularly in the Southern states, had low confidence for the liberal policies of the federal government as many of them felt left out from the benefits of the Great Society and that their lives were not improving under the rule of liberal ideology. The factors of the 1960s and 1970s showed the path to the ideological shift to the “right” in the 1980s, and the background to both ideological gridlock and institutional gridlock.

In terms of Carter’s personality, unlike the other presidents mentioned in the paper, Carter was not very keen in taking part in Washington’s political system. As described by Haffner (2005), Carter “found the political games of Washington unsavory, and [...] refused to play them” (Haffner 2005). This shows that Carter’s lack of political cooperation led to little successes during his presidency, and shows that the importance of an open executive personalities.

Ronald Reagan: 40th President (1981-1989), party: Republican.

Many sources used for my paper point to the election of 1980 and the Presidency of Ronald Reagan as being the main catalysts for political gridlock in the federal government. As noted by Brady and Volden (2006), many changes had occurred in the 97th Congress of 1981: first was that the Republicans had gained control of the Senate “for the first time in 26 years,” but this Republican Senate was the first to experience an ideological shift to the right. Second was that despite winning both the White House and the Senate, the Republicans did not have control of the House of Representatives, thus showing that both chambers of Congress were being occupied by both parties (Congressional gridlock).

A third change was that a shift in ideologies had occurred in both parties during the election of 1980, which Brady and Volden (2006) showed to the reader through the scores on the Americans for Democratic Action survey – a survey that is used to measure the ideological mindset of politicians. The score range was as follows: if politicians had a score of 100, then that meant they were very liberal; and if a politician had a score of 0, then that meant that they were very conservative. For Republicans, the median score in 1981 was 10, which was a great decrease from the Republican median score of 17 “during the Nixon-Ford and Carter years” (Brady and Volden 2006). For the Democrats, the median score in 1981 was 70, which was a sharp increase from the previous median score that was set “between 56 and 66” (Brady and Volden 2006). The shifts in the ideologies of both Republican and Democrat legislators represented the overall

cultural shifts that were occurring in different sections of the United States. As legislators shifted to the “right,” it reflected the shift to the “right” that was occurring in the Southern states, while legislators that shifted to the “left” reflected the shift to the “left” of the Northeastern states (Brady and Volden 2006).

Despite having a Democratic House of Representatives, Reagan was able to form a coalition in the House between Congressional Republicans and Conservative Democrats. Brady and Volden (2006) showed that many of the Conservative Democrats or “Reagan Democrats” came from the Southern states, and were Reagan’s major tool in order to prevent gridlock within Congress. In the Senate, out of the 45 Democratic Senators, 20 Senators had made the shift to the “left” and became more liberal, while 11 Senators had made the shift to the “right” and became conservative. Through the Republican Senate, and the coalition in the House, Reagan was able to pass many taxation/government spending laws, which included a “\$50 billion in spending cuts” on programs like social security, food stamps, urban development, an increase in defense spending, and policies that decreased government control over the economy (neo-liberalism) (Brady and Volden 2006).

The rest of the Reagan administration was shown to shift back and forth between him and the Democrats in Congress, which was a result of Reagan’s personality. Reagan was described as being a great communicator, calm, and having a good sense of humor, which at times helped him connect to the Democrats of Congress. It was through these aspects of his personality that made Reagan “well

liked in Washington” (Haffner 2005) by people in both political parties. Brady and Volden (2006) note that while the Republicans were able to hold control of the Senate in the 98th Congress, there was a shift to the left in terms of the House as the Republicans had lost 26 seats to the Democrats. The loss of those seats came from the Southern states, border states in the Midwest, and in the Northeast. Altogether this showed that the nation made a shift to the left. The relationship between Reagan and the Democratic Congress had established a symbiotic balance, as Democrats who supported Reagan were able to retain their seats in Congress. As when Reagan “supported shifts back to the left, Congress was able to move policy back toward the median members” when Reagan raised opposition to the shifts that would lead to gridlock in the government (Brady and Volden 2006).

Haffner (2005) stated that second terms for most presidents are “traditionally much tougher than the first.” Brady and Volden (2006) convey that this statement applied to Reagan as well, since in 1986 the Democrats were able to regain control of the Senate, and thus had regained control of Congress. This led to a divided government for Reagan in the last three years of his presidency, as the Democratic Congress prevented Reagan from proposing or passing any conservative taxation acts, thus putting an end to Reagan’s tax revolution. The takeover showed that despite Reagan’s open and positive personality, his relationship with Congress declined in his second term. This division between a Republican presidency and a Democratic Congress continued during the presidency of George

H.W. Bush, which Brady and Volden (2006) stated was the first time that the “important sense divided government became an issue,” as his conservative policies could not get passed the heightened liberal ideology of the Democratic House and Senate.

Bill Clinton: 42nd President (1993-2001), party: Democrat.

While the Presidency of Ronald Reagan can be seen as the start of political gridlock in the modern American political climate, the presidency of Bill Clinton can be seen as the both the continuation and the final “cementing” of political gridlock. Bill Clinton was the first Democratic president that had to deal with a conservative Republican Congress, as he only had two years of a Democratic government from 1993-1995, then the Democrats had lost control of both the House and the Senate after the mid-term election of 1994 (Brady and Volden 2006). It was during the Clinton administration that the full extent of the shifts in voter ideologies occur, showing how the incumbency advantage could be used to keep politicians of either the far left or right of the political spectrum in Congress, and how polarized politics had increased drastically in the federal government.

In terms of his overall presidency, Clinton, despite trying to maintain the mindset of being a median Democrat, enacted taxation policies that showed to both members of his party, to Congress, and to the public that he was becoming more liberal. Some of these policies included: increased taxes for the wealthy sector, cuts on defense spending, and increase spending on social programs (Brady

and Volden 2006). The most famous piece of legislation that Clinton had created was NAFTA (North American Free Trade Agreement), which established trading arrangements between the United States, Mexico, and Canada, and was approved by both Democrats and Republicans in Congress. However, after the mid-term election of 1994, Clinton found himself battling a conservative Republican Congress for the remaining six years of his presidency. Even though Congress was able to disapprove of certain policies (the Kyoto Protocol), and nearly impeached him, Clinton was able to pass a few taxation policies within his first and second term, and maintain his popularity with the people (Brady and Volden 2006).

Most actions taken by Clinton during his presidency reflected his personality and approach to political issues, as he is described as being a clever strategist. An example of this is how Clinton was “so interested in different viewpoints” (Panetta and Haffner 2005) that he used public opinion polls to make compromises. Another example includes one of Clinton’s greatest victories during his presidency: his ability to spin the government shut down of 1996 on Newt Gingrich and his conservative allies, thus getting the Republican Congress to compromise with his policies.

Abramowitz and Saunders (1998:635) points out that from 1980-1992 the differences between the “Democratic and Republican identifiers in the electorate declined from 19 points [...] to 10 points,” which shows that the number of median voters in the nation were decreasing as people began to follow the ideologies of their parties. Abramowitz and Saunders (1998) and Brady and Volden (2006)

noted that during the Clinton administration, younger conservative Republicans that came from the Southern states were replacing many of the older moderate Republican members in Congress. This shows that by the time of the Clinton presidency, the South had made its full turn from Democratic supporters to Republican supporters. The process of older-moderate Republicans being replaced by younger-conservative Republicans was even being replicated in terms of voters. Abramowitz and Saunders (1998) note that through intergenerational shifts in political ideology, many young voters in both parties had voted for the opposing party of their parents, but the shift to the Republican party/conservative ideals was larger than the shift to the Democrats/liberal ideals.

Cox and Morgenstern (1993) measured the rates of incumbency advantages among 24 states, from 1970-1986. The results of this study showed that politicians who are the incumbents of any election have the advantages of “advertising and personal service.” While this was measuring incumbency among state and local governments, Cox and Morgenstern (1993) did compare state incumbency rates to the incumbency rates of national elections. The results found that in national elections, incumbents have the ability to spend more money on advertising and campaign than incumbents in state elections.

In contrast, Brady and Volden (2006), did show that Congressmen from one party that had incumbency advantage lost seats to the challenger from the opposing party. This is shown by the results of the 1994 mid-term election, where conservative Democrats

that had supported Clinton's liberal policies, had lost their seats to conservative Republicans. The losses of those seats show that incumbency advantages are dependent on the ideology of the incumbent, the challenger, and the voters. If the incumbency advantage had worked in every election, then there would not have been a transition in power from a Democratic Congress to a Republican Congress in the 1994 mid-term election. It is through the increase of Republican support and the incumbency advantage that conservative Republicans, such as Newt Gingrich, were able to maintain seats in Congress, and keep those positions in the control of conservative Republicans, instead of losing them to moderate Republicans, conservative or liberal Democrats from 1995-2007.

The last effect that the Clinton administration had on the process of political gridlock in the federal government was that due to both Democrats and Republicans shifting to the far end of their respective ideologies, the number of median voters and moderates in the federal government greatly decreased. As shown by Thurber and Yoshinaka (2015) and Saeki (2009), after the Clinton administration, the middle ground for Congressmen in both parties began to drift apart. Both sources show that it became increasingly difficult for both parties to show support for any piece of legislation, and how the success of a president is linked to Congress.

Saeki (2009:592) introduces the concept of a "winset," which are veto players within Congress from both parties that vote "unanimously" on a bill for passage. Within her research, Saeki (2009) displays graphs that measure the continuing polarizations from

the 83rd-106th Congress, and the points of intersection within each graph represents the “winset.” From the 97th Congress graph to the 106th Congress graph, the “winset” is constantly decreasing in size showing a decline in veto players in Congress finding a middle ground on policies.

The further division is shown by Thurber and Yoshinaka (2015), who focus on the political gridlock during the Presidencies of George W. Bush and Barack Obama. Bond, Fleisher, and Cohen (2015) show how polarized governments mainly effect the policies of minority Presidents (the presidents of the party that is not in control of Congress). A graph that measures the success rate of both minority and majority Presidents showed that within a polarized government, majority Presidents have a higher success rate than minority Presidents, as the difference between both rates are about “33%” (Bond et al 2015:145). The evidence from Bond, Fleisher, and Cohen (2015) when compared with Thurber and Yoshinaka (2015) shows why both President Bush and President Obama had a hard time enacting policy in the last two years of their presidencies, as in both cases the opposing party had gained full control of Congress, and with the embrace of far “left” and “right” ideals, made it impossible for either President to pass legislation.

Solutions to Gridlock

The current literature suggests some possible ways to prevent political gridlock in the federal government including requiring amendments to the Constitution, reforming the voting

system, and diversifying Congress. Both Thurber and Yoshinaka (2015) and Callander and Krehbiel (2014) have shown that Congress has different methods to prevent political gridlock, such as the 60-Vote Senate, which is used as a way to combat filibusters in Congress, and the use of different types of delegations in order to get policies through various stages of gridlock.

At the beginning of my research, I thought that the solution to political gridlock could be increasing presidential power over creating and passing legislation. I observed the power of presidents in both Brazil and Mexico, as both countries have been very active and effective executive branches. However, I found that these executive powers, with regards to decree power, a unilateral bill initiation rights, and line-item vetoes, gave presidents substantial ability to pass laws in spite of an opposition-controlled legislature. In order for the President of the United States to gain more legislative power, the Constitution would have to be amended and approved by 3/4ths of the states. I saw this as a problem, because public opinion in America would likely be averse to the idea of giving the President more power as it would decrease the system of checks and balances that have been established since 1787. Another factor I considered was the large possibility that a move to ratify an amendment to grant the President more power in legislation would not pass in Congress before being sent to the 50 states for approval.

The last set of sources within this paper offer suggestions to solve political gridlock in the federal government. Some of the methods that are included in this section are increasing the powers of

the president, maintaining presidential elections without the use of the Electoral College, and diversifying Congress. The sources used are Mainwaring and Shugart (1997), Bennett (2006), and Lee (2014).

Mainwaring and Shugart (1997) examine the Presidencies of Brazil and Mexico, and talk about how the office of the President has more power in terms of policymaking. An example of this includes how presidents in Brazil can implement policies through the use of provisional measures, and can make Presidential decrees that can go into effect for 30 days, while Congress decides whether or not to reject these policies or amend them. For Mexico, Mainwaring and Shugart (1997:225) show how the President can “reform the constitution by proposing amendments, which are frequently accepted by Congress with only cosmetic changes,” and can introduce bills directly without going through Congress. However, Presidents in both Brazil and Mexico are given such power over policy making through constitutional powers granted to them – “Article 62” for the Brazilian constitution and “Article 71” for the Mexican constitution. This shows that changes to the US Constitution will have to be made in order to give the President more power in the federal government (Mainwaring and Shugart 1997). However, it is highly unlikely that Americans would support a constitutional amendment that would increase the powers of the executive branch due to fear of corruption and abuse of power. As in both Brazil and Mexico, the United States has witnessed their respective Presidents acting out of their own self interests.

Bennett (2006) presents the reader with a view into how a Presidential election would occur if it mainly used the popular votes without the need of a Constitutional amendment to make the popular vote more valued than electoral votes. Bennett (2006) used the example of elections for the US Senate and the 17th amendment, which allows for the “direct election of Senators,” as the leading provisions to show how popular votes can be the better deciding factor for choosing the winner of a Presidential election. Bennett (2006) points out that while states with the highest number of electoral votes (California and Texas) might be reluctant to give up their voting powers, states with the lowest electoral votes would be open to shifting from electoral votes to popular votes. As the shift would lead to a decrease in “the chances of a disparity between the electoral college and popular votes” (Bennett 2006). Through the use of a Presidential election maintained by the popular vote, the imbalances of the Electoral College that are mentioned by Bennett (2006) and Longley and Peirce (1996) would be solved and allow for an increase in voter turnout from various political ideologies.

The last source provided by Lee (2014) focuses on the introduction of women into the political climate of the United States federal government. One of the most interesting facts learned from this documentary is how women (from both parties) in Congress were able to get their male counterparts from the Democratic and Republican Parties to come together in order to end the government shut down in 2013 (Lee 2014). This documentary made me think that one solution to political gridlock is to diversify Congress. As it was

through the efforts of all of the women members of Congress, who were able to work with each other despite being either Democrat or Republican, that got the federal government back into policy making – imagine what would happen if other groups of people were to gain a seat in Congress.

Further evidence about the effectiveness of women with government power is shown by the UN Women website (2019), which states that in parliamentary systems “women’s leadership in political decision-making processes improves them [...] by working across party lines [...] in the most combative environments.” Even though this is focusing on parliamentary systems, this further reinforces the successes and need for more women in Congress. As most parliamentary systems are a democracy it shows that in any form of democratic government, women in political positions are the key to improving policy making by promoting a unified force in a divided government. My approach in figuring out methods to resolve political gridlock will be discussed in the conclusion section.

Conclusion

From these sources, I have found that the causes of extreme political gridlock in the United States government are linked to five factors. The first is critical events in the United States, which lead to the second factor of ideological shifts from both politicians and voters. This is followed by the third factor of polarization in the federal government that can be influenced by the fourth factor of imbalances in the voting system. The last factor, which is the most important

factor in my opinion, is the personal relationship between the President and Congress. While my research does not present a clear solution for political gridlock in the United States, it does present a few tactics that can be used to counter some of the causes and shows that the personalities of Presidents can enable the government to function, whether it is unified or not. In terms of the voting system Adams (1996), pointed out that use of multi-member districts does lead to increase of political ideological representation, stating that the use multi-member districts only works in state elections/governments. This is because in national elections, it would lead to “increasing the number of seats [which] tends to increase the number of parties” (Adams 1996). However, the Brazilian government uses Multi-member districts and has a politically diverse Congress, as it is made out of different political parties, and when it comes to legislation the Brazilian Congress is not politically polarized to one set ideology.

I think the use of Multi-member districts should be implemented into the national elections when choosing members for the House of Representatives, as it primarily represents the population of each state, and would present more political representation than the current system of gerrymandering. The way it would work is that any candidate from any party within every state will be able to gain a seat in Congress, even if they are a minority party or a third party. Take California as an example: under a Multi-member district system, a majority of its seats in the House of Representatives would be filled with Democrats, but there will be seats available to be filled by Republicans that work within the state, and members of third parties,

such as the Green Party. If Congress had an ideologically diverse House of Representatives, then politicians in the House would be able to better represent the beliefs of the voters, and would have to work together to enact bills that can better help voters of all ideologies within the country, instead of focusing on the ideologies of Democrats or Republicans.

Another method of diversifying Congress would be through gender and ethnic quotas, as Lee (2014) showed how women members of Congress could put aside their party identification to work together in ending the government shutdown of 2013. It shows how American politicians who are outside the standard gender-ethnic background of Congress are capable of acting outside of party politics, and it is through this act of acting out of party politics that creates a unified, or at least productive government. In a Washington Post article, Vanita Gupa, the President and CEO of the leadership conference on Civil and Human Rights, stated that ““our federal government functions best when it is equipped with qualified individuals who meaningfully reflect and represent the country they serve”” (Davidson 2018). This shows that Congress needs more politicians that come from various ethnic backgrounds so they can have a better understanding of what multicultural citizens in the nation need in terms of policies since they know what challenges their culture faces.

While I applied the use of Multi-member districts to the House of Representatives, the use of adding women or people of color to Congress would be applied to the Senate. The structure of the

Senate allows for an increase in diversity, as currently there are 35 non-white male Senators (US Senate website) – nearly half of the Senate – which could be achieved sooner than diversifying half of the House. In terms of gender, one Senator should be a man and the other a woman in each state, while anyone of different ethnicity should be free to run for the position of Senator. However, this idea cannot be fulfilled if the Senate and House are plagued with a lack of term limits, the use of incumbency advantage, and years of discrimination that has made it difficult for non-white men to gain positions of power in the government.

In terms of diversifying Congress, the establishment of Multi-member districts for the House, and providing a set gender/ethnicity quota for the Senate would require an amendment to the Constitution, which I think would have more support than an amendment to increase powers of the President. With a diverse Congress, more people of different ideologies and ethnicities would participate more in national elections, thus increasing voter turnout in elections and leading to a decrease in polarization and gridlock within both Congress and the federal government. In relation to my quantitative research, the more diversified Congress is, the less polarized it becomes, which means a more unified legislation could lead to a 30% average increase in laws being passed becoming a reality. From this diverse Congress, more bills can be passed and enacted, which would lead to an increase in legislative productivity as opposed to the current decline that we are facing.

Finally, as shown by Haffner (2005), a key component of either progress or stalemate in the federal government are the personalities of the Presidents. Presidents Nixon and Carter showed that by having either a negative personality trait (Nixon's want for control) or choosing to be closed off from most of the political environment (Carter) means political inaction will be prevalent. Presidents Reagan and Clinton show that by having a positive and open personality allows Presidents of the opposing political party to either build good relations with Congressmen from the opposing political party or can put them into a position to compromise on their terms. While the personalities of the president are a factor that cannot be countered, through the Electoral College, American citizens can decide what kind of person to put into the White House. One method to ensure for politicians who Americans want to receive the presidency is to reform the Electoral College. Tewfik (2013) shows a petition was written from a Californian citizen named Hal Nickle that if put on the California ballot would cancel out the "winner-take-all" system of the Electoral College within that state.

This proposal which is called "The Make Our Vote Count Act" would greatly appropriate electoral votes to the popular votes within the state, thus dividing California's 55 electoral votes among the different presidential candidates, instead of all 55 votes going to the dominate political party in the state, which in current day society would be the Democratic Party (Tewfik 2013). The article provides an example of how this proposal would work if it had been enacted in the 2012 Presidential election; for example, President Obama would

have gotten 34 electoral votes, Republican challenger Mitt Romney would have gotten 20 electoral votes, and third-party candidate Gary Johnson would have gotten 1 electoral vote. If California and other states were to adopt this proposal or something similar to it, this could lead to the creation of an updated Electoral College as it would give equal representation within the Electoral College and would decrease public disinterest in voting in Presidential elections because citizens would feel they are being more fairly represented.

While all of the previous solutions to gridlock are steps that can be enacted within the federal government in order to correct itself, if the federal government is incapable of fixing itself then an outside force is necessary to bring about these changes. I think that the use of social movements that are aimed at bringing institutional changes to the federal government along with widespread social change would be an alternative should the government be too divided or inactive to correct itself. Kesselman et al. (2012:626) defines social movements as being “large-scale grass-roots action that demands reforms of existing social practices and government policies.” The most common social movements include Black Lives Mater, #MeToo, Time’s Up, and most recently the Anti-Trump and Pro-Trump protests that were created during the 2016 Presidential election. The most critical components of social movements are a mobilized network, moral authority, collective action, flexible tactics, established norms, and expertise.

The need for a new social movement would arise if there is a continuation of a decline in policy making. As shown in the graph

“Decline of Legislative Productivity,” by 2016 the percentage of enacted laws was already as low as “3%” and it is most likely that it has maintained either a steady rate within the low percentages or at the worst-case scenario experience another decline. As a result of fewer laws being passed to address certain issues, unrest in the American public is likely to increase, and it would be from this unrest that people will seek changes to the American government in order to get it to become more active in policy making, and ultimately improving their lives.

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Following the Newark, NJ Drinking Water Lead Crisis

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Abstract: In the summer of 2018, after it was revealed that there were dangerous levels of lead in the drinking water in Newark, New Jersey, the Natural Resources Defense Council and the New Jersey Education Workers Caucus filed a lawsuit against the City of Newark. They claimed the city did not comply with statutes in the Safe Drinking Water Act, Lead and Copper Rule, and New Jersey's Open Public Records Act. This case follows the nationally recognized case in Flint, MI, and both cases present undertones of systemic racism through the inaction of local governments. While the jury is still out on whether the city of Newark will be held responsible, this paper analyzes the case, relevant legislation and stakeholders' strategies.

Keywords: Environmental Justice, Clean Water Act, Open Public Records Act, Natural Resources Defense Council, Newark, New Jersey

Introduction

In the summer of 2018, after it was revealed that there were dangerous levels of lead in the drinking water in Newark, New Jersey, the Natural Resources Defense Council (NRDC) and the New Jersey Education Workers Caucus filed a lawsuit against the City of Newark. They claimed the city did not comply with statutes in the Safe Drinking Water Act, Lead and Copper Rule, and New Jersey's Open Public Records Act. This lawsuit follows years of a similar battle in Flint, MI that became a nationally publicized case where high levels of lead were found in the city after a switch from Detroit's main water system to the Flint River. These cases both present undertones of systemic racism in the inaction by local government and the continued denial of a problem despite resident complaints and state water sampling results suggesting otherwise. This paper analyzes the Newark lead water case, legislation relevant to the case, and its stakeholders and their strategies to further understand the implications of what this court case decision could mean for similar problems in the future.

Traces of lead in drinking water are extremely dangerous for children and pregnant women, leading to developmental issues and birth defects. Even healthy adults can suffer from various health ailments due to lead exposure including high blood pressure, kidney failure, infertility, cardiovascular problems, or cognitive dysfunction. This fact alone begs the question why the City of Newark even tried to deny lead was a problem in their citizens' drinking water instead of investigating further. Water samples from the city showed 20% of

households contained lead levels above the 15 parts per billion (ppb) federal action level threshold. Other factors that come into play in the case are divisions of responsibility, institutional discrimination, and the influence of the ongoing Flint, Michigan lead case in 2014.

Background

This issue centers around a few important pieces of US legislation. The Clean Water Act protects public health and requires certain qualifications for waterways managed by the Environmental Protection Agency (EPA). It began as the Federal Water Pollution Control Act of 1948, which was the first major law in the US to address water pollution. It provided funds for state and local governments to monitor water quality in some communities (Environmental Works 2018). In 1962, Rachel Carson wrote her famous book, *Silent Spring*, which sparked the modern environmental movement, increased public concern about the environment, and instilled a desire to protect our damaged and dwindling natural resources. The Environmental Protection Agency was formed in 1970, taking on the responsibility of the Federal Water Pollution Control Act of 1948. From 1968 to 1970, the Department of Health, Education, and Welfare's Bureau of Water Hygiene reported 30% of drinking water samples in the US had chemicals exceeding recommended Public Health Service limits (Environmental Works 2018). DDT was present in 584 of 590 fish samples, 87% of swordfish showed unsafe levels of mercury, and record numbers of fish died, accounting for millions of dollars in losses to the fishing industry (Environmental

Works 2018). There was clearly an urgent need for more regulations on the previously unchecked pollution of waterways since two-thirds of the nation's waters had become unsafe for fishing or swimming (PBS 2002). While unsafe water was a huge public health issue, there are also undertones of market-based allocation with the influence of the fishing industry on the decisions to regulate water pollution. Without the huge loss of revenue from the contaminated fish, the Clean Water Act may have taken longer to emerge. Finally, in 1972 the Clean Water Act was passed with the goal to “restore and maintain the chemical, physical, and biological integrity of our nation’s waters” and for “zero discharge of pollutants into navigable waters by 1985, and fishable and swimmable waters by 1983” (Clean Water Act 2018). The act requires permits to pollute from a point source, implements standards for industry wastewater, and developed national water quality criteria for pollutants in surface waters (Clean Water Act 2018). While the issue in Newark was due to traces of lead in drinking water and not necessarily pollutants, there could have been corrosive pollutants in the water that caused the lead to flake off the old pipelines in older homes and schools. The lack of immediate action by the City of Newark in response to dangerously high lead levels weakens the influence of this historic act.

Another piece of legislation important to this case is the Safe Drinking Water Act of 1974 (SDWA). This law focuses specifically on the protection of drinking water in America and is more directly a protection of public health than anything else, even though there was still heavy push back from oil lobbyists because of the increased

environmental regulations (Weinmeyer et al. 2017). The SDWA requires the EPA to set standards for and oversee all public water systems' drinking water quality, whether they are privately or publicly owned, and protects the water from natural or man-made contaminants found in drinking water (Weinmeyer et al. 2017). There are over 151,000 public water systems in the US, classified by the amount of people they serve. However, some schools, hospitals or office buildings may have their own non-community non-transient water systems that are still under jurisdiction of the SDWA (Public Water Systems 2018). Weinmeyer, Norling, Kawarski, and Higgins (2017) suggest that while the law has good intentions, its implementation and enforcement are severely flawed because once the federal regulations are set, the states must follow through to fix the problem if: the contaminants might have adverse health effects, are likely to be found in public drinking water systems, or will reduce public health overall. Difficulties arise because of the massive amount of public water systems - excluding private homeowners' wells - that have to account for 83 specific contaminants and each contaminants' specific limits. Because small service providers and private well owners are not under jurisdiction of the SDWA, many water systems are not well regulated in the US. Inadequate funding to the SDWA poses a problem since it is estimated that one trillion dollars is needed to update drinking water systems in the US but only \$32 billion has been allocated in the past 18 years (Weinmeyer et al. 2017). Further budget cuts to the EPA in recent years have reduced funds to specific programs to help states fix water infrastructure like the WPSS (EPA

Office of Water 2017). While larger water systems can bear the cost burden of updating their waterlines, many smaller systems cannot keep up, delaying state action on installing new treatment devices, and making improvements. This has been the main cause of high lead levels in various cities across the country, Newark included. Additionally, with further scientific research comes more contaminants listed as dangerous and reveal health risks of lower concentrations of currently listed contaminants (Weinmeyer et al. 2017). New Jersey specifically has access to grants through the Drinking Water State Revolving Fund, operator contracts, and state ordered consolidations, which show a collaborative effort to supply funds for the state (EPA Office of Water 2017). The state is required to test drinking water, and in Newark specifically, the rule recently changed from 50 samples over three years to 100 samples over a six-month period (Yi 2018).

The Lead and Copper Rule (LCR) issued in 1991 set a required “action level” for lead at 15 parts per billion, even though no level of lead in a human’s blood stream is safe (Jennings and Duncan 2017). Lead-contaminated water is extremely dangerous for children and pregnant women, with high risk of permanent neurological damage or disability. Even trace amounts of lead in the blood of otherwise healthy adults can cause fertility issues, cardiovascular and kidney problems, cognitive dysfunction, and high blood pressure (Anslem 2018; Jennings and Duncan 2017). The protocols set by the LCR were designed to evaluate the effectiveness of water treatments, and can miss important fluctuations which may increase the amount

of human exposure to lead (Jennings and Duncan 2017). Contaminants that include lead are mainly inorganic chemicals, arsenic, asbestos, chromium, copper, fluoride, mercury, nitrate and radionuclides, as well as naturally occurring chemicals, microorganisms and water turbidity (Jennings and Duncan 2017). Corrosion control treatments to protect old pipes are the main mitigation strategy when lead is found in drinking water since these contaminants cause old pipes to flake lead off into the water stream. This current strategy was developed in 1991 and has not since been amended despite lead problems across the country becoming more of a problem in recent years, such as the case of Flint, Michigan.

The lead problem in Flint is very similar to the Newark case, as the Natural Resources Defense Council is leading the lawsuit on both cases. The Natural Resources Defense Council was established in 1970 by law students and attorneys during the environmental movement. They are an international non-profit NGO with the goal of “ensuring the rights of all people to clean air, clean water, healthy communities and the wild” (NDRC 2018). They have over 3 million members and employ 600 scientists, lawyers, and policy advocates to fight environmental issues in court and in Congress (NDRC 2018).

The Flint lead problem began back in 2011 when the State of Michigan took over Flint’s finances to combat an expected \$25 million budget deficit following decades of a declining economy due to their General Motors plant downsizing in the 1980’s (CNN 2018). To reduce the water fund shortage, a pipe switch from Detroit to Lake Huron was proposed but the city had to take water from the Flint River

while it was under construction starting in 2014 (CNN 2018). Residents soon noticed the water tasted and smelled strange, and after tests by the EPA and Virginia Tech, it was discovered that there were dangerously high levels of lead in almost half of Flint's households. A class-action lawsuit was filed by residents of Flint for lack of proper anti-corrosion treatment, a violation of the SWDA and the LCR (CNN 2018; Weinmeyer et al. 2017; Jennings and Duncan 2017). One resident, Lee-Ann Walters' tap water contained lead levels of 104 ppb, almost seven times the EPA's lead threshold, but a second test showed levels as high as 397 ppb after the switch (CNN 2018). The mayor of Flint and other community leaders denied that the lead was even an issue telling residents to "just relax," with the mayor drinking a cup of tap water on WNEM news (WNEM Newsroom 2015). In 2015, the Flint City Council members voted to switch back to Detroit as a water source, but the state-appointed emergency manager claimed the costs were too high for the switch, demonstrating how the government valued costs above the health of its citizens (CNN 2018). A state of emergency was declared in early 2016 allowing FEMA to intervene and the National Guard was brought in to distribute bottled water, almost two years after the initial water testing (CNN 2018). In 2016 the NRDC filed a lawsuit against the state for violating the Safe Water Drinking Act in its slow response to the issue (CNN 2018). The result of several lawsuits was a \$97 million settlement for Michigan to agree to replace all lead water lines, however involuntary manslaughter charges were also brought against state officials for the deaths of at least 12 people during the crisis (CNN 2018). Since then, it was

deemed that the water supply was restored to normal and Flint recently ended the free bottled water program in 2018 (Chavez 2018).

However, there were much deeper implications behind this case including institutional, structural, and systemic racism against the predominantly black, and poor population of Flint, requiring an environmental justice lens (Egan 2017). Housing, employment, and education discrimination led to the dispersal of Flint's current population demographics, and gave way to an implicit bias against the residents' complaints by the state. Flint has a population of 98,918 - of which 54% is black - a 41.9% poverty rate, median household income of \$25,650 and median property value of \$30,000 (Data USA, Flint 2018).

This environmental justice lens can also be applied to the Newark case. Newark has a much larger population of 218,770 people and a poverty rate of 28.2% but a median household income of only \$31,100 (Data USA, Newark 2018). Additionally, Newark is 48.7% black and 34.4% Hispanic (Data USA, Newark 2018). Newark has high property values because of its proximity to New York City, however this creates a huge gap between those who work in the city and make more money, and the residents below the poverty line. These residents' concerns about the lead in their water were largely ignored in the beginning, much like those in Flint. It makes one wonder if the same lead levels were found in richer, white communities what the response would be.

One more important piece of legislation to consider for this case is New Jersey's Open Public Records Act, which the Natural

Resources Defense Council claims the city also violated (Kelly and Nunez 2018). The act requires that all government records be available unless they violate a citizen's personal information such as hospital records, criminal investigation documents, victim's records, or court orders (NJ Open Public Records Act 2018). However, while the act states that agencies have a right to prohibit access to information regarding ongoing cases, they cannot do so before the investigation officially begins if information was already publicly accessible (NJ Open Public Records Act 2018). The City of Newark repeatedly denied there was a lead problem and denied citizens' public records requests of water sampling results for their homes (Kelly and Nunez, 2018).

Stakeholders, Arguments, & Strategies

The main stakeholders in this case are Newark City residents, city officials, the Natural Resources Defense Council, and the New Jersey Education Workers Caucus. Water testing in Newark is done by the city's Water and Sewage Department. The department is now required to test 100 samples every 6 months, but there are no regulations about testing every neighborhood (Imperiale and Wood 2018). Newark is predominately older homes and despite the threat they face having lead service lines, many households did not receive testing (Figure 1, Appendix A). It was reported in 2017 that Newark has some of the highest recorded lead levels for a large water system in the entire nation (Kelly and Nunez 2018). Newark has consistently reported the highest levels of childhood blood lead of any

municipality in the state, and 22,100 homes in Newark have known lead service lines, meaning those lines are more likely to leech lead into their water (Kelly and Nunez 2018; New Jersey Department of Health 2016). The federal threshold for lead levels in drinking water is 15 ppb, but 20% of homes in Newark exceed this limit with 10% reporting lead levels over 26 ppb (Kelly and Nunez 2018). A recent test in 2018 contained tap samples over 182 ppb – more than 12 times the federal action level – with 30 school water samples in Newark containing traces of lead (Kelly and Nunez 2018). The New Jersey Department of Environmental Protection issued two non-compliance notices to the City of Newark in July 2017 and January 2018, but despite pressure from the state, the city still did nothing to remedy the situation at the time (Kelly and Nunez 2018).

The health risks from lead contamination are extremely dangerous. For this to occur in a community composed of more than 83% people of color and 28.2% below the (already underestimated) national poverty line, the additional health burdens these faulty lines put on the community becomes an environmental justice issue. Low-income communities of color disproportionately face negative health exposure compared to their wealthier, white counterparts (Kelly and Nunez 2018). “Access to safe drinking water is particularly important in low-income communities of color where residents often face multiple sources of exposure and stressors on their health from environmental burdens,” said Sara Imperiale (2018), an NRDC Environmental Justice attorney during an interview. The EPA has since contributed \$75 million in funds to replace old lead service lines,

with a maximum cost of \$1,000 to homeowners, however many people are not able to afford that (Carter 2018).

The position of Newark's residents relies heavily on state-based science as that is where all the data regulations regarding drinking water originates. Laws established during the environmental movement like the Clean Water Act of 1972 and the Safe Drinking Water Act of 1974 were put in place to protect people from public health concerns and took into consideration scientific evidence of problems through identification of harmful contaminants. Their position also reflects liberal pluralism – a collaborative approach to local government - in their attendance of city hall meetings to voice their concerns, and inclusion of other perspectives such as the NDRC to assist them in the legal battle (Carter 2018). A resident of Newark attended one of those meetings to learn how to use her lead water filter. “It made me feel like the city actually gave a crap, after them denying the whole thing all summer. It was so up in the air for a while but at least now we know what’s going on” (Adams 2018).

When the Natural Resources Defense Council caught wind of the situation in Newark, they filed a lawsuit along with the New Jersey Education Workers Caucus against the city of Newark on June 26, 2018 for non-compliance with the Safe Drinking Water Act, the Lead and Copper Rule, and the Open Public Records Act (Anselm 2018). They sued the Newark city officials as well as the NJ Department of Environmental Protection for the slow responses to the issue and lack of mitigation strategies. Newark was supposed to be fixing the presented lead problem through anti-corrosive treatment,

distribution of water filters and alternative water sources to affected homes, replacing old lead pipelines, and notifying the public. The lawsuit itself has largely been used to bring the issue to light and further inform the public. The city's failure to implement these strategies and comply with federal requirements puts them at risk of losing this lawsuit and may face criminal charges or pay out a settlement, much like Flint in 2017 (CNN 2018). A powerful strategy employed by the NRDC was comparing it to Flint, Michigan (Newark City Communications 2018). The high-profile case caught national attention in 2014 and 2015 with videos and news stories featuring sick children, brown water in containers from local taps, and long lines for access to safe drinking water. This comparison is an effective tool because demographics in Newark and Flint are fairly similar, hosting a population of predominantly poorer people of color, and convincing residents to expect a similar lack of concern and action seen in Flint, in their own situation. This strategy is arguably the most impactful because it incites fear in the community and generates media buzz that brings attention to the issue and puts pressure on city officials.

The NRDC relies on state-based science as well, with their employment of over 600 scientists and lawyers throughout the organization working to provide means for communities to fight for their rights to clean air, water, and land. Their collaboration with community members and the interdisciplinary crossovers between science and law also reflects the philosophy of liberal pluralism. Both of these philosophies aim to benefit the residents, whether it be in the form of public health in state-based science or making sure their voice

is heard. Underprivileged communities face higher health risks due to environmental stressors. Their concerns are often overlooked as well, creating areas of our country that are experiencing severe environmental struggles with no means of fixing them. Liberal pluralism works to combat this disconnect between the people and their governments by promoting collaboration and offering spaces for community members to voice their concerns.

The initial strategy of the City of Newark, much like Flint, was to deny there was a problem with the drinking water. Andrea Adebowale, the city's director of Water and Sewer Utilities released a statement following the lawsuit on June 26th claiming the accusations that Newark residents were suffering from dangerous levels of lead were "absolutely and outrageously false" (Newark City Communications 2018). The statement also specified that even though they owned the water mains, service lines that connect water supplies to homes were not under their jurisdiction, leaving the replacement responsibility to the homeowners (Newark City Communications 2018). They also claimed when the Watershed Conservation and Development Corporation – the water service responsible for water treatment of the city - went bankrupt, "very few documents were turned over to us [...] NRDC requested reports that we simply do not have" (Newark City Communications 2018). When contacted, Andrea Adebowale's secretary declined to make a statement, only saying "we're doing everything we can about the situation" (Newark City Communications 2018).

In late October, a significant change in the case occurred. It was discovered by outside experts that lead was not leeching in through the service lines but that the city's water treatment plant had malfunctioned, and the anti-corrosive chemicals were no longer adhering to the pipes (Yi 2018). This revelation changed the course of Newark's mitigation strategies. At first, they were facing a \$60 million, 8-year process to replace all lead service lines in the city and assist homeowners with costs (Yi 2018). Now the city has to do damage control and insist that they were unaware of the true underlying issue. They began community outreach and education programs to show residents how to install lead filters for the 3- to 8-month period it would take the treatment plant to fully flush out the old water (Carter 2018). The city is also going door to door handing out lead filters to the most at-risk households and providing tools to determine if your house has lead service lines (Yi 2018). One resident of Newark City stated, "I was put at ease when [the mayor] said 'This is not Flint,'" (Carter 2018). The city's strategy previously relied heavily on state-based science when they insisted that the lead was coming from the service lines, not the main line and therefore did not violate the Safe Drinking Water Act or the Lead and Copper Rule. Their community outreach and city hall sessions show influences of liberal pluralism as well. With the new discovery, the City of Newark could be held liable for violating these statutes by not having sufficient upkeep of their water treatment plant.

Conclusion

This case raises many important points about responsibility of action, discriminatory influence, and the power of previous cases on current ones. As shown in the Newark case, the division of responsibility in the Clean Water and Safe Drinking Water Acts presents difficulties between state and local governments. Even after the DEP issued two non-compliance warnings to the City of Newark, they still did nothing to remedy the situation. This lack of enforcement creates a gap between the levels of government, creating significant problems when the localities are not complying with federal laws.

The discriminatory bias shown in both the Flint and Newark cases sheds light on a larger issue in the United States as a whole. Poorer, non-white communities are not treated as equally as their affluent counterparts. If either of these lead issues had occurred in a place like Saddle River, NJ which is 75% white with a poverty rate of 0.51%, their concerns probably would have been taken more seriously (Data USA 2018). However, because the victims in the parts of Newark with the oldest pipes and more degraded infrastructure were predominantly black or Hispanic, an implicit bias may have been applied to the mitigation strategies. The city's lack of urgency, as well as flat out denying there was a lead problem in Newark demonstrates a bias that was also seen in Flint. This nation's institutional and historical racism through housing, employment, and educational discrimination achieved a pseudo-segregation that resulted in certain groups of people disproportionately bearing environmental burdens, and not being heard when the issue reaches crisis-level. Luckily for

Newark, once the city realized its mistake in diagnosing the source of the lead, it worked to help those in need.

Their lack of initiative in the beginning of the investigation when 20% of homes were testing above the federal action level suggests that the city did not know about the treatment plant problems. Their failure to act despite warnings weakens the power of the State as well as the Clean Water Act, SDWA, and Lead and Copper Rule. It would have been significantly more expensive to replace all existing lead service lines in Newark than to fix the treatment plant and would have put the cost burden on individual homeowners in the area (Yi 2018). The City of Newark should be held accountable for not complying with the two notices issued by the DEP, whether they were aware of the treatment plant problem or not. Lead is different from many other contaminants because no level is safe to humans. Especially since the city has a history of reporting the highest childhood blood lead levels in the nation, they should have taken the warnings more seriously instead of denying there was even a problem. If they had started proper investigations earlier on, they could have prevented thousands of residents from probable lead exposure.

Finally, the comparison of the Flint, MI case to Newark's shows the power of previous public health disasters and their impacts on current issues. Once the real problem was identified, Newark worked much faster than the City of Flint to provide safe drinking water to their citizens and other solutions to the lead problem. Flint took almost four years to reach a point of being able to drink water from taps again, while Newark took a little over a year once the old

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**What is “Safe Sex”? Understanding the Need for Sex
Education Reform**

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Abstract: Currently, the United States has no standardized requirement for sex education. This has precipitated a large gap in knowledge about safe sex and a lack of consensus in current social and educational policy. Debates about abstinence-only and comprehensive sex education have reached a standstill. In an effort to advance the discussion, this paper reveals that the neuroscience behind adolescent sexual risk taking provides underutilized evidence for comprehensive sex education programs. Research shows that adolescents have biological differences in their brain structure that result in a decision-making process different from that of adults, one that can preference rash decisions and potentially unsafe behavior. Therefore, current approaches to social and education policy for teens should change to reflect this research and in-school curricula should evolve to reduce rates of unsafe sexual behaviors more effectively. Funding for such programs would more than pay for themselves with the resulting decrease in teen pregnancy and sexually transmitted diseases.

Keywords: Education Policy, Sex Education, United States

Introduction

Currently, the United States has no standardized requirement for sex education. This precipitates a large gap in knowledge about safe sex where “adolescents, aged 15-24, represent 25% of the sexually active population” but represent “nearly 50% of the 18.9 million newly diagnosed sexually transmitted infection cases each year” (Suleiman and Brindis 2014). This disparity results in a national gradient, with abstinence-only and comprehensive sex education on opposing sides. On one hand, lawmakers, activists, and students push school boards and courts to pass legislation that supports both local and national standards for comprehensive sex education. In tandem, socially conservative advocacy groups and many parents take major issue with these proposed reforms (Richardson 2018). However, both sides fail to incorporate the strong quantitative data that already exists when discussing the merits of their program. Specifically, scientists have researched the topic of the adolescent brain in decision-making for decades. The lack of scientific evidence utilized currently represents a disconnect between sex education research and the average American understanding of this data. Sex education is currently determined on a state or district basis, allowing parents greater influence. This not only begs the question of parental rights in this environment, but also represents a major flaw in the ongoing debate. The overrepresentation of parental influence, in turn, obscures the deficiency of scientific evidence in the conversation. For many parents, the topic of the sex education of their children is emotional. This allows other issues that are unrelated to risk to enter the

conversation. It is necessary to examine some of these other arguments to understand how they are currently undermining the scientific data. Ultimately, to effectively educate and protect adolescents, we must consider the scientific data over the influence of parental pressure. Current neuroscience research reveals that “the interaction between developmental factors [...] in sexual decision-making points to a need to better integrate these components into sex education” (Suleiman and Brindis 2014). Thus, sex education programs that understand and utilize this information will most effectively minimize this risk for teens.

Current State of Affairs

The most prevalent sex education approach in current schools is abstinence. These kinds of programs are largely backed by parents who claim that “sex education [...] has become graphic, hedonistic and ideological” (Richardson 2018). In an effort to combat this, parents are taking matters into their own hands. *The Washington Times* reports a “sex ed sit out” where parents pulled their kids out of school on April 23, 2018 to protest progressive sex education. Not only is this a national initiative, but activists claim that the sit out functioned on a global scale. The parents were specifically upset about Planned Parenthood’s “Get Real” program that addresses topics, “such as female and male anatomy, puberty and sexually transmitted diseases, but also offers lessons on ‘sexual identity’ and ‘gender, sex and shared responsibility’” (Richardson 2018). However, with the pressure from progressive sex education groups, abstinence-only

supporters are taking increased measures to ensure the survival of their programs. Activist and mother Elizabeth Johnston says, “most parents do not know this is taking place in schools” and “bureaucrats are using deceptive means of not informing them what is being taught” (Richardson 2018). Therefore, many parents, like Johnston, feel the urgency to ensure the continuation of traditional abstinence-only sex education. Through protests, sit outs, and community activism, supporters of abstinence-only sex education are curbing the growth of more inclusive sex education programs.

In opposition, comprehensive sex education advocates for the revision of abstinence-only sex education. Although what “comprehensive” means has not been clearly established, most proponents agree that sex education should be medically accurate and evidence-based (“Abstinence Education” 2018). Many institutions are looking for a more progressive and inclusive option to abstinence-only sex education. Colorado is one state that increasingly pushes these boundaries. The main goal of new legislation would be to ban abstinence-only education. Many students testified in support of this bill, describing how “representatives warned students that simply holding hands or hugging would lead to sex, diseases and failed relationships” (Levin 2019). Supporters of the bill reference studies showing that abstinence-only education ultimately negatively impacts adolescents compared to comprehensive sex education (Levin 2019). Scientific evidence such as this inspires proponents to speak out and push for better programs. In a society where “almost 17% of the newly diagnosed HIV/AIDS cases [...] were among youth between

the ages of 13-24 years old,” current programs are not doing enough to effectively educate adolescents (Suleiman and Brindis 2014). Supporters of comprehensive programs hope that by giving adolescents more information and communicating in more productive ways, they will be able to prevent some of these unsafe sexual behaviors.

Many studies have “shown that abstinence-only education increases rates of teenage pregnancy and sexually transmitted diseases, while comprehensive sex education lowers such risks” (Levin 2019). However, the debate about sex education reform remains ongoing. Both abstinence-only and comprehensive sex education supporters strongly believe in the benefits of their programs. Abstinence-only supporters fight against the increasingly graphic and over-sexualized nature of comprehensive sex education programs. In contrast, comprehensive sex education supporters claim that abstinence-only sex education is not medically accurate and, as a result, unsafe. Represented by the lack of consensus in current public policy, neither side seems to be enacting change. Therefore, we first turn to look at the readily available scientific evidence. It has long been known that adolescents engage in riskier behaviors and that these behaviors are grounded in underlying biological mechanisms. Evidence suggests that this translates specifically to sexual decision-making. This paper will examine the merits of this data and how it applies to the topic of sex education. Once we understand how the different factors are relevant to the conversation, then we can begin

to create programs that focus on the most significant aspects in designing effective curricula.

The Science of Decision-Making

Many neurological studies have connected the adolescent brain to increased risk-taking behavior. This is characterized by increased neural plasticity, “a process through which thinking and learning transform the brain’s physical structure and functional organization” (Suleiman and Brindis 2014). This allows the brain to become extremely susceptible to reward-seeking behavior, including in sexual situations. Concurrently, it also makes adolescence the primary time to learn how to confront these situations. Scientist Ahna Suleiman and Doctor Claire Brindis’s 2014 article in *Sexuality Research and Social Policy: Journal of NSRC* describes the biological foundations behind adolescent behavior. The differences are found in the “maturation of the lateral prefrontal cortex and the parietal cortex, both integral to managing impulse control” (Suleiman and Brindis 2014). As compared to adults, adolescents have reduced impulse control which is just one factor that contributes to their sexual risk-taking. Dr. Linda Patia Spear, a Doctor of Psychology at Binghamton University, published a scientific review article, *Adolescent Neurodevelopment*, in the “Journal of Adolescent Health” in 2013 that came to many of these same research conclusions. Spear (2013) along with Suleiman and Brindis (2014) also identified how different aspects of the limbic system contribute to the emotional development of adolescents. Spear (2013) discusses the delayed development of

the prefrontal cortex and a desensitized ventral striatum, both of which contribute to the gap between adolescent and adult behavior. This physical deviation of brain development from that of adults is the foundation for the thought process underlying most adolescent risk-taking behaviors.

This difference most clearly manifests itself when growing adolescent brains are involved in turbulent situations. Like Suleiman and Brindis (2014), Spear (2013) agrees that rational decision making “can be reduced under stressful, emotionally charged, and arousing circumstances [...] a phenomenon called hot cognitions.” Adolescents use a “slower decision-making process” when they find themselves in new sexual situations (Suleiman and Brindis 2014). However, many of these situations require quick and immediate responses, preventing adolescents from a more deliberative thought process. Situations that promote these “hot cognitions” often lead “an adolescent [to] weight short-term immediate outcomes more significantly than longer-term outcomes, resulting in increased risk taking” (Suleiman and Brindis 2014). A lack of knowledge about trust and intimacy, reinforced by poor sex education programs, proliferates these potentially unsafe behaviors. Therefore, programs that can use this information to “[increase] experience making sexual decisions, including setting boundaries, refusing sex, and refusing to have sex without protection” will most efficiently prepare teenagers to make less risky decisions (Suleiman and Brindis 2014). This kind of comprehensive education will manifest itself most clearly as these adolescents grow into adults and engage in more sexual experiences. Effective education programs

will contain components that target this thought process and prepare adolescents.

The compelling scientific data accounts for much of adolescent sexual risk-taking. However, abstinence-only education does not currently correlate with the need to prepare adolescents for encountering these risky sexual situations. Therefore, it seems that sex education needs to change. Perhaps a total revision to comprehensive sex education seems ambitious; however, the traditional metaphors and warnings of premarital sex prove ultimately more harmful than productive. Not giving adolescents all the available knowledge and resources does not prevent them from being in these situations. Rather, when they are in these new sexual situations, they find themselves ignorant and therefore feel pressured to take greater risks. By understanding how adolescents make decisions, states can begin to create sex education programs that will minimize risk as much as possible. Suleiman and Brindis (2014) effectively claim that “the current theoretical foundation of many [sex education] curricula asserts that sexual decision making is primarily a rational, deliberative process.” We now understand that this assumption deviates from current scientific evidence about the adolescent brain. The least safe sexual behaviors stem from unpredictable and stressful situations. Moreover, most sex education programs do not understand that adolescents “need better supports to make decisions when they find themselves making decisions in highly affectively charged, peer influenced sexual situations” (Suleiman and Brindis 2014). With these kinds of supports, adolescents will become

more adept at improving their reactions when facing situations that exacerbate their “hot cognitions.” Programs that can address what to do in these kinds of situations will be the most productive. Creating an atmosphere of free communication instead of embarrassment and silence will allow adolescents to feel more comfortable discussing these experiences and this will ultimately facilitate the safest sexual behaviors going forward.

Undermining the Science

The Adolescent Voice

Even though the scientific evidence remains convincing, the issue of the sexual education of adolescents is an emotionally charged one for most parents, perpetuating the sex education debate. Many fear the exploitation of their children’s youth and innocence. However, one thing that most of these parents do not consider is how their children feel about their own sex education. Adolescents know best what kinds of sexual situations they will face and, therefore, what kind of guidance they may need. A 2019 CNN article describes the story of Abigail McElroy, a Pennsylvania teenager, who successfully ended abstinence-only sex education in her high school. Abigail describes the common feeling of misrepresentation in current sex education, where organizations are “resort[ing] to scare tactics” (McElroy 2018). Instead of learning about the adolescent body and safe sex situations, she learned that “sex would ruin us for our future spouses [...] because, didn’t you hear, hand-holding and kissing are

simply stepping-stones to sex” (McElroy 2018). But Abigail is not alone in this struggle. She represents a large portion of American adolescents concerned about the inadequacy of current programs. A series of national surveys by The Kaiser Foundation found that “approximately half of students in grades 7-12 report needing more information” about different sexual situations outside of abstinence (Dailard 2016). Many high school students appeared and testified in support of Colorado’s new comprehensive sex education legislation to “mandate teachings about safe sex, consent and sexual orientation” (Levin 2019). For Abigail, the superintendent eventually made the necessary changes to her high school’s sex education program that “would ensure that teenagers know that healthy relationships are built on communication and consent, choice and confidence” (McElroy 2018). This highlights the importance of the adolescent voice in this debate. From Pennsylvania to Colorado, teenagers feel uninformed. Considering this conversation directly affects their wellbeing going forward, the perspective of all adolescents should be critical in this debate.

LGBTQ Community

One specific group of adolescents largely excluded from this current conversation and by abstinence programs is the LGBTQ community. Currently, “just 5 percent of LGBTQ students [report] having health classes that [include] positive representations of LGBTQ-related topics” (Sager 2017). Unfortunately, this is not surprising given the prevalence of abstinence-only programs which

are largely exclusive. Not only do most current sex education programs leave out LGBTQ topics, but “seven states [actually] prohibit teachers - under penalty of law - from acknowledging the existence of LGBTQ people other than in the context of HIV or to condemn homosexuality” (Barrica 2019). This not only reinforces dangerous sexual behavior due to ignorance, but also creates confusion about sexual identity and promotes an atmosphere of hostility. When adolescents are uneducated about how to safely interact with sexual experiences, they begin to have false beliefs about their identity and desires. For LGBTQ students facing such stressors, this can result in “increased risk for depression, substance use, and sexual behaviors that place them at risk for HIV and other sexually transmitted disease[s]” (Sager 2017). When current programs put students at risk for mental health and other healthcare complications, they are not safeguarding adolescents. Comprehensive sex education programs contribute to more inclusive environments that result in increased acceptance and less bullying behavior. If the goal of sex education programs is to reduce harm, it should include all adolescents. This will most feasibly occur through a national effort to expand comprehensive sex education.

Academic Responsibilities

These discrepancies in sex education cause some parents to argue that sex education is not an academic responsibility, but a domestic one. Opponents to comprehensive sex education legislation allege “that sex education should be taught at home, and [claim] that

children removed from the lessons would be bullied” (Levin 2019). In theory, this could work if parents are well-versed on topics such as anatomy, sexually transmitted diseases, and consent and are comfortable discussing such topics. In reality, “most parents can’t or don’t provide such guidance” (Barrica 2019). Not only that, but many adolescents feel uncomfortable discussing such topics with their parents. This perpetuates a cycle where “because our parents weren’t able to talk with us about it, we’re unable to talk with our kids” (Barrica 2019). While a little over 40% of adolescents have had sex before graduating high school, most do not receive necessary instruction on contraception, diseases, or intimacy (Youth Risk 2016). The combination of inadequate domestic and academic sex education has serious repercussions. This most likely explains “why one in four American women will become pregnant by the time they turn 20” (Barrica 2019). Even more concerning, “only 41 percent of American women [describe] their first sexual experience as wanted” (Barrica 2019). With the trend of sexual misconduct so prevalent in current society, it seems that at-home sex education, as well as in-school sex education, falls behind in effectively educating adolescents. By not informing today’s adolescents, society “allows predators to set the narrative. They count on the culture of silence and the sense of shame” (Barrica 2019). Colorado state representative, Susan Lontine says, “the sooner we talk to kids about what consent looks like, the sooner I hope a tide will turn so we’re no longer hearing stories of people being harmed” (Levin 2019). This affirms the need for a baseline criteria for sex education and, more specifically, one that educates

adolescents on these topics with respect to their peers. Realistically, a national comprehensive sex education curriculum could accomplish this most efficiently. Instead of portraying sex as scandalous, the importance of sex education programs lies in promoting a candid and accepting atmosphere.

Religious Rights to Opt Out

One of the most extensive communities where this open atmosphere is replaced with abstinence-only education is those who believe in a right to opt out due to religious beliefs. Many abstinence-only supporters see comprehensive programs as promoting the use of contraception in opposition to abstinence. However, a study done by the Drexel University College of Medicine in 2009 *Reproductive Health* found that “conservative religious beliefs predict[ed] teen birth rates highly and significantly” (Strayhorn and Strayhorn 2009). Most significantly, the author proposes that this trend results “by discouraging contraception without successfully discouraging sexual intercourse” (Strayhorn and Strayhorn 2009). Even though some teenagers do support an abstinence-approach, data show that many of them are having sex anyways. Across the political and religious spectrum, teen pregnancy is seen as detrimental. From underachieving academically to “worse physical health” and “almost three times more likely to be incarcerated during adolescence,” teen mothers fare far worse than the average adolescent (Strayhorn and Strayhorn and Strayhorn 2009). While many studies have shown that abstinence-only programs are unsuccessful at reducing teen

pregnancies, limiting knowledge and access to contraception makes this situation even more dangerous. Research shows “that teaching about contraception is generally not associated with increased risk of adolescent sexual activity or sexually transmitted diseases” (Stanger-Hall 2011). Therefore, education about contraception use is necessary for every adolescent facing sexual situations. Keeping adolescents ignorant about protection and safe sex “isn’t ideological; it’s negligent” (Barrica 2019). Without such programs, there are very real consequences that are yielding high teen pregnancy rates. Ultimately, this affects all of society, not just the individual.

Economic Influences

Teen pregnancy becomes a relevant issue for more than just parents and activists when “teen child-bearing...in the U.S. cost taxpayers [...] more than \$9.1 billion in 2004” (Stanger-Hall 2011). A 2005 study in PLoS One Journal by scientists at The University of Georgia about pregnancy rates and their correlation with varying levels of abstinence-only programs found that “the level of abstinence education [...] was positively correlated with both teen pregnancy and teen birth, indicating that abstinence education in the U.S. does not cause abstinence behavior” (Stanger-Hall 2011). The study found that states that stress abstinence had the highest rates of teen pregnancies in “girls aged 14-19” (Stanger-Hall 2011). The lowest rates of teen pregnancy were found in states that included “abstinence for school-aged teens as part of a comprehensive sex or HIV/STD education curriculum” (Stanger-Hall 2011). Both of these results

were statistically significant. Additionally, the authors found correlations between socioeconomic status and ethnic composition and teen pregnancy. However, out of all these factors, the authors concluded that sex education was the most important factor to explain why the “U.S. teen pregnancy rate is substantially higher than seen in other developed countries despite similar cultural and socioeconomic patterns in teen pregnancy rates” (Stanger-Hall 2011). The connection between many other developed countries with comprehensive sex education programs and decreased teen pregnancy rates is a powerful example for how comprehensive sex education legislation could benefit the United States. This could directly translate to better life outcomes for these teenagers. This also reinforces the importance of sex education as a national conversation. Overall, these results imply that comprehensive sex education programs are better at preventing unplanned pregnancy and promoting safer sexual behaviors than current abstinence-only programs.

Comprehensive sex education may reduce rates of teen pregnancy, but the principal issue remaining is whether it would be financially feasible. Current government funding for sex education programs focuses largely on abstinence-only programs. While the Obama administration made strides for more comprehensive sex education, “the Trump administration [...] has reversed course, cutting more than \$200 million in funding” (Barrica 2019). Just this year, government funding for abstinence-only programs reached \$110 million, the highest it’s been in the last decade (“VERMONT - Sicus.org” n.d.). However, based on previous research studies, there

is not a correlation between abstinence programs and abstinence behaviors. As a result, taxpayers are spending billions of dollars on teen pregnancies each year. Additionally, “the estimated cost to the US health care system from [...] new [adolescent sexually transmitted] infections is \$16 billion annually” (“Sexually Transmitted Diseases” n.d.). If comprehensive sex education programs can effectively reduce the risk of STDs and teen pregnancy, then the overall financial benefits may outweigh the initial funding. Vermont represents one state that exemplifies the financial success of such programs. Starting in 2014, the statewide legislation made moves towards comprehensive sex education programs in all schools (“Sexual Health” n.d.). While the national teen pregnancy rate is declining, Vermont’s rate is still markedly reduced compared to many other states. From 2011 to 2016, with the implementation of such programs, Vermont’s teen birth rate was reduced by 45.79% (“Vermont Data: Power to Decide” n.d.; “Births: Final Data for 2015 - Cdc.gov.” n.d.).

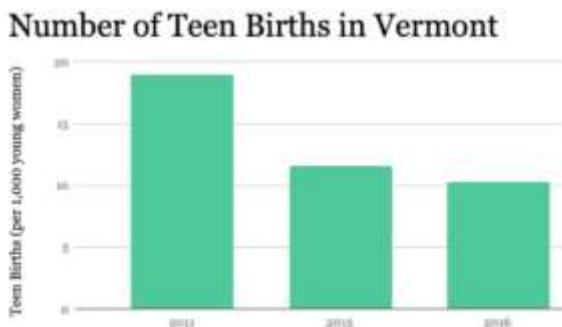


Figure 1: Number of Teen Births in Vermont from 2011 to 2016

With one of the lowest teen pregnancy rates in the country, 92.8% of high school students in Vermont reported using contraception during sex in 2017. Due to the decline in teen birth rate, taxpayers saved an estimated \$7 million dollars by 2015 (“Vermont Data: Power to Decide” n.d.). To enact similar programs on a national scale might contribute a significant financial difference for American taxpayers. If every state similarly reduces their rates of teen pregnancy, this could result in millions of savings. Comprehensive sex education programs financially justify themselves by producing these kinds of results. The financial and educational consequences are so powerful, comprehensive programs should be enacted immediately.

Conclusion

All of this evidence encourages the evolution of current sex education programs. Standardization of such programs will necessarily ensure that the most accurate and recent information is taught. This will inevitably limit parental influence in the education of their children. However, when understood, the scientific evidence establishes the idea that comprehensive sex education and, specifically how it is delivered, reduces adolescent risk-taking. With the cost-effective nature of such comprehensive programs, immediate steps forward are crucial. Once lawmakers, activists, and parents come to understand these notions, it will be easier to agree upon a standardized sex education program. This will rely on a standard of evidence-based and medically accurate information that ensures that

the education of adolescents will reliably transfer to real-world application. By utilizing adolescent sexual research, social policy can evolve to the greatest benefit of adolescents.

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**The United States Love Affair with Maize: A National Security
Issue?**

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Abstract: Maize is the most widely grown crop in the United States. The crop has a variety of applications being used for food, fuel, and in some industries. Maize is heavily integrated into the fabric of billions of lives across the world. The United States has encouraged the growth of a massive maize monoculture through the usage of government subsidies. However, this presents issues for the United States since it has created a large monoculture that is threatened by natural disasters, pest infestation, and bioterrorism attacks. Additionally, the cheap nature of the monoculture has additional externalities. Examples include decimated maize production in Mexico, Central America, and developing countries, which has led to dependence on the United States crop and decreasing international food security.

Keywords: Maize, United States, International Food Security

Background

Maize has had a long-storied history arising from teosinte and becoming one of the world's most dominant crops. Maize is estimated to have originated in Mexico, in the current state of Oaxaca. Word of this wonder crop soon proliferated across other regions of the Americas and its usage eventually found its way to the Columbian Exchange. Maize is a staple crop that supported the civilizations of the Toltec, Olmec, Mixtec, Zapotec, Aztec, Maya, and other groups. In North America maize was a prominent part of three sisters' agriculture that included maize, beans, and squash. The abundance of maize and its storage capabilities led civilizations to make significant strides in astronomy, math, medicine, and engineering to build the remarkable cities of Tlatelolco and Tenochtitlan. In Central America maize was revered; this reverence is reflected in the Mayan sacred text, the Popol Vuh, which states that the gods mixed maize flour (Masa) and their own blood to create people (Smithsonian 2019). Maize is still prominent in the Americas and in the United States the reliance on maize has become a national security issue.

Introduction

Historically the United States has had numerous cash crops such as cotton, indigo, tobacco, and sugar, but today corn is king. In the United States maize is the most widely grown crop, has the highest market value, and the most acreage beating soy, which is the second most expansive crop, by a large margin (Pimentel and Patzek 2005). The United States maize crop is so large that the country produces

more than the next four largest producing countries combined: China, Brazil, Ukraine, and Argentina (Allen and Valdes 2016). Maize is a fundamental ingredient in many goods including: foodstuffs, toothpaste, packing peanuts, makeup, shampoo, diapers, food coloring, adhesives, perfume, Aspirin, matches, batteries, plastic, pharmaceutical drugs, and fuel, among other products (Paasche 2012). The love affair with maize is reflected in the diversity of maize's applications and the financial support put forth by the government to maintain and encourage the maize industry. The globalized trade of maize from the United States has broad and dangerous implications both domestically and internationally.

A History of Monocultures in the United States

A monoculture is the agricultural practice of growing a singular crop species in which all plants are identical or genetically similar over vast swaths of land. The usage of a monoculture has some benefits as it typically results in low input prices and high yields. However, growing a singular species on large tracts of land creates large scale pest problems and prompts the pest treadmill cycle. The pest treadmill cycle occurs when pests build resistance to pesticides, thus requiring a greater amount of pesticides or new types of pesticides to get rid of them. When this process begins, the use of pesticides becomes an integral part of the agricultural cycle. In the United States, commodity monocultures are encouraged due to the Farm Bill which incentivizes the overproduction of cotton, wheat, maize, and soybeans through the use of government subsidies. The Farm Bill originated during the Great Depression and maintained a goal to preserve

the diverse American farm landscape. In this period of history crop surpluses ran high, but demand remained low. President Franklin Roosevelt passed the Agricultural Adjustment Act which paid farmers not to cultivate certain percentages of their land, allowing commodity prices to increase, and ultimately prevent farmers from going out of business. This kept the market afloat, however in the process it became a permanent piece of legislation following 1938 (Masterson 2011).

Agriculture went through a radical shift following the Great Depression, innovations overhauled farming and led to the massive monocultures seen today in the United States. In the 1960s, the Green Revolution led to the introduction of high-yield hybrid crop varieties, synthetic fertilizers, farm equipment mechanization, and pesticides (Mills n.d.). The average size of farms kept growing in this period and today the average number of acres per farm has increased over 100% since the 1980s (DePillis 2013). In this period, farms have consolidated with 20% of farmers producing 80% of agricultural commodity outputs (Mills n.d.). A major factor that changed the farming landscape in the United States was the Marketing Loan Program incorporated into the Farm Bill in which agricultural commodities revolve around a fixed price set by Congress. One result of the Marketing Loan Program is that farmers would be reimbursed if prices fell beyond a certain point. This government reimbursement program encouraged increases in agricultural production whether it was needed or not. The more farmers grow, the more money they will gain even if it lowers the overall commodity price (Riedl 2007). The

radical changes in the American farming landscape starting in the 1960s, and new Farm Bill programs such as the Marketing Loan Program changed the way farmers managed risk and established the foundations for the monocultures seen today in the United States (Haspel 2014).

Lack of Crop Biodiversity

The current method of US maize production results in a massive monoculture. Currently it is estimated that Monsanto, DuPont, and Syngenta control 47% of the global seed market and 65% of the proprietary maize seed market (Associated Press 2009). Control of the seed crop by oligopolies constrains the varieties of seed available to farmers. Many of the seeds sold are of hybridized varieties which are typically sterile, the other major form of seed is that of genetically modified seed. Since genetically modified seeds contain patented information, they cannot be replanted without prior consent by the patent holder according to the Supreme Court holding in *Bowman v. Monsanto Co.* Most commercial farmers are reliant on the major seed companies to supply them each season, from these companies they have only a narrow menu of varieties available to them. Little biodiversity exists in the domestic maize crop. The vast majority of maize grown in the United States is a variety known as yellow dent corn or a closely related variety derived from it. The lack of genetic diversity renders the maize crop susceptible to largescale failures.

Externalities from a Reliance on Monoculture

In the past the reliance on large monocultures have led to catastrophic consequences when they have failed to produce a viable crop. Examples of large monocultures failing are seen throughout history. In the 1940s a significant portion of the oat crop was lost due to a fungal pathogen known as Victoria blight, while in the 1850s-1870s the Great French Wine Blight caused by aphids laid waste to the wine industry in France. The Gros Michel was the primary export banana consumed around the world until the 1950s, when the variety declined due to significant losses resulting from Panama Disease. One of the most notable monoculture failures was the Irish Potato Famine occurring between 1845 and 1852 in which the potato crop failed, and the population of Ireland was reduced by about 20 – 25 percent due to starvation and mass exodus. Monocultures are larger than they have ever been, and the reliance on them is far greater than it ever was in the past. This is problematic as they are extremely susceptible to infestations, natural disasters, and in our current era, bioterrorism attacks.

Anthropogenic Impacts

A bioterrorist attack would involve the intentional dissemination of biological or herbicidal agents such as viruses, fungi, bacteria, toxins, or chemical substances to destroy plants or disrupt agricultural food production. Since 1978, the United Nations Environmental Modification Convention has outlawed “any technique for changing the composition or structure of the

Earth's biota" (ENMOD 1978: Article II). However, if an entity were inclined to disrupt the American maize crop, extensive damage could occur by comparatively low-tech means. A bioterrorism attack would require relatively little specialized expertise and technology to be carried out. The impacts from such an attack would pose a serious threat to both US agriculture and the domestic economy (Wheelis, Casagrande, and Madden 2002). It is an extremely vulnerable area where there are little to no protections in place. The maize monoculture is vulnerable to both biocrimes and bioterrorism which are difficult to protect against. It is difficult to pinpoint where an attack will come from as agricultural bioterrorists have a variety of motives.

There are a number of adaptive strategies the United States can use to mitigate against a bioterrorist attack. First and foremost, the government could seek to address the issue of what creates monocultures such as reforming or eliminating the Marketing Loan Program. If the government chooses to maintain the Farm Bill and subsidies, they can use these rewards to incentivize farmers to grow different varieties of crops. Farmland where the crops maintain a diverse genetic composition are less susceptible to a bioterrorism attack, especially if that attack targets a specific crop or plant variety. As technology progresses ports of entry can be equipped to perform more comprehensive testing of foodstuffs, and crops being brought in to prevent pests or pathogens from being introduced intentionally or unintentionally.

Foreign Energy Dependence

A change in the US maize supply would affect fuel prices and increase the United States dependence on foreign oil. The 2007 Energy Independence and Security Act (EISA) promoted the growth of the maize-ethanol industry. Today approximately 40% of the maize crop is converted into ethanol for fuel use annually. As time passes, more mandates are directing maize specifically into ethanol production (Foley 2013). This occurred following the spike in the price of crude oil in the late 2000s' and, as a result, EISA was touted as a means for the United States to achieve energy independence. The United States viewed maize ethanol as a viable alternative fuel following the success of Brazil's biofuel program. In 2006, Brazil announced they had become dependent from foreign fossil fuels as their flex vehicles were primarily running off ethanol from sugarcane (Reel 2006).

In 2007, 4.7 billion US gallons of ethanol were produced, and EISA mandates suggest the figure should increase to 36 billion US gallons in 2022 (EPA 2017). Currently, the conversion of maize kernels into ethanol is very inefficient as maize is starchy and requires enzymes to be broken down into sugars. In the future, the production of cellulosic ethanol from maize stalks may make maize an efficient option, but as it currently stands the operation remains inefficient. On the other hand, sugar cane from Brazil is 20% sugar and can be fermented almost immediately (Cox 2007). Ethanol is less efficient than traditional fossil fuels as it achieves 30% fewer miles to the gallon than gasoline (Ethanol Fuel Basics 2019).

If the US maize supply were reduced, ethanol production

would also decrease, leading to a greater demand for gas and oil. The United States has increased its domestic production of gas and oil following the shale revolution; however, the country remains a net energy importer. The United States would face a greater demand for international energy primarily from fossil fuels. Reliance on the maize monoculture is subject to vagaries as it can be impacted by a natural disasters, such as droughts, or an attack. If the monoculture is impacted, the United States will face a greater dependence on foreign fossil fuels and the potential for the country to become caught up in political entanglements with volatile energy producing countries. As one of the world's largest oil consumers, uncertainties concerning the maize monoculture and the lack of energy security means the United States is subject to the whims, powers, and price fluctuations of OPEC. The United States' decision to use maize as a means to reduce foreign oil dependence is not efficient and creates a national security concern as it increases the domestic reliance on an uncertain commodity.

Food Costs

The negative impacts to the United States maize monoculture would have reverberations felt by people across the world. In the United States, a decrease in the yield of maize results in an increase in food prices. Meat and dairy production in the United States relies on maize with 36% of the domestic crop being used for livestock feed (Foley 2013). Additionally, maize is used in a variety of food preservation processes including the production of ICEIN™, a maize based processing aid sprayed on produce to prevent oxidation

for fresh foods. A shock to maize supply would impact the prices for processed foods, meats, eggs, dairy, vegetables, and fruits. Price increases disproportionately affect the poor, and can expand the demographic of individuals experiencing food insecurity.

A supply shock in the US maize monoculture will have international impacts, most notably in countries reliant on US maize. When this occurs, the global poor are the demographic most adversely affected. Many of these individuals are food insecure, with few other options. A food shortage can force migrations into other areas which may not have the capabilities to respond to incoming refugees. Additionally, maize is typically used in USAID food aid, and is an arm of US diplomacy. Maize is only used if American farmers have a surplus crop which is then exported as humanitarian aid (USAID 2019). If the monoculture is impacted, the United States then loses a significant part of its food aid and an element of its soft power.

Subsidies and Cheap Cereal

US maize is produced very cheaply from taxpayer subsidies, which has an adverse impact on the developing world. Maize subsidies in the United States have totaled \$113.90 billion USD from the years 1995-2019 (EWG 2019). This has resulted in a process that produces maize at a very cheap rate. Maize is exported to other countries so cheaply that it has become cost ineffective for countries to grow their own maize or other cereals. International markets, predominantly in the Global South, are flooded with cheap maize, creating a non-competitive landscape for international farmers. Many of these

farmers go out of business, while countries lose farmland, skilled farmers, and self-sufficiency, thus becoming dependent on US maize exports. When a country is dependent on US maize exports, they are subjected to the artificial highs and lows of cereal commodity prices. These countries are then at the mercy of conditions that affect US farmlands. An example of this was seen in the 2012 North American drought, where the supply of maize exported was reduced because of the drought and a larger percentage of the crop was being devoted toward ethanol production. Countries which relied on US maize could not secure maize, which was an issue for areas suffering from natural disasters, crop destruction, and food shortages (Schwartz 2012). In this event, the people who suffered the most were the poor in the Global South who had become reliant on US maize exports but did not have access to the product.

Maize and Mexico

The negative effects of cheap US maize are seen firsthand in the country of Mexico. Following the signing of the North American Free Trade Agreement (NAFTA), cheap US maize flooded Mexico's markets leading Mexico to become the biggest importer of US maize. Mexico's maize production and the cultural importance of growing maize has declined significantly (Carlsen 2013). Today the US state of Iowa produces more maize than the entirety of Mexico (Living History Farms 2019). The decimation of Mexico's maize industry has led to large numbers of skilled farmers losing their jobs and unskilled laborers from Mexico moving into United States. In the United States,

many remain undocumented workers earning wages typically lower than what federal minimum wage laws dictate. Laborers have the ability to drive wages down and many of the laborers do not speak out against this since they are subjected to abuses from employers and are threatened due to their legal status.

Despite the prevalence of cheap US maize in Mexico, significant portions of the population are still hungry with an estimated 20 million Mexicans living in food poverty (Carlsen 2013). Ultimately cheap maize could destroy international markets, leading to migration throughout the Global South, and dramatically reducing the level of food security for reliant countries.

Conclusion

The United States is in too deep with its love affair for maize as it currently devotes most of its agricultural subsidies to the maize monoculture (EWG 2019). Agricultural monocultures have failed in the past on a much smaller scale leading to severe consequences such as industry collapse and mass migration movements. These have occurred from natural phenomena; however, the United States also needs to take into account the additional threat that bioterrorism poses against its most valuable crop. If the US maize crop is impacted in a negative manner, consequences will occur on a global scale. A decrease in the maize crop will lead to a greater dependence on foreign oil, higher food prices, and the rise of hunger in the Global South.

The United States heavily promotes the maize industry as it plays a major role in the food, industrial, and energy sector. The United

States can address these areas independently by promoting investments in domestic energy production not reliant on ethanol and promoting other crops for feed and industrial usage. Encouraging alternate forms of agriculture and different crops would reduce the overreliance on a single crop and reduce future national security risks. Additionally, maize maintains many important uses which were highlighted throughout this paper, however the lack of genetic diversity in the maize crop renders it vulnerable to natural phenomena and attacks. Attempts to increase the varieties and diversity of maize will be a significant first step in challenging American agricultural monocultures, and improving national security. Addressing monocultures in the United States has global implications, as it will allow international small-scale farmers to gain a better foothold in their countries and work towards domestic food security. The government programs that have encouraged large monocultures should look to the initial intentions of the Agricultural Adjustment Act to preserve the rich diversity of American farmland that once existed.

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