

THE PENNSYLVANIA STATE UNIVERSITY  
SCHREYER HONORS COLLEGE

DEPARTMENT OF POLITICAL SCIENCE

Investigating the Effects of Empathy and News Readership on Affective Polarization

STEVEN ZHANG  
SPRING 2022

A thesis  
submitted in partial fulfillment  
of the requirements  
for baccalaureate degrees  
in Political Science and Economics  
with honors in Political Science

Reviewed and approved\* by the following:

Peter Hatemi  
Distinguished Professor of Political Science  
Thesis Supervisor

Matthew Golder  
Professor of Political Science  
Honors Adviser

\* Electronic approvals are on file.

## ABSTRACT

Political scientists have hypothesized that empathy can be a key tool towards reducing affective polarization by encouraging cross-party understanding, but studies have shown that empathy can intensify either positive or negative emotions towards political out-groups. I propose that diversity of news readership modifies the effect of empathy to reduce overall affective polarization. However, my regression suggests that the interaction between empathy and news readership actually increases affective polarization. The directional change of the interaction variable compared to empathy provides evidence that the effect of empathy on affective polarization can differ depending on different mechanisms that can prime empathic behavior.

**TABLE OF CONTENTS**

LIST OF TABLES.....	iii
ACKNOWLEDGEMENTS.....	iv
Chapter 1 Introduction.....	1
Chapter 2 Literature Review.....	4
Chapter 3 Hypotheses.....	15
Chapter 4 Methods.....	16
Chapter 5 Results.....	29
Chapter 6 Discussion.....	35
Chapter 7 Conclusion.....	39
Chapter 8 Supplementary Materials.....	41

**LIST OF TABLES**

Table 1: Summary Statistics of Variables .....	19
Table 2: Correlation matrix between empathy variables .....	22
Table 3: Correlation Matrix of Political Participation Variables .....	25
Table 4: Regression Results of Polarization by Explanatory Variables.....	29

## ACKNOWLEDGEMENTS

I would like to thank Peter Hatemi, my thesis supervisor, for his mentorship and his passion for teaching. He has been indispensable throughout the thesis writing process, and his course in political psychology was vital to piquing my interest in human relations. I would also further like to thank Marie Hojnacki for her dedication to guiding students through the thesis writing and academic process, and Matthew Golder for his wealth of knowledge as my honors advisor.

I extend my sincerest gratitude to Jonathan Brockopp and Caitlin Grady for their dedication toward expanding ethics into the lives of students. Jonathan and Caitlin were a few of the first mentors I had the pleasure of learning from at Penn State, and their belief in improving society, social discourse, and leadership through ethics continues to create student leaders and scholars seeking societal unity amongst much conflict and discrimination. I would not be who I am today without their guidance and direction throughout my college career.

And of course, I would like to thank my brother, my parents, and my grandparents for their patience and encouragement throughout my college experience. Words could not express my gratitude to the sacrifices my family has made to ensure my successes in college and life. They are the reason that I strive to achieve greater heights every day.

## Chapter 1 Introduction

Throughout America's history, there have existed multiple periods of political turmoil that have sharply divided Americans on the basis of policy stances. The past few decades, however, have witnessed perhaps the highest levels of political polarization, sewing deep mistrust in Americans of their friends, family, and neighbors. Political affiliation has become intensely personal: In 1960, only 4% of Democrats and Republicans said they would be displeased if their child married someone of the opposite party; in 2019, that number has grown to 45% of Democrats and 35% of Republicans (Najle & Jones, 2019). Disapproval of individuals across the political spectrum simply for their affiliation has profoundly negative implications for the functioning of America's political system. For example, many Democrats attribute the failure of America's COVID-19 response to simply having a Republican president in office, rather than critically analyzing COVID-19 policies to prevent future policy failures (Druckman et al, 2019). As such, this increase in animosity could lead to further deterioration of effective policymaking.

One key driver of this conflict is affective polarization: a form of political polarization where individuals are primed to accept their political party as one of their salient social identities and antagonize others who belong to opposing political parties and ideologies (Iyengar et al., 2019). Prior research has proposed empathy as a psychological lever to reduce the effects of affective polarization, but the literature suggests that empathy can be primed to manipulate one's level of affective polarization. On one hand, increased empathy could be a trait that decreases affective polarization if an individual can more easily identify with opposing perspectives, decreasing their negative perspective of political outgroups. However, recent research finds

evidence for another potential trend: individuals with an increased propensity for empathy may be more easily manipulated to empathize with their ingroup's struggles and alienate the outgroup, leading to increased polarization (Simas, 2019). Empathy is further complicated by a wide range of demographics and individual characteristics, all of which may be manipulated for the benefit of the political elite. Hence, there exists a need for further exploration into mechanisms that could explain the influence of empathy on affective polarization.

This thesis seeks to explore the interaction of empathy and news consumption as a driver of affective polarization. News readership across a variety of sources creates opportunities for individuals to establish commonalities with their political outgroup, therefore the breadth of news sources an individual reads could be an activating mechanism for empathy and reduce affective polarization (Wojcieszak & Warner, 2018). I begin by characterizing the difference between affective and policy-based political polarization, exploring the underlying mechanisms of affective polarization, and then connecting affective polarization to the levers of empathy and news readership. The methods of the current study follow, to include a series of multiple regression models on affective polarization by empathy, news readership, and salient predictors of affective polarization. The results and implications follow.

This thesis relies upon data gathered from the America National Electorate Studies; a nationally representative sample of Americans taken during the 2020 election cycle. The study has measures of empathy, news consumption, like/dislike of the two major political parties in the United States (Democratic and Republican), and other critically important predictors of polarization. I find that the interaction effect between higher levels of empathy and higher diversity of news sources is positively correlated with affective polarization. Meanwhile, the isolated effect of empathy is negatively correlated with polarization, and the isolated effect of

news readership has no significant effect on polarization. This discovery further nuances previous studies on empathy increasing polarization, by narrowing this trend towards individuals who read more news sources. Furthermore, these results could indicate that the positive correlation between empathy and affective polarization is especially prevalent within the political elite or individuals highly involved in politics.



## Chapter 2 Literature Review

### **Affective (Expressive) Polarization vs. Instrumental Polarization**

Affective polarization provides a supplemental explanation to the traditional understanding of political polarization. Historically, research on partisanship within political science has relied on an instrumental perspective of political behavior: Individuals exhibit partisanship as an extension of their agreement on major policy issues, as well as party competency and performance (Huddy et al., 2015). Hence, polarization is hypothesized to increase with the increased distance in issue stances between political parties. However, decades of research examining this instrumental effect find that there are weakening relationships between an individual's issue preferences and perception of their parties compared to their willingness to shift their political partisanship. For example, political identity appears to remain strong despite evidence of poor party performance or shifts in party platform (Green et al., 2002). Surveys conducted on voters also showed that many partisans either were not aware of ideological shifts on their party platforms or were only slightly aware of said changes (Adams et al., 2011; Fernandez Vazquez, 2014).

Increasingly, the longevity of party identification and the increases in party-based polarization have been attributed to the expressive perspective of political behavior in the form of affective polarization. In the expressive case, political elites replicate identity politics by using political party as a salient identity (Huddy et al., 2015). Specifically, politicians may tie political party identification with another identity, such as black Americans voting Democrat as a social norm; this is expanded upon in the following paragraphs. Alternatively, political elites can encourage people to antagonize opposing political viewpoints with a process called "self-categorization", where individuals are prone to stereotype out-groups by a set of perceived

characteristics (Hogg, 2016). Many experiments have shown that priming people to self-categorize based on innate or arbitrary group characteristics can create animosity and tension between the groups, as well as increase competitive intergroup behavior (Tajfel & Turner, 1986; Hogg, 2016). As such, self-categorization can be an effective tool to mobilize individuals and pit them against an outgroup. Recent studies on political behavior find support for expressive polarization overpowering instrumental polarization: the strength of affective polarization does not seem to be significantly affected by the policy stances of a political outgroup, indicating that the increase in polarization is likely due to increased polarization of social and identity cues rather than political ideology (Iyengar, 2012).

### **Identity politics creating affective polarization**

One mechanism responsible for the rise of affective polarization is identity politics, or the act of mobilizing individuals on political action based on the shared injustices of a given group. An example of the intensity of identity-based politics is the strong voting bloc consisting of black Americans who consistently vote Democrat, despite black voters being one of the most conservative blocs in the Democratic party (White & Laird, 2020). For black voters, voting Democrat is a form of racialized social constraint, or a behavioral expectation put onto other blacks ever since the Democratic party strongly backed the U.S. Civil Rights movement in the 1960s (White & Laird, 2020). The association of the black identity with the democratic party is so strong that many black Americans rather influence the platform of the Democratic party by threatening to withhold their vote during elections than to vote for the Republican party, which contradicts the expectations of behavior for the instrumental view of politics (White & Laird, 2020).

The case of the black, Democratic voter shows the strength of identity politics in creating strong party affiliation, but identity politics alone does not explain why opposing party antagonism has increased throughout the years. Additionally, one must consider the deliberate use of identity conflict by political elites. While solidarity around identities can strengthen party affiliation, political elites have found that antagonism of identities can also be a powerful tool for increasing political support. Individuals with multiple identities that are antagonized by an opposing party (i.e. intersectionalities between race, gender, class, etc.) will feel stronger affective polarization towards the opposing party (Mason, 2016). These differences are exacerbated by an increased willingness of political elites to engage in "conflict extension", which is the tying of major political issues to the cultural, racial, and social identities people identify with to political parties (Layman, Carsey & Horowitz, 2006).

For example, the mobilization of identity became an extremely effective tool in 2016 for both Democratic and Republican presidential candidates. For example, in the 2016 election, candidate Donald Trump appealed to the poor, white, conservative voter base by tying the political issue of immigration to rhetoric antagonizing communities of color. Trump leveraged fears of a diminishing white identity in the United States by framing Mexican immigrants as rapists and job-stealers; and telling "the Squad", a group of liberal minority congresswomen, to go back to their countries (Bacon Jr., 2016). Consequently, Trump captured 60% of Republican voters who believed immigration was the most critical issue in 2016 (Bacon Jr., 2016). In response to President Trump's anti-immigration and divisive rhetoric, 2016 Democratic candidate Hillary Clinton mobilized the 'Love trumps hate' campaign slogan as part of the party's appeal towards minority voters (Miller, 2017). Another one of Clinton's key campaign slogans, 'I'm with Her', had multiple meanings, but one, in particular, appealed to the idea of

women's empowerment and supporting women's rights in the 21<sup>st</sup> century (Westby, 2017).

These two slogans are a few out of many attempts by Clinton to maintain the minority and female support of the Democratic party, of is elaborated upon throughout this literature review.

Academic literature similarly finds support linking the rise of group antagonism to affective polarization: Affective polarization has increased in parallel to the rising toxicity of political rhetoric, as well as antagonistic conversations between political candidates (Iyengar, 2012).

### **Consequences of affective polarization**

Affective polarization poses significant political and social issues for the American public. Politically, affective polarization leads to a decreased willingness to cooperate across party lines and a move away from policy-centered debate within American politics (Layman, Carsey & Horowitz, 2006). Affective polarization can deteriorate the functioning of our democratic institutions: many of our recent elections have focused on demeaning the opposition rather than addressing issues with policy proposals. Socially, affective polarization has divided the American public over relationships, friendships, economic behavior, and career advancement (Iyengar et al., 2019). In many instances, individuals experience discrimination based on who they support politically or their political affiliation rather than their experience and qualifications. Ingroup-outgroup perceptions driven by political labels also reduce the ability for an individual to connect with someone from the opposing party. Outgroups are often dehumanized and considered low on warmth and confidence. Recent studies show that people face more emotional exhaustion and reluctance to help others that are defined by negative biases and stigmas (Cameron, Harris & Payne, 2015).

## **Reducing affective polarization through empathy?**

These issues beg the question: How can society look to reduce affective polarization? In many domains, empathy has shown to be a potential contributor to reducing conflict and improving intergroup relations more generally (Stephan & Findlay, 1999). The definition of empathy varies based on the social science application but is generally known to consist of three measures: the ability to understand another's emotions, a feeling of concern for others, and an understanding of others' intentions (Decety & Cowell, 2015). By exhibiting reactive empathy, which is responding to another person with your emotions; or parallel empathy, which is attempting to experience that person's emotions, one can reduce prejudice towards outgroups and reduce feelings in dissimilarity and/or anxiety (Stephan & Findlay, 1999). Practices that increase the propensity for people to feel empathy, hence extending empathic feelings more frequently, can play a significant role in reducing affective polarization (Cameron, 2018).

However, empathy is a complex trait that, when activated in a specific context, may also lead to increased conflict. Specifically, while empathic concern for others is a powerful driver to wanting to assist others in need, empathy may also increase one's desire to harm outgroups that antagonize a person's identity group(s) (Hasson, 2018). Politically, increased levels of empathic concern have been shown to increase the level of favorability towards one's ingroups and decrease the level of favorability of one's outgroups, exacerbating affective polarization (Simas, 2019). As expanded upon below in the additional variables section, individual demographics like race, class, and gender are all forms of identity that have been weaponized to increase polarization. Current literature supports the idea that empathy does increase one's concern for others, but barriers that divide one's ingroup and outgroup may effectively prevent people who are affectively polarized from attempting to empathize with an opposing position.

## **The Role of News Consumption**

News consumption may be a variable that modifies the effect of empathy on affective polarization. Most notably, the diversification of news sources has allowed for news stations and media companies to cater to specific political identities to drive viewership (Wojcieszak & Garrett, 2018). News sources with a political agenda have naturally contributed to the political divide by framing issues in a way that is consistent with ingroup favoritism and outgroup antagonism. Concernedly, individuals engage in selective exposure of news sources that they choose to view, which reinforces their existing preconceptions on political ingroups versus outgroups (Wojcieszak & Garrett, 2018). Additionally, individuals also practice affective learning, which is when individuals pick up specific cues of political attitude based on the actions and opinions of the political elite they follow (Wojcieszak & Garrett, 2018). In these ways, an individual who is highly empathic and is exposed to politicized news may become significantly more polarized.

In contrast, exposure to media sources that exhibit counter-attitudinal perspectives—even sources that exhibit political leaning—has shown potential for depolarization; hence individuals who are exposed to media and news with opposing perspectives could potentially affectively depolarize (2018). This is supported by evidence that interparty contact increases the perceived commonality between opposing political groups, therefore an individual's affective polarization (Wojcieszak & Warner, 2018). These mixed results are a primary cause for investigation: the diversity of news readership can either increase polarization by increasing selective exposure or decrease polarization through exposure to counter-attitudinal perspectives. This thesis proposes that an increase in both empathy and news readership reduces the tendency for selective

exposure and increases the willingness to expose oneself to counter-attitudinal perspectives, hence decreasing affective polarization.

### **Additional Predictors of Affective Polarization**

#### *Race*

Several variables strongly correlate with affective polarization and need to be controlled for in this thesis. In this thesis, the control variables selected to control for affective polarization are in the context of the U.S. political system. First, demographic characteristics correlate with affective polarization as a result of conflict extension, which is the tying of social identities to political policies or movements. The previous example showed how black Americans extend the issue of social justice and equity to the success of the Democratic party, hence connects one's allegiance to the Democratic party to the well-being of their racial background. The Civil Rights Movement cemented the Democratic party's identity as a staunch supporter of racial justice, hence we would expect similar attitudes in other minority groups towards the Democratic party as exhibited by black Americans, although the effects are not as strong (White & Laird, 2020).

#### *Gender*

Similarly, gender and education have also been tied to the Democratic and Republic parties. For women, gender equality is a significant topic that has gained identity salience with our political parties. There exists a significant divide on gender equality, with a majority (76%) of Democrats believing that the country has not gone far enough in providing equal rights to women, compared to a plurality (48%) of Republicans believing that gender equality policy has been about right (33% of Republicans believe that gender equality has not gone far enough) (Barroso, 2020). Divisions between the parties on ideology-based issues exist as well—with 72%

of Democrats believing there are not enough women in positions of power compared to 41% of Republicans who believe the same thing (Horowitz & Igielnik, 2020). These divisions cause a high degree of party sorting among gender lines, with millennial women holding a 29-point margin in identifying Democrat over Republican, and black women reporting an 80-point margin in identifying Democrat over Republican (Doherty, Kiley & Asheer, 2020).

### *Participation/Partisanship*

Political elitism and the level of engagement in politics need to be controlled for, as politicians and the politically active are likely to be more polarized than the public (Parker, 2017). The increase of party sorting amongst political elites has become a lot more substantial in recent years, meaning that there is a lessening of political elites who express views that are moderate or that reflect the views of an opposing political party (Banda & Cluverius, 2018). As a result, individuals tend to express views that are more consistent with the opinions of their fellow partisans, widening the gap between the political parties and increasing the likelihood for polarization (Baldassarri & Gelman, 2018). Intricately linked to partisanship is the frequency of participation in politics by individuals. According to a 2014 Pew Research Survey, "Among both Republicans and Democrats, those who see the other side in very unfavorable terms are significantly more likely to be regular voters, to make campaign donations, and to participate in the political process in other ways (Dimock et al., 2014)." Hence, partisanship can increase the frequency at which one participates in actions that exacerbate polarization.



### *Social class*

Political partisanship and political polarization are strongly linked to increases in affective polarization, and both aspects are driven by middle- and upper-class representation in politics. Three variables included in this thesis to control for the effect of social class on partisanship and polarization are income, employment, and education.

The previous section discussed how political participation is intricately linked to affective polarization, and there is evidence to suggest that there is a class divide that correlates to the level of participation and enfranchisement by the U.S. political system. In the 115<sup>th</sup> U.S. Congress, 40% of representatives were millionaires and almost all representatives in the House and Senate held a bachelor's degree—with a majority of members of both the House and Senate holding post-graduate degrees (Edwards-Levy, 2018) (Manning, 2017). Public opinion on feeling represented by Congress is also heavily related to class and income: From a YouGov survey, 36% of those making 100,000 or more feel that they are well represented, compared to 16% of those making 50k or less (Edwards-Levy, 2017). Evidence also suggests that wealthy individuals are more politically sophisticated, hence are more likely to become polarized (Baldassarri & Gelman, 2008). Income is included as a variable to control for this effect.

Traditional literature on the relationship between education and political participation hypothesizes that increased educational attainment is cause for greater political participation (Berinsky & Lenz, 2010). However, recent studies controlling for extraneous effects stemming from education show that education itself is not a direct cause for increased political participation; rather, educational attainment is likely a proxy for variables like family background and childhood experiences—which affect political participation (Berinsky & Lenz, 2010) (Kam & Palmer, 2008). Both Berinsky et al. and Kam et al. find that higher educational

attainment is associated with the increased opportunities in life that an individual in a middle or upper class may experience, which increases their likelihood of being engaged in politics later on due to the class gap in politics as mentioned above (2010) (2008).

While education can indirectly relate to affective polarization through increased political participation, education is also directly associated with increased affective polarization: Highly educated individuals are more adept at motivated reasoning and “miscalibration” than less educated individuals (Drummond & Fischhoff, 2017). Specifically, well-educated people may be more selective of information that conforms with their beliefs and be more certain that the information they find is accurate by virtue of their educational attainment (Drummond & Fischhoff, 2017). Both the indirect and direct effects of education on affective polarization necessitate its inclusion as a control variable.

While the wealthy and well-educated may be more polarized due to their strong interest and participation in politics, lower-class individuals may be polarized as a consequence of disenfranchisement by the political system. Specifically, people who are unemployed or are low income may be manipulated more easily by politicians who take advantage of their financial weaknesses. For example, right-wing populism has been increasing in the United States and is linked to rhetoric that frames poor, white populations as victims of migrants stealing jobs and increasing social welfare programs for minorities (Greven 2016). Conveniently, the right connects these grievances to the Democratic party and their initiatives for welfare and social justice. Images like the ‘Welfare queen’ stereotype create images of a corrupt liberal wing of U.S. politics taking money from the poor and hardworking and giving it to minorities who are taking advantage of a system (Demby, 2013). Individuals who are white and unemployed are the

targets of this rhetoric and may be affectively polarized due to this narrative. Employment controls for the spread of populist sentiments as a medium for polarization.

### *Social Media*

Social media use is a variable not accounted for in the news readership portion of the ANES but is important to control for due to its increasing popularity as a news source. Numerous studies have been conducted on the relationship between social media and affective polarization; while it appears that polarization may lead to increased social media usage and not vice versa, there is a positive correlation between social media use for political news and one's level of affective polarization (Nordbrandt, 2021; Rojas & Yamamoto, 2021). Different social media platforms also have differing effects on affective polarization, but the one that is often cited to have the greatest effect on polarizing the public is Twitter (Yarchi, Baden & Kligler-Vilenchik, 2020). Given this information, I created two separate models controlling for social media: One with general social media usage and one controlling for the frequency of Twitter use. The separation of these two variables is to prevent high levels of collinearity.

## Chapter 3 Hypotheses

Drawing from the literature review, this thesis seeks to investigate three sets of hypotheses. The first set ( $H_1$ ) aims to replicate the results of previous studies on how empathy relates to affective polarization. Due to the mixed literature on the directional relationship of empathy, there are two sub-hypotheses in  $H_1$  accounting for both instances.  $H_2$  is derived from the understanding that news sources can either reduce or increase an individual's affective polarization, depending on whether selective exposure or counter-attitudinal perspective-taking is stronger. Finally,  $H_3$  is the primary hypothesis of interest: The interactive effect of empathy and news readership on affective polarization. I have listed these hypotheses below:

*H1.1: Greater levels of empathy are likely to correspond to higher levels of affective polarization in individuals.*

*H1.2: Greater levels of empathy is likely to correspond to lower levels of affective polarization in individuals.*

*H2.1: An exposure to a diverse set of news sources is likely to decrease an individual's level of affective polarization.*

*H2.2: An exposure to a diverse set of news sources is likely to increase an individual's level of affective polarization.*

*H3: The interaction of higher empathy levels and higher news engagement is likely to have a multiplicative effect on reducing affective polarization.*

## Chapter 4 Methods

### Data

To test my hypotheses, I used the 2020 American National Electorate Study (ANES) Time Series Study; a national U.S. study on electorate trends that has been regularly conducted on American citizens since 1948.<sup>1</sup> The 2020 ANES dataset contains pre-election responses from 8,280 Americans spanning the topics of electoral behavior, political participation, and public opinion. In some cases, a single variable from the ANES was not sufficient for proper analysis of the impact of that variable in the overall model. In these cases, multiple questions from the ANES were consolidated and/or transformed to accurately describe the model. I provide the rationale for these cases in the variable discussion below.

### Model

To measure the effect of empathy and news readership on affective polarization, I require a model that explains the effect of a unit change of the explanatory variables on the response variable. Hence, I chose to use a multiple regression which identifies relationships between variables by searching for general patterns that relate to unit changes of those variables. Additionally, a multiple regression allows me to add additional variables into the analysis to control for exogenous variation that is evidenced to be salient in affective polarization, such as gender, race, and income. The unit of analysis of this experiment is individuals in the U.S. electorate, which is appropriate as affective polarization reflects an individual's polarization towards opposing political parties due to political party being one of their salient social identities. Additional variables in the model include regressors highly

---

<sup>1</sup> <https://electionstudies.org/about-us/history/>

correlated with social identity theory as addressed in the literature review. Notably, I chose to create two different models based on the two different measures of social media as explained in the literature review: The first model regresses affective polarization on the control variable of using any form of social media listed in the ANES, while the second model regresses affective polarization on the frequency of Twitter Use by a respondent. This variable is listed as b11.1 and b11.2 in the models below. Below is the complete model, wherein affective polarization is a function of empathy, diversity of news readership, and an interaction variable between empathy and diversity of news readership.

### **Model 1**

$$\begin{aligned} \text{Affective Polarization} = & \text{Intercept} - b1 (\text{Empathy}) + b2 (\text{Diversity in} \\ & \text{News Readership}) + b3 (\text{Empathy} * \text{Diversity in News Readership}) + \text{control} \\ & \text{variables } [-b4 (\text{White}) - b5 (\text{Male}) + b6 (\text{Education}) + b7 (\text{Income}) + b8 \\ & (\text{Political participation}) + b9 (\text{Employment}) - b10 (\text{Partisanship}) + b11.1 (\text{Social} \\ & \text{media use})] \end{aligned}$$

### **Model 2**

$$\begin{aligned} \text{Affective Polarization} = & \text{Intercept} - b1 (\text{Empathy}) + b2 (\text{Diversity in} \\ & \text{News Readership}) + b3 (\text{Empathy} * \text{Diversity in News Readership}) + \text{control} \\ & \text{variables } [-b4 (\text{White}) - b5 (\text{Male}) + b6 (\text{Education}) + b7 (\text{Income}) + b8 \\ & (\text{Political participation}) + b9 (\text{Employment}) - b10 (\text{Partisanship}) + b11.2 \\ & (\text{Frequency of Twitter Use})] \end{aligned}$$

## **Variable Creation**

Several variables within this model could not be found directly within the ANES database and were, instead, created by consolidating and recoding multiple variables from the survey into a new variable. This section covers the creation of these variables as well as the underlying theory used to justify their creation. The table below shows the summary statistics of the variables, while density graphs can be found in Appendix B.

**Table 1: Summary Statistics of Variables**

<b>Descriptive Statistics</b>					
<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>Standard Deviation</b>
Polarization	5.64	6	0	10	3.2
Empathy	3.47	3.57	1	5	0.78
News Readership	5.95	4	0	50	5.75
Empathy x News Readership	21.64	15	0	150.857	22.35
Participation	1.92	1	0	12	2.29
Education	3.387	3	1	5	1.11
Partisanship	2.988	3	1	4	1.07
Male	0.46	0	0	1	0.5
White	0.754	1	0	1	0.43
Employment	0.67	1	0	1	0.47
Social Media	0.91	1	0	1	0.28
Twitter Usage	2	1	1	8	1.9



In order to capture the intensity affective polarization within respondents, I replicated the method of measuring affective polarization taken by Simas et al., creating a variable from the absolute difference in feeling thermometer values of each respondent regarding their feeling towards the democratic party and the republican party (2019). This variable was created by modifying two variables from the ANES: Two feeling thermometers that measure the individual's dislike for the Democratic/Republican parties on a scale of 0-10, with 0 being strongly dislike and 10 being strongly like. In turn, this measures the strength of the difference in feelings one exhibits towards the two parties. An individual who strongly favors one party but dislikes the other party would register as a high number, which indicates high polarization, while someone who either greatly likes or greatly dislikes both parties would register as a low number. For this study, I assume equally strong positive feelings for both parties reflect minimal levels of polarization, while equally strong negative feelings for both parties likely reflect disillusionment with politics, hence political affiliation likely not being a salient social identity for that individual. Therefore, either extreme can be considered non-polarized and will show up as a low number in the data. Notably, the boxplot of the affective polarization variable (Appendix B) shows a bimodal distribution of responses, indicating that respondents tend to feel that they are either extremely polarized or neutral. This explains the high standard deviation (3.2) of the polarization variable, compared to the variable's range of 10.

Empathy is often measured through surveys that include a battery of questions that appeal to an individual's different empathic cognitive functions. One of the most commonly referenced and validated empathy surveys is the Interpersonal Reactivity Index (IRI). The IRI is a 28-item questionnaire that measures an individual's propensity for empathy along four sub-scores: empathic concern, perspective-taking, personal distress, and fantasy (Davis, 1983). For my

thesis, the two areas of interest in measuring empathy are empathic concern and perspective-taking, which are also the ones most likely to be related to direct empathic behavior (Baron-Cohen & Wheelwright, 2004). Using the IRI as a model, I drew questions from the ANES that strongly reflected perspective-taking or empathic concern and averaged their scores to create an Empathy measure. While I have no direct evidence in this data that these scores are significantly correlated with the IRI, these questions are explicitly referred to as Empathy in the ANES by existing articles (Holian & Prysby, 2014) (Laustsen, 2017). The scores for each variable were recoded with higher responses indicating greater empathy, and all were standardized to a scale of 1-5. The questions used to create this variable can be found in Appendix A. The distribution of scores indicates that individuals tend to rank themselves with a high empathy score, with a mean response of 3.47 and a standard deviation of 0.78.

**Table 2: Correlation matrix between empathy variables**

	<b>Support Welfare</b>	<b>Support aid to poor</b>	<b>Ensure society success</b>	<b>Inequality not a big deal</b>	<b>Fewer problems if more equality</b>	<b>Self-control of harmful speech</b>
<b>Support Welfare</b>	1.000	0.591	0.291	0.318	0.375	-0.097
<b>Support aid to poor</b>	0.591	1.000	0.334	0.339	0.387	-0.101
<b>Ensure society success</b>	0.291	0.334	1.000	0.375	0.461	-0.097
<b>Inequality not a big deal</b>	0.318	0.339	0.375	1.000	0.401	-0.075
<b>Fewer problems if more equality</b>	0.375	0.387	0.461	0.401	1.000	-0.106
<b>Self-control of harmful speech</b>	-0.097	-0.101	-0.097	-0.075	-0.106	1.000

Directional validity and internal consistency were tested by running a correlation matrix and performing a Cronbach's alpha test. **Table 2** above shows that all variables are directionally consistent with one another except for the variable for 'Self-control on harmful speech', which tends negative compared to the other variables and has a noticeably weak correlation. While there is no definitive explanation for this occurrence, it may be possible that individuals of the same level of empathy may interpret the question differently than others. For example, someone with high empathy may be concerned about speaking insensitively, hence may rate themselves high on the scale. At the same time, someone else may be less concerned about speaking insensitively because they know that they exhibit high levels of empathy, hence are less worried about having an incident with insensitive speech and rate themselves less worried. The Cronbach's alpha score for these questions is 0.67, which is a reasonable score for the internal validity of the relationship between these variables.

Two other variables that were created as a culmination of ANES survey responses are News Readership and Political Participation. News Readership was created by summing the binary responses from the ANES survey pertaining to the different media sources that an individual interacted with for their daily news and/or politics. Specifically, the ANES asked whether the respondent has heard about the 2020 presidential campaign from a broad selection of tv programs, newspapers, internet sites, and radio news channels. I pulled the data points for all forms of media that pertained to political news, including tabloids and multilingual news stations, and summed the values for a comprehensive value for how many different news sources an individual interacted with. The political participation variable was created in a similar manner by summing up all the binary questions in the ANES pertaining to whether the respondent had

performed various actions that would contribute meaningfully to a political campaign. I did not find it necessary to run a correlation matrix or a Cronbach's alpha test on the news readership variable as it is meant to be presented as the simple sum of all the news sources a respondent interacts with.

A majority of individuals consume a few news sources, while a few individuals consume many news sources; the news readership variable has a mean of 5.95 unique sources and a median of 4 sources. There is a strong right skew on the data shown in both the histogram and the high standard deviation (5.75). We see the same result for political participation, where there is a strong right skew, and the mean number of unique political actions performed is 1.92 while the median of unique political actions performed is 1. These results conform to the expectations that a majority of people consume political or news content as a small extension of their life, while a few individuals are deeply invested in politics.

**Table 3: Correlation Matrix of Political Participation Variables**

	Contact Congressman	Posted online about campaign	Signed petition	Attend protest	Donate to other groups	Donate to party	Donate to candidate	Work for party	Wear campaign merchandise	Attend in-person candidate events	Attend virtual candidate events	Talk about candidates
Contact Congressman	1.000	0.245	0.355	0.230	0.267	0.229	0.297	0.183	0.175	0.137	0.290	0.206
Posted online about campaign	0.245	1.000	0.361	0.198	0.153	0.131	0.204	0.110	0.228	0.151	0.256	0.284
Signed petition	0.355	0.361	1.000	0.292	0.205	0.199	0.242	0.145	0.199	0.130	0.266	0.228
Attend protest	0.230	0.198	0.292	1.000	0.185	0.107	0.182	0.155	0.189	0.288	0.255	0.151
Donate to other groups	0.267	0.153	0.205	0.185	1.000	0.283	0.341	0.211	0.141	0.103	0.274	0.147
Donate to party	0.229	0.131	0.199	0.107	0.283	1.000	0.674	0.180	0.213	0.137	0.345	0.173
Donate to candidate	0.297	0.204	0.242	0.182	0.341	0.674	1.000	0.233	0.252	0.200	0.449	0.221
Work for party	0.183	0.110	0.145	0.155	0.211	0.180	0.233	1.000	0.144	0.241	0.279	0.152
Wear campaign merchandise	0.175	0.228	0.199	0.189	0.141	0.213	0.252	0.144	1.000	0.247	0.276	0.235
Attend in-person candidate events	0.137	0.151	0.130	0.288	0.103	0.137	0.200	0.241	0.247	1.000	0.397	0.135
Attend virtual candidate events	0.290	0.256	0.266	0.255	0.274	0.345	0.449	0.279	0.276	0.397	1.000	0.231
Talk about candidates	0.206	0.184	0.228	0.151	0.147	0.173	0.221	0.152	0.235	0.135	0.231	1.000

A correlation matrix for political participation questions is presented in **Table 3** above. The results indicate that all forms of political participation are slightly, positively correlated with other forms of political participation. The Cronbach's alpha for the selected political participation variables is 0.77, indicating strong internal consistency between the variables. A full list of questions pulled from the ANES to create the news readership variable and the political participation variable can be found in List B in the supplementary materials.

The interaction term between empathy and news readership was created by multiplying the level of empathy an individual exhibits with the number of news sources that individual is exposed to. This is to investigate the existence of a multiplicative effect between empathy and readership, where the effect of empathy on polarization is conditional on an individual's breadth of news consumption. The inclusion of all three terms within the model may introduce a high level of multicollinearity, but this is to be expected with the close variation of interaction terms with their constitutive terms.

Strength of partisanship is measured through the seven-point scale for political leaning reported on the ANES. *V201231x* on the ANES is a scale that asks respondents for their party identification, ranging from 1 = strong democrat and 7 = strong republican, with 4 = independent. I recoded this variable by folding the scale in half and setting 1 = independent while 4 = strong democrat or strong republican. Hence, the scale in my thesis ranges from 1 – 4 with 1 being independent and 4 being a strong partisan. Notably, many people report being strong partisan, with a mean partisanship score of 2.988 and a median score of 3. Even so, there is a sizable number of individuals who report lower levels of partisanship as well, as seen in the box plot and the high standard deviation (1.07)

The variables for white, male, education, employment, income, social media, and Twitter use were created with simple recoding of the ANES responses. The variables of white, male, employment, and social media are binary responses where 1 indicates the presence of that characteristic in the respondent. Employment is a dummy variable capturing people who are employed, in the educational system, or both; the rationale for including current education under the employment variable is the perceived productivity of an individual as they are responding to a question, and how that may impact their relationship towards political parties. In the case of social media, 1 indicates that the individual uses any form of social media, while 0 means the individual uses no social media at all. The descriptive statistics for all four variables conform to expectations: A majority of respondents were white (0.75), there is an even distribution of men and women (Male = 0.46), A high proportion of individuals are employed or are currently in college (0.67), and an overwhelming number of individuals use some form of social media (0.91).

Education is left as-is from the ANES, with inapplicable values removed. The range of education variable is from 1 = less than a high school diploma to 5 = graduate degree. The mean education level of respondents is 3.39, corresponding to the value for 'some college education and 'college diploma'. There is a strong left skew, indicating educational outcomes of respondents tend towards some level of college education or post-graduate education. The income variable was created by taking the brackets

The variable for Twitter use was changed to include 'inapplicable' respondents in the scale as individuals who have never used Twitter. This was done for statistical consistency, as a majority of respondents do not use Twitter, so the exclusion of those individuals in the dataset and regression omits a large number of individuals. Hence, I added increased the scale from 1-7



(1 = Use Twitter multiple times every day; 7 = Use Twitter less than once a month) by one to include a value for individuals who have never used Twitter and inverted the scale so that the highest value corresponds to the most frequent Twitter users. This change introduced a strong right skew as a large number of respondents do not use Twitter. From analyzing the histogram, it appears that for those who do use Twitter, there is a high number of individuals who have used Twitter less than once a month. For respondents who use Twitter more than once a month, there appears to be an even distribution of the frequency of Twitter use.

## Chapter 5 Results

### Regression Model

**Table 4: Regression Results of Polarization by Explanatory Variables**

<b>Dependent Variable: Affective Polarization (Scale: 0-10)</b>		
<b>Variable</b>	<b>Estimate</b>	
	<b>Model 1</b>	<b>Model 2</b>
Constant	5.625***	5.627***
Empathy	-0.301***	-0.296***
News Readership	-0.394	-0.402
Empathy x News Readership	0.724**	0.743**
Participation	1.168***	1.185***
Education	-0.362***	-0.351***
Partisanship	2.809***	2.806***
Male	-0.091	-0.077
White	0.235***	0.229***
Income	-0.045	-0.039
Employment	-0.255***	-0.244***
Social Media	-0.059	
Twitter Usage		-0.147**
Total Observations	n = 6140 (2128 omitted)	n=6142 (2126 omitted)
Adjusted R-Squared	0.274	0.275
F-Statistic	p<0.01	p<0.01
Significance: * = p<0.1; ** = p<0.05; *** = p<0.01		

**Note:** All independent variables were mean standardized by two standard deviations.

Due to the variability of the different scales of variables, all input variables were mean standardized by two standard deviations before regressing for easier scaling and interpretation of the coefficients. Standardizing by two standard deviations allows for binary variables to be interpreted as such, while other variables are standardized on one scale (Gelman, 2007). This thesis uses  $p < .05$  to test for significance.

Empathy was statistically significant across both models, but news readership was not in either model. Due to the existence of the multiplicative interaction model, the individual effects of empathy and news readership can only be interpreted the pure effect of each constitutive variable, which is the effect of one variable on the dependent variable when the other variable's value is set to 0 (Brambor, Clark & Golder, 2006). Hence, the effect of a two standard deviation increase in empathy, when news readership is 0, is a 0.301-point decrease in affective polarization in model 1, and a 0.296-point decrease in affective polarization in model 2. Meanwhile, news readership was not statistically significant in either model. Both models show a statistically significant effect of the interaction term on affective polarization. In both models, the empathy x readership interaction variable is positively correlated with affective polarization, with a two standard deviation increase in the interaction between empathy and news readership corresponding to a 0.724-point increase in affective polarization for model 1 and corresponding to a 0.743-point increase in affective polarization for model 2.

Several other control variables were statistically significant in both models, including political participation, partisanship, and race. The strongest effect within these variables appears to be partisanship strength, where a two standard deviation increase in the strength of one's partisanship leads to a 2.809-point increase in one's level of affective polarization in model 1 and a 2.806-point increase in model 2. Other variables positively and significantly correlated with

affective polarization level include political participation and race. A two standard deviation increase in one's political participation corresponds to a 1.168-point increase in affective polarization in model 1 and a 1.185-point increase in model 2. Being white corresponds to a 0.234-point increase in affective polarization in model 1 and a 0.229-point increase in model 2.

Meanwhile, education, employment, and Twitter use are significantly and negatively correlated with affective polarization. A two standard deviation increase in education corresponds to a 0.362- and 0.351-point decrease in affective polarization in models 1 and 2, respectively. Being employed or being a student in college is correlated with 0.255- and 0.244-point decreases in affective polarization for model 1 and model 2, respectively. Twitter Usage was also statistically significant in model 2, where a two standard deviation increase in Twitter usage corresponds to a 0.147-point decrease in the level of affective polarization. However, there is no significant relationship between the social media control variable in model 1 and affective polarization. Income is the only other variable besides news readership that is not significantly correlated with affective polarization.

The adjusted R-Squared of both model 1 and model 2 is 0.275, which shows that 27.5% of the variation in model 1 can be explained by the regression run in my thesis. Additionally, the F-Statistic test holds a p-value of  $<0.01$  in both models, showing that the regression has correlative explanatory power.

### **Control variables in the regression model**

Political participation and partisanship being positively correlated with affective polarization are to be expected, as political elites are the ones often most invested in politics and reflect the issues of the time (Parker, 2017). Individuals who are more involved in politics, especially the campaigns and mobilization of political parties, likely subscribe to the issues and

identity of their party. At the same time, because the literature shows that America is moving towards an expressive view of politics, increased partisanship is likely to be related to increased affective polarization. Future research in affective polarization may benefit from additional research into this interaction to understand whether increased participation polarizes individuals, or if polarization pushes individuals into political participation.

Demographic indicators of race and education appear to run contrary to our expectations of affective polarization as discussed in the literature review. Increased levels of higher education appear to correlate with lower levels of affective polarization, which runs contrary to the literature suggesting that higher education can both be directly and indirectly related to increased levels of polarization. One potential reason for this coefficient running contrary to expectations is that increasing education may lead to a broader perspective of the world, which may help to increase awareness of group differences or the impact of political strategy around identity politics and therefore reduce affective polarization. However, this hypothesis has yet to be tested or has yet to garner conclusive results in academic literature. Similarly, the coefficient for white also seems to be opposite of what is expected given how strongly racial identities are tied to politics as a form of conflict extension. Instead, the regression suggests that white individuals are correlated with a higher level of affective polarization as compared to people of color.

The result on male and income are surprising given that neither variable is significant in my models, despite literature indicating both variables to be correlated with affective polarization. Gender is typically hypothesized to be a highly ideological and charged topic within politics, as well as contributes to a high degree of party sorting (Doherty, Kiley & Asheer, 2020). Of course, party sorting is not necessarily indicative of affective polarization, but nonetheless,

the expressive view of politics would support that politics is increasingly tied with identity and affective polarization. Existing literature also supports that wealthiness is related to participation in politics, which should cause income to be highly correlated to polarization due to the wealthy participating heavily in politics. However, we do not see this interaction supported in the thesis.

As expected, an increase in employment results in a decrease in affective polarization. Employment and the economy remain prime issues for both primary U.S. political parties, and the issue is likely tied to different intersectional characteristics that lead to polarization. Unemployment and social benefits have long been a platform goal for Democrats, but welfare recipients are often antagonized by Republicans and welfare-opposition as being “welfare queens” (Demby, 2013). Meanwhile, conservatives hold a strong rural, poor white voter base that may be susceptible to right-wing propaganda and populism—as seen from the tactics used by Donald Trump to mobilize voters in the 2016 election (Greven, 2016). It stands to reason that the unemployed with either political party may harbor resentment towards the other. The effect of employment on polarization is nuanced from the effect of income and wealth, as the employment variable seeks to capture the effect of populist propaganda on the American public, while income attempts to capture the effect of wealth or class on political participation.

Finally, the directionality of social media usage is consistent with existing literature, while Twitter usage appears to have an effect opposite to what was hypothesized. While social media is hypothesized to host “echo chambers” and increase affective polarization, research shows that social media can lead to polarization when the primary purpose is to seek attention and incite political responses (Twitter) but lead to depolarization if the service is used as a means of messaging and deliberating on issues (WhatsApp) (Yarchi, Baden, Kligler-Vilenchik (2020)). Because the ANES uses a variety of social media platforms that encompass polarizing

applications like Twitter and Facebook, but also longer-form social media applications like Reddit and YouTube the effects of polarization could be canceled out across the two different categories of social media applications, hence leading to no significant relationship between whether one uses social media platforms indicated on the ANES and their level of affective polarization. On the other hand, the results indicate that an increase in the frequency of Twitter use correlates with lower levels of affective polarization, which is puzzling given the strong positive correlation between affective polarization and Twitter found in Yarchi et al. A potential explanation for this conflicting result is that individuals who use Twitter most frequently do so as a source of entertainment beyond politics, hence are not as impacted by polarizing news, though more research is needed to confirm this hypothesis.

## Chapter 6 Discussion

### Empathy and news readership regression model

In both regression models, an increase in empathy is correlated with a decrease in affective polarization, indicating responders to the ANES who exhibit higher levels of empathy also appear to have lower levels of affective polarization. While this is in line with the notion that an increase in empathy results in a decrease of affective polarization, the correlation contrasts with Simas' findings that higher empathy leads to higher affective polarization. Potential sources for this discrepancy could be a difference in the survey group, as well as differences in the creation and interpretation of the empathy variable. For one, Simas' experiment gathered responses from a YouGov poll in 2016, which may result in more polarizing responses given that the survey was distributed during an election year than the ANES survey taken in 2020. In both instances, selection bias may also take effect as the Simas survey was an opt-in panel, and multiple questions in the ANES can be optional or skipped by respondents. Simas & Clifford also use a much more comprehensive empathy value for their study in running a survey experiment using the questions from the Interpersonal Reactivity Index (IRI), a widely cited index for measuring empathy across multiple dimensions (Simas, 2019). In contrast, this thesis pulled data from the ANES to create the empathy battery, and the questions used are assumed to be correlated with empathy but there is no way to externally validate this assumption.

News readership is not significantly related to affective polarization, which is surprising given the literature on how news is a significant medium of which individuals can be either polarized or depolarized. Additionally, the news sources used in the ANES include potentially polarizing sources, such as liberal and conservative talk shows, as well as news channels with



heavy political affiliation like Fox News and CNN (ANES, 2020). However, the interaction between empathy and political polarization runs contrary to our hypothesis that empathy and news readership would reduce affective polarization. This could be due to the fact that I did not have a method to control for the type of news media an individual consumes, so someone who reads multiple news sources could be feeding into their polarization by reading sources that reinforce their existing worldview. Existing literature points to political elites being more polarized, hence news readership could be a proxy for some form of political elitism that could not be controlled for with the political participation variable (Parker, 2017). Future research could investigate a similar question while controlling for the partisanship bias of news sources to see if individuals who consume news from all different political perspectives result in lower levels of polarization.

### **Limitations and additional considerations**

There are a few considerations regarding the validity and generalizability of this thesis. Most importantly, many of the variables created are based on assumptions garnered from current literature and are not externally validated. For example, the empathy score was created from questions taken from the ‘Egalitarian’ section of the ANES, and the direct relationship between these questions and the true empathy score of an individual on a validated empathy test (such as the IRI) is unclear. I assume that these questions are suitably reflective of traits important for the perspective-taking view of empathy, but an experiment in which the IRI, Empathy Quotient, or another cross-validated empathy test would find more accurate results. Similarly, the variable for news readership was created with the news sources that were provided by the ANES and may not encompass all of the news sources that individuals consume in the United States. These

differences in measurement due to self-created variables could account for the coefficients contradicting existing literature.

One potential explanation for the mixed results across papers that attempt to characterize the relationship between empathy and affective polarization is misspecification of the relationship between empathy and affective polarization. To explore the relationship between empathy and polarization as described in hypothesis 1, I created a scatterplot with a smoothed line of best fit, as seen in Figure 1 in the supplementary materials. Due to the discrete nature of the polarization variable, it was difficult to identify trends in the data. However, the smoothed line appears to reflect a U-shaped relationship between an individual's empathy score and their level of polarization. I then created a boxplot with the same data to reduce the effect of overplotting for clearer analysis, which can be seen in Figure 2.

The boxplot better reflects the relationship shown in the smoothed scatterplot, with individuals at either end of the empathy scale exhibiting the most polarized responses and displaying a dip in polarization score in the middle of the empathy scale. This is also consistent with the descriptive statistics that show that polarization has a bimodal distribution where individuals are either extremely polarized or not polarized. This U-shaped relationship could potentially confound the interpretation of statistical analysis, where a transformation of the polarization variable may yield more effective results. Additionally, this may also bring into consideration errors where a study, survey, or experiment only captures the lower half versus the higher half of the affective polarization graph, contingent on the sample of data and the way respondents are primed: if, for some reason, a study only captures the individuals with low or medium levels of polarization, the results could show a strong, negative correlation between empathy and affective polarization. However, if the study only captures individuals with higher

levels of affective polarization, the study may find results suggesting that increased levels of empathy leads to greater polarization.

Another consideration to be made is the significance and interpretation of the news readership variable. The variable was created by summing up all of the news sources that an individual reported consuming when responding to the ANES, but I did not have a method of controlling for the political bias of each type of news consumed. Instead, I assume that seeking out multiple news sources actively is a proxy for an individual who is willing to understand issues from different perspectives. However, there may be a fundamental difference between an individual who consumes multiple news sources that reinforces their perspective, versus an individual who consumed news sources across a political spectrum to be well versed on how different communities perceive an issue. Additionally, confirmation bias may pose an additional error when considering individuals who seek out opposing news sources, as they might do so with the goal of discrediting opposing views to reinforce their own. If this study were to be replicated, it is paramount to have a measure that not only considers how many news sources one consumes but also the extent to which the news sources contrast one another on the political spectrum.

## Chapter 7 Conclusion

The steady increase of effective polarization in recent decades remains a pressing concern to the health and longevity of the United States' democratic system. As such, social scientists have taken an interest in discovering what attributes embed affective polarization into our political system, and what mechanisms can be used to reduce affective polarization in society. Empathy has long been thought to reduce levels of polarization through perspective-taking of opposing ideologies, but social scientists have also shown that empathy can be used to increase polarization under specific conditions. This thesis attempts to further nuance the discussion on the impact of empathy on affective polarization by introducing diversity of news readership as an interactive term with empathy.

The results indicate that the interaction between empathy and the diversity of news consumption is significantly correlated with an increase in affective polarization, while empathy, as an isolated variable, has a negative relationship with affective polarization. The explanatory power of this model of course has limitations; while the sample was nationally representative, and the political polarization and other variables are well tested, the study relied on a proxy variable for empathy versus a measure specifically designed to capture it. Additionally, while this thesis provides support for the hypothesis that an increase in empathy is correlated with a decrease in affective polarization, there still remains the question of why empathy in specific contexts can lead to an increase in affective polarization.

Future studies may build upon this thesis by creating an original survey that provides responses more closely reflecting the intended concepts from this thesis' proxy variables. Additionally, the news consumption variable could be controlled for political diversity rather than the number of unique news sources read. It is crucial that further research also dives into

other potential variables that interact with empathy, as there may be levers beyond diversity of news consumption that directly alter how empathy reacts to levels of affective polarization.

## Chapter 8 Supplementary Materials

### Appendix A

Questions used to create empathy and political participation variables

**List of ANES questions used to form empathy variable [Including shortened names in correlation matrix]**

V201312: What about welfare programs? Should federal spending on welfare programs be increased, decreased, or kept the same? [Support Welfare]

V201318: What about aid to the poor? Should federal spending on aid to the poor be increased, decreased, or kept the same? [Support aid to poor]

V202260: Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed. [Ensure society success]

V202262: It is not really that big a problem if some people have more of a chance in life than others. [Inequality not a big deal]

V202263: If people were treated more equally in this country, we would have many fewer problems. [Fewer problems if more equality]

V201627: How often do you stop yourself from saying something because you think someone might call you a racist, a sexist, or otherwise a bad person? [Self-control of harmful speech]

**List of ANES questions used to form political participation variable [Including shortened names in correlation matrix]**

V202009: During the campaign, did you talk to any people and try to show them why they should vote for or against one of the parties or candidates? [Talk about candidates]

V202013: Did you participate in any online political meetings, rallies, speeches, fundraisers, or things like that in support of a particular candidate? [Attend virtual candidate events]

V202014: Did you go to any political meetings, rallies, speeches, dinners, or things like that in support of a particular candidate? [Attend in-person candidate events]

V202015: Did you wear a campaign button, put a campaign sticker on your car, or place a sign in your window or in front of your house? [Wear campaign merch]

V202016: Did you do any other work for one of the parties or candidates? [Work for party]

V202017: During an election year people are often asked to make a contribution to support campaigns. Did you give money to an individual candidate running for public office? [Donate to candidate]

V202019: Did you give money to a political party during this election year? [Donate to party]

V202021: Did you give any money to any other group that supported or opposed candidates? [Donate to other groups]

V202025: During the past 12 months, have you joined in a protest march, rally, or demonstration, or have you not done this in the past 12 months? [Attend protest]

V202026: During the past 12 months, have you signed a petition on the Internet or on paper about a political or social issue, or have you not done this in the past 12 months? [Signed petition]

V202029: During the past 12 months, have you posted a message or comment online about a political issue or campaign, or have you not done this in the past 12 months? [Posted online about campaign]

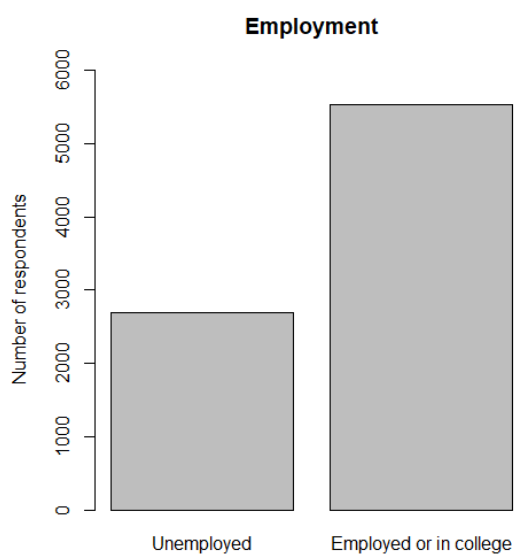
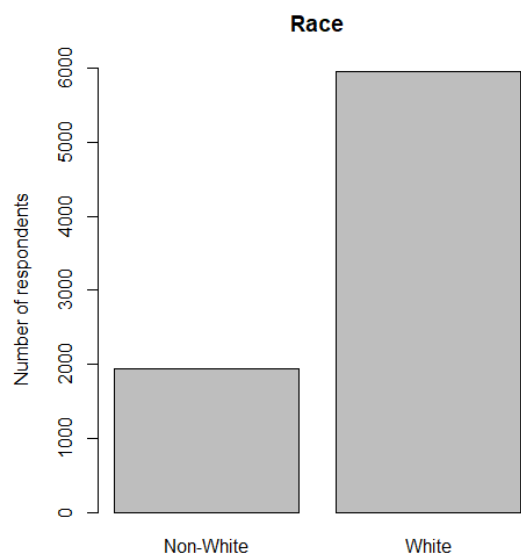
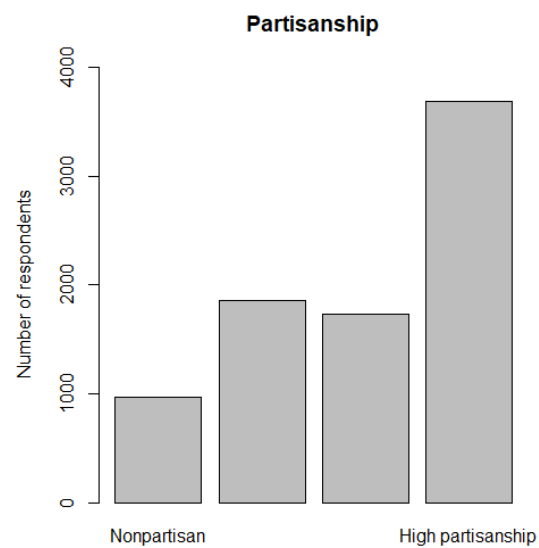
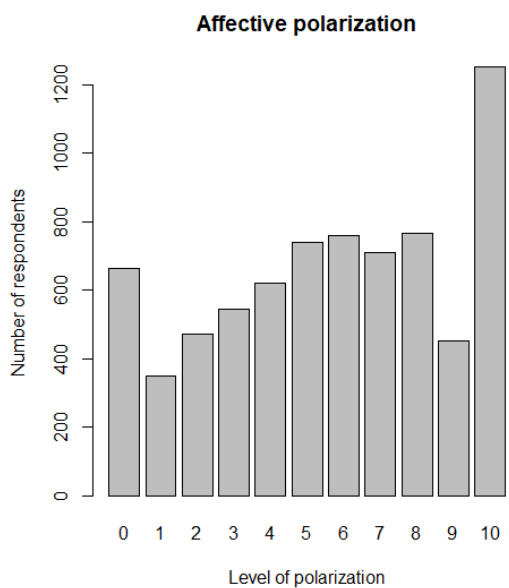
V202030: During the past 12 months, have you contacted or tried to contact a member of the U.S. Senate or U.S. House of Representatives, or have you not done this in the past 12 months?

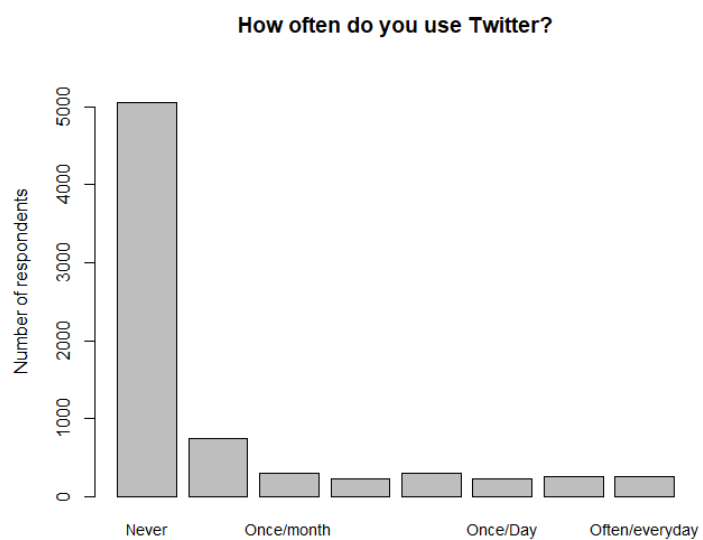
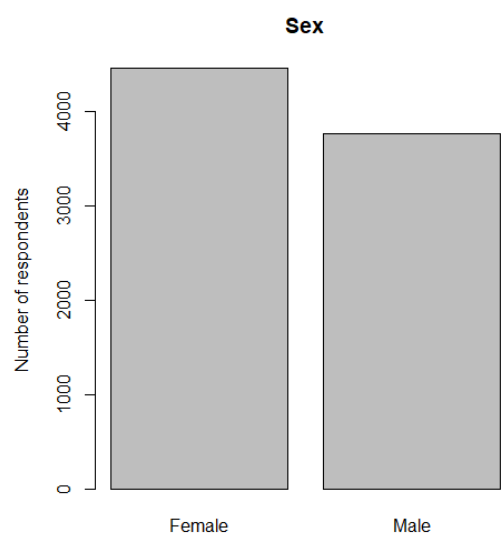
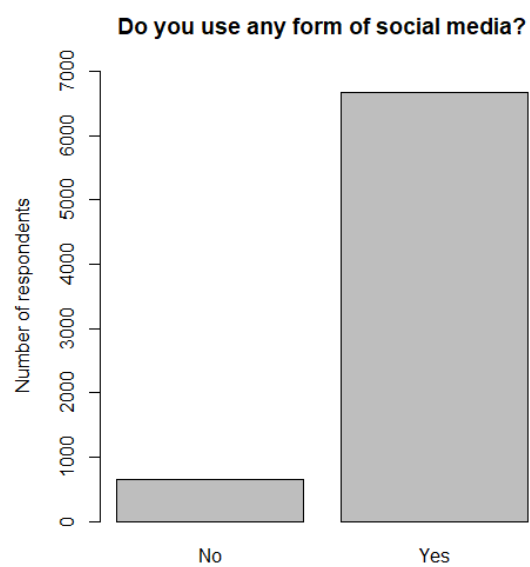
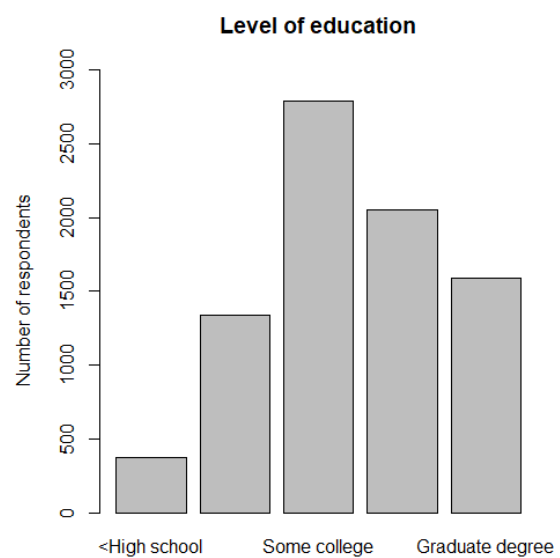
[Contact congressman]



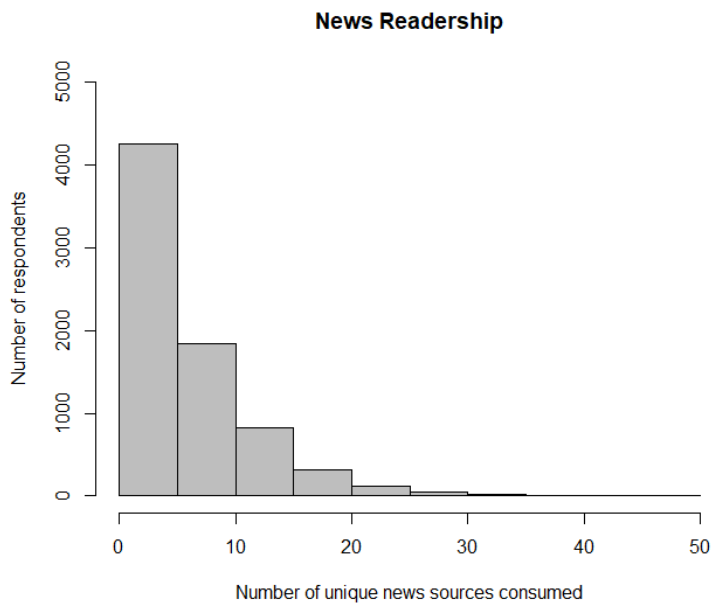
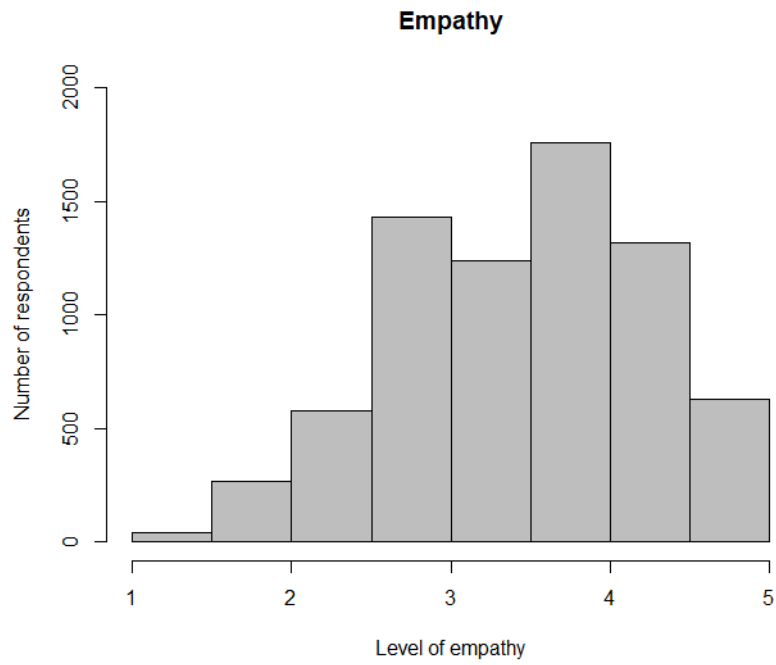
## Appendix B

## Distribution of Variables – Box plots

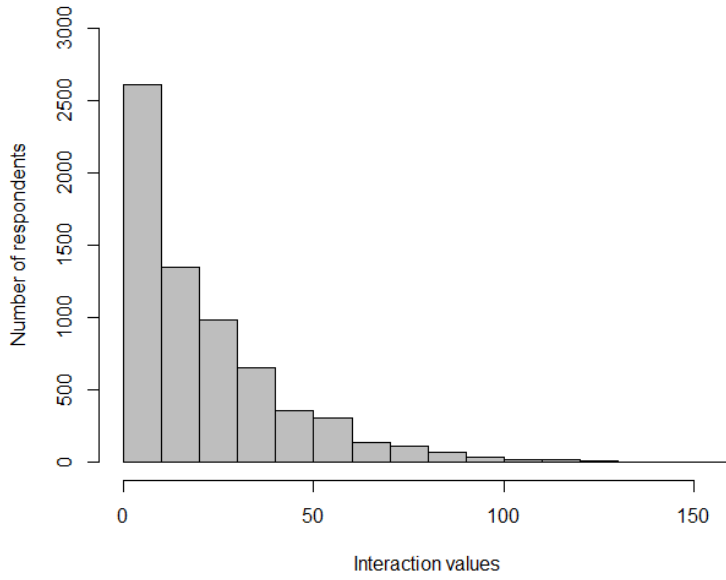




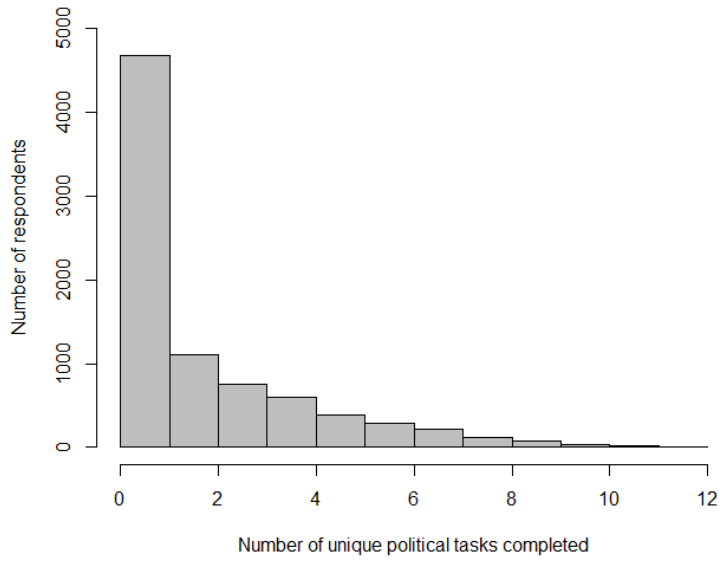
## Distribution of Variables: Histograms

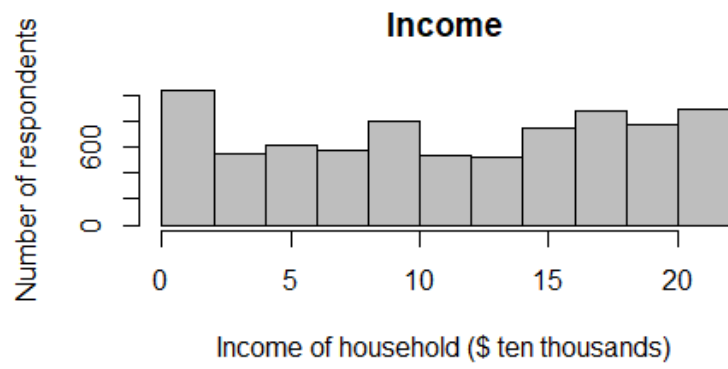


### Empathy x Readership Interaction



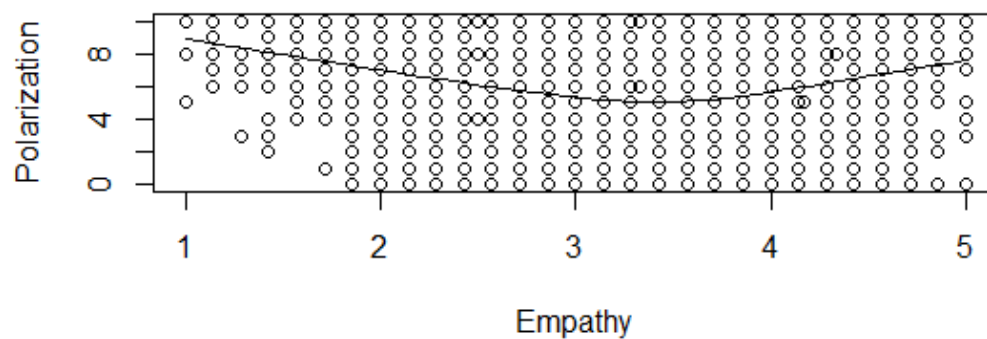
### Level of political participation



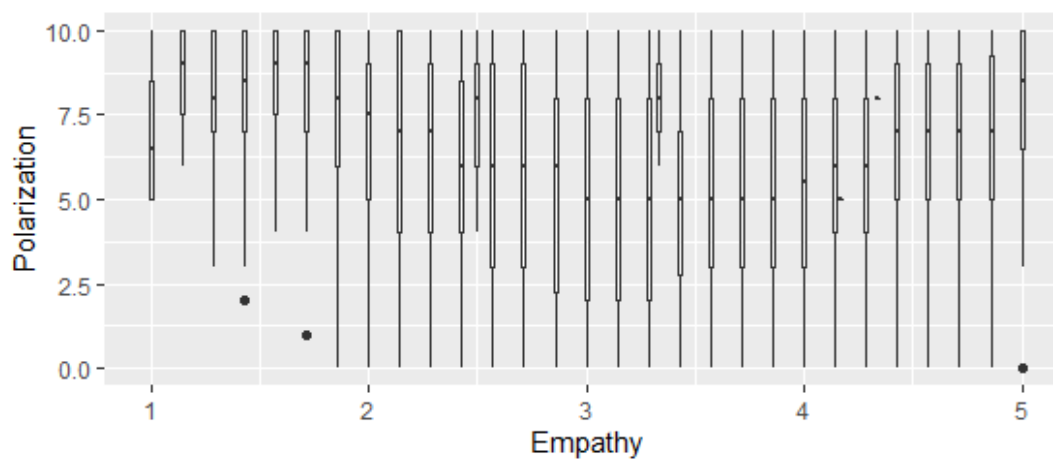


## Empathy Correlation with Affective Polarization

**Figure 1:** Scatterplot of Empathy Score and Level of Affective Polarization



**Figure 2:** Boxplot of Empathy Score and Level of Affective Polarization



## References

- Abrams, S. J. & Khalid, A. (2020). Are colleges and universities too liberal? What the research says about the political composition of campuses and campus climate. American Enterprise Institute. <https://www.aei.org/articles/are-colleges-and-universities-too-liberal-what-the-research-says-about-the-political-composition-of-campuses-and-campus-climate/>.
- Adams, J., Ezrow, L., & Somer-Topcu, Z. (2011). Is anybody listening? Evidence that voters do not respond to European parties' policy statements during elections. *American Journal of Political Science*, 55(2), 370–382.
- Bacon Jr. P. (2019). Is Trump's Use Of Identity Politics An Effective Strategy? FiveThirtyEight. ABC News Internet Ventures. <https://fivethirtyeight.com/features/is-trumps-use-of-white-identity-politics-strategic/>.
- Baldassarri, D., & Gelman, A. (2008). Partisans without constraint: Political polarization and trends in American public opinion. *American Journal of Sociology*, 114(2), 408-446.
- Banda, K. K. & Cluverius, J. (2018). Elite polarization, party extremity, and affective polarization. *Electoral Studies*. 90-101
- Baron-Cohen, S. & Wheelwright, S. (2004). The Empathy Quotient: An Investigation of Adults with Asperger Syndrome or High Functioning Autism, and Normal Sex Differences. *Journal of Autism and Developmental Disorders*. 34 (2). 163-175.
- Barroso, A. (2020). Key takeaways on Americans' views on gender equality a century after U.S. women gained the right to vote. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/08/13/key-takeaways-on-americans-views-on-gender-equality-a-century-after-u-s-women-gained-the-right-to-vote/>.

- Berinsky, A. J. & Lenz, G. S. (2011). Education and Political Participation: Exploring the Causal Link. *Political Behavior*. 33. 357-373.
- Boxell, L., Gentzkow, M. & Shapiro, J. M. (2021). Cross-Country Trends in Affective Polarization. National Bureau of Economic Research. Working Paper 26669. [https://www.nber.org/system/files/working\\_papers/w26669/w26669.pdf](https://www.nber.org/system/files/working_papers/w26669/w26669.pdf).
- Cameron, C. D. (2018). Motivating empathy: Three methodological recommendations for mapping empathy. *Social and Personality Psychology Compass*.
- Cameron, C. D., Harris, L. T., & Payne, B. K. (2015). The Emotional Cost of Humanity: Anticipated Exhaustion Motivates Dehumanization of Stigmatized Targets. *Social Psychological and Personality Science*. 105-112.
- Davis, M. H. (1983). Measuring Individual Differences in Empathy: Evidence for a Multidimensional Approach. *Journal of Personality and Social Psychology*. 44 (1). 113-126.
- Decety, J. & Cowell, J. M. (2014). Friends or Foes: Is Empathy Necessary for Moral Behavior? *Perspectives on Psychological Science*. 525-537.
- Demby, G. (2013). The Truth Behind The Lies Of The Original ‘Welfare Queen’. NPR. <https://www.npr.org/sections/codeswitch/2013/12/20/255819681/the-truth-behind-the-lies-of-the-original-welfare-queen>.
- Dimock, M., Doherty, C., Kiley, J. & Oates, R. (2014). Political Polarization in the American Public. Pew Research Center. <https://assets.pewresearch.org/wp-content/uploads/sites/5/2014/06/6-12-2014-Political-Polarization-Release.pdf>.
- Doherty, C., Kiley, J. & Asheer, N. (2020). In Changing U.S. Electorate, Race and Education Remain Stark Dividing Lines. Pew Research Center.



<https://www.pewresearch.org/politics/2020/06/02/in-changing-u-s-electorate-race-and-education-remain-stark-dividing-lines/>.

Druckman, J.N., Klar, S., Krupnikov, Y., Levendusky, M. & Ryan, J. B. (2021). How Affective Polarization Shapes Americans' Political Beliefs: A Study of Response to the COVID-19 Pandemic. *Journal of Experimental Political Science*. 8. 223-234.

Drummond, C., & Fischhoff, B. (2017). Individuals with greater science literacy and education have more polarized beliefs on controversial science topics. *Proceedings of the National Academy of Sciences*, 114(36), 9587-9592.

Edwards-Levy, A. (2018). Most Americans Don't Feel Well-Represented By Congress.

HuffPost. [https://www.huffpost.com/entry/congress-americans-representation\\_n\\_5c10244fe4b00e17a533c813](https://www.huffpost.com/entry/congress-americans-representation_n_5c10244fe4b00e17a533c813)

Fiorina, M. P. & Abrams, S. J. (2008). Political Polarization in the American Public. *Annual Review of Political Science*. 11. 563-588.

Fernandez-Vazquez, P. (2014). And yet it moves the effect of election platforms on party policy images. *Comparative Political Studies*, 47(14). 1919–1944.

Brambor, T., Clark, W. R. & Golder, M. Understanding Interaction Models: Improving Empirical Analyses. *Political Analysis*. (14). 63-82

Gelman, A. (2007). Scaling regression inputs by dividing by two standard deviations. *Statistics in Medicine*. 27(15). 2865-2873.

Green, D., Palmquist, B., & Schickler, E. (2002). *Partisan hearts and minds: Political parties and the social identity of voters*. New Haven, CT: Yale University Press.

Greven, T. (2016). *The Rise of Right-wing Populism in Europe and the United States*. Friedrich Ebert Stiftung. <https://library.fes.de/pdf-files/id/12892.pdf>.

- Hassel, J. (2021). Penn State students condemn message of Milo Yiannopoulos' 'Pray the Gay Away' event. Daily Collegian. [https://www.collegian.psu.edu/news/campus/penn-state-students-condemn-message-of-milo-yiannopoulos-pray-the-gay-away-event/article\\_dd2c6864-3c31-11ec-84ec-8f38e9df8c30.html](https://www.collegian.psu.edu/news/campus/penn-state-students-condemn-message-of-milo-yiannopoulos-pray-the-gay-away-event/article_dd2c6864-3c31-11ec-84ec-8f38e9df8c30.html).
- Hasson, Y., Tamir, M., Brahms, K. S., Cohrs, J. C., & Halperin, E. (2018). Are Liberals and Conservatives Equally Motivated to Feel Empathy Toward Others? *Personality and Social Psychology Bulletin*, 1449-1459.
- Holian, D. B., & Prysby, C. (2014). Candidate character traits in the 2012 presidential election. *Presidential Studies Quarterly*, 44(3), 484-505.
- Horowitz, J. M. & Igielnik, R. (2020). A Century After Women Gained the Right To Vote, Majority of Americans See Work To Do on Gender Equality. Pew Research Center. <https://www.pewresearch.org/social-trends/2020/07/07/a-century-after-women-gained-the-right-to-vote-majority-of-americans-see-work-to-do-on-gender-equality/>.
- Huddy, L., & Bankert, A. (2021). Political Partisanship as a Social Identity. *Oxford Research Encyclopedia of Politics*.
- Huddy, L., Mason, L. & Aarøe, L. (2015). Expressive Partisanship: Campaign Involvement, Political Emotion, and Partisan Identity. *American Political Science Association*. (109). 1091. <https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-250>.
- Iyengar, S., Lelkes, Y., Levendusky, M., Malhotra, N. & Westwood, S. J. (2019). The Origins and Consequences of Affective Polarization in the United States. *Annual Review of Political Science*. 129-146.

- Iyengar, S., Sood, G. & Lelkes, Y. (2012). Affect, Not Ideology: A Social Identity Perspective on Polarization. *Public Opinion Quarterly*. 405-431.
- Iyengar, S. & Westwood, S.J. (2015). Fear and loathing across party lines: new evidence on group polarization. *Am. J. Political Sci.* 59(3): 690–707
- Kam, C. D. & Palmer, C. L. (2008). Reconsidering the Effects of Education on Political Participation. *The Journal of Politics*. 70(3). 612-631.
- Laustsen, L. (2017). Choosing the right candidate: Observational and experimental evidence that conservatives and liberals prefer powerful and warm candidate personalities, respectively. *Political Behavior*, 39(4), 883-908.
- Layman, G. C., Carsey, T., & Horowitz, J. M. (2006). Party Polarization in American Politics: Characteristics, Causes, and Consequences. *Annual Review of Political Science*.
- Lee, S., Rojas, H. & Yamamoto, M. (2021). Social Media, Messaging Apps, and Affective Polarization in the United States and Japan. *Mass Communication and Society*.
- Mason, L. (2016). A Cross-Cutting Calm: How Social Sorting Drives Affective Polarization. *Public Opinion Quarterly*. 351-377.
- Manning, J. E. (2017). Membership of the 115th Congress: A Profile. Congressional Research Service.  
[https://ecommons.cornell.edu/bitstream/handle/1813/77752/CRS\\_Membership\\_of\\_the\\_115th\\_Congress.pdf?](https://ecommons.cornell.edu/bitstream/handle/1813/77752/CRS_Membership_of_the_115th_Congress.pdf?)
- Miller, Meg. (2017). The Story Behind “I’m With Her”. *Fast Company*.  
<https://www.fastcompany.com/90109190/the-story-behind-im-with-her>.
- Najle, M. & Jones, R. P. (2019). American Democracy in Crisis: The Fate of Pluralism in a Divided Nation. PRRI.

- Nordbrandt, M. (2021). Affective Polarization in the digital age: Testing the direction of the relationship between social media and users' feelings for out-group parties. *New Media & Society*.
- Parker, C. B. (2017). Politicians more polarized than voters, Stanford political scientist finds. *Stanford News Service*. Stanford University. 30.
- Prior, M. (2013). Media and Political Polarization. *Annual Review of Political Science*. 101-127.
- Rogowski, J. C. & Sutherland, J. L. (2015). How Ideology Fuels Affective Polarization. *Political Behavior*. 485-508.
- Simas, E. H., Clifford, S., & Kirkland, J. H. (2019). How Empathic Concern Fuels Political Polarization. *American Political Science Review*, 258-269.
- Stephan, W. G., & Finlay, K. (1999). The Role of Empathy in Improving Intergroup Relations. *Journal of Social Issues*, 729-743.
- Tajfel, H., & Turner, J.C. (1985). The Social Identity Theory of Intergroup Behaviour. In: Worchel, S. and Austin, W.G., Eds., *Psychology of Intergroup Relations*, 2nd Edition, Nelson Hall, Chicago, 7-24.
- Waytz, E. et al. (2016). Chapter 3 of *Social Psychology of Political Polarization*. Routledge. <https://doi.org/10.4324/9781315644387>
- Westby, Kiri. (2017). What Does It Really Mean To Say 'I'm With Her?'. HuffPost. [https://www.huffpost.com/entry/what-does-it-really-mean-3\\_b\\_11047690](https://www.huffpost.com/entry/what-does-it-really-mean-3_b_11047690).
- White, I. K. & Laird, C. N. (2020) *Why are Blacks Democrats?* Princeton University Press. <https://press.princeton.edu/ideas/why-are-blacks-democrats>.

Wojcieszak, M. & Garrett, R. K. (2018). Social Identity, Selective Exposure, and Affective Polarization: How Priming National Identity Shapes Attitudes Toward Immigrants Via News Selection. *Human Communication Research*. 44.

Yarchi, M., Baden, C. & Kliger-Vilenchik, N. (2020). Political Polarization on the Digital Sphere: A Cross-platform, Over-time Analysis of Interactional, Positional, and Affective Polarization on Social Media. *Political Communication*. 1(2). 98-139.

## ACADEMIC VITA

### EDUCATION

---

**The Pennsylvania State University, School of International Affairs** **University Park, PA**  
*Master of International Affairs* *Expected Graduation 2022*

Enrolled in the Integrated Undergraduate-Graduate (IUG) Program, completing degrees concurrently.

Coursework: Diplomacy and international relations theory, international economics, globalization, research design, international technology policy, international legal frameworks, multi-sector quantitative analysis.

**The Pennsylvania State University, College of the Liberal Arts** **University Park, PA**  
*Bachelor of Arts, Political Science* *Expected Graduation 2022*

Enrolled in the Bachelor of Arts program in political science. Enrolled in the Schreyer Honors College as well as the Paterno Fellows liberal arts honors program.

Coursework: Political psychology, comparative politics, political strategy/game theory, quantitative political analysis, gender and politics, intermediate heritage Chinese.

**The Pennsylvania State University, College of the Liberal Arts** **University Park, PA**  
*Bachelor of Science, Economics* *Expected Graduation 2022*

Enrolled in the Bachelor of Science in economics as a concurrent major.

Coursework: Intermediate microeconomics, intermediate macroeconomics, econometrics, urban economics, industrial economics, economics of law and regulation, economics of climate change, introductory Python 3, statistics, calculus.

### WORK EXPERIENCE

---

**Eurasia Group** **New York, NY**  
*Intern, Geostrategy Team* *July 2021 – September 2021*

- Led a project gathering country-level data in Excel to investigate statistical correlations between climate change and food security on state political stability. Used the data to write an internal memo suggesting future research opportunities for EG.
- Drafted a PowerPoint deck for a client analyzing the condition of China's future investment environment based on Chinese geopolitical risks.
- Helped draft a report on the effects of Brexit on European economic politics and the financial investment opportunities for the Isle of Man. Focused research on e-gaming (gambling) and green energy.

**The Pennsylvania State University, Department of Political Science** **University Park, PA**  
*Research Assistant, Comparative Politics (CP) Group* *May 2020 – August 2020*

- Compiled dataset on female representation in government ministries of Asian-Pacific democracies dating back to the 1950s.
- Organized and recoded data into an Excel codebook.
- Participated in a weekly research group discussing developments within comparative politics and research design.

**The Pennsylvania State University, Department of Political Science***Research Assistant, Grady Lab***University Park, PA***June 2019 – December 2019*

- Synthesized primary UN documents to extract country-level cost data. Used the data to update a multi-page Excel sheet on global contributions to chlorofluorocarbon (CFC) and hydrofluorocarbon (HFC) abatement.
- Used Excel data to write a memorandum recommending changes to U.S.' negotiation strategy for amendments to the Multilateral Fund.

**LEADERSHIP EXPERIENCE**

---

**University Park Undergraduate Association (UPUA)***At-Large Representative**Speaker of the Assembly | At-Large Representative**Vice Chair of Governmental Affairs | At-Large Representative***University Park, PA***March 2019 - Present**April 2020 – April 2021**March 2019 – April 2020*

- Elected by the University Park student body to preside over the general business of 40 student representatives across 5 standing committees.
- Implemented mandatory anti-racism training and Intercultural Development Inventory (IDI) training for all UPUA members to improve the organization's cultural competency.
- Engaged with task forces examining Penn State's sustainability efforts and worked with student organizations to increase voter registration at Penn State by 15 percent.
- Helped structure and create an internal committee of Justice & Equity and an internal Department of Sustainability.

**Asian Pacific Islander Desi American (APIDA) Caucus***President**Secretary and Internal Relations***University Park, PA***April 2021-Present**April 2020 – April 2021*

- Elected to be the primary liaison between the Asian student body and Penn State faculty and administration.
- Organizes events and meetings with administration to promote equity for international students and combatting Asian discrimination.
- Raised \$8,000 for programming efforts that engaged over 500 Asian students across different cultures.

**UNICEF Penn State***Marketing and Public Relations Chair***University Park, PA***January 2018 – December 2019*

- Raised \$3000 over the year by designing and executing fundraisers for the organization.
- Managed Instagram, Twitter, and GroupMe accounts to 600 members.
- Designed social media graphics and campaign materials for UNICEF Penn State.

**SKILLS**

---

Summarizing reports ▪ Data entry and manipulation (R, Stata) ▪ Statistical modeling, analysis, and interpretation ▪ Secretarial duties ▪ Social media graphic design ▪ Native fluency in English ▪ Elementary proficiency in Chinese

**Honors**

---

Member of Penn State Parmi Nous Senior Honor Society ▪ member of Phi Beta Kappa honor society ▪ nominated to Golden Key honor society ▪ Kim Anderson scholarship recipient ▪ Golder scholarship recipient ▪ student leadership scholarship recipient ▪ Dean's List for five semesters ▪ Kohl's Business with Integrity case competition finalist