

Effects of Social Media Use on Political Polarization

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ACADEMIC ABSTRACT

21st century political science has seen a growing field of research focused around the idea of political polarization. While authors like Fiorina and Abramowitz have been debating the existence of such polarization, the literature has come to understand that perhaps the root of the issue lies in differing definitions. The never-ending quest for clarity has produced a variety of measures of polarization and, subsequently, theories on why 21st century Americans may be experiencing such polarization. Unsurprisingly, as political science questions what may be causing various trends in 21st century voter behaviors and attitudes, the Internet is often mentioned. With the Internet being a clearly powerful tool for political mobilization, whether or not it is divisive among the public could have politically consequential implications.

Because of its interactive nature, it is difficult to evaluate a person's social media use. This study uses a unique survey to evaluate a respondent's general social media and internet use, as well as measures of political polarization. Using this information, along with analysis of the 2016 ANES, I am able to make associations of various levels of social media activity and political polarization. Using means comparison and multivariate regression, I am able to evaluate social media use controlling for effects of age and other confounding variables and how it relates to measures of political polarization.

The survey results ultimately provide some evidence for the claim that increasing social media use is associated with higher levels of political polarization. Additionally, in an OLS regression model testing the effects of different sources of political news, increases in internet use are highly correlated with an increase in political polarization.

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GENERAL AUDIENCE ABSTRACT

Since the 2016 US Presidential election, there have been increasing concerns over how divided the country is getting. Part of the reason why people feel so polarized is likely being exaggerated by social media and breaking news headlines. While Americans may be closer on the issues than they care to believe, the perception of a divided country may be just as consequential. It is difficult to say to what degree our country is truly polarized, if at all. What we can be sure of is that political activists are able to be heard much louder given the platform of the internet. What motivates people to spend hours of their day scrolling through platforms like Facebook is an individual preference, but it is clear that these companies can directly profit from click-bait news headlines.

In order to explore the degree to which different groups are polarized in America, I used an online survey asking respondents about their internet use and political leanings. Using this information, I am able to see what associations might exist between things such as amount of time spent on social media per day and how committed one is to their ideology. These measures themselves are widely debated in political science, so the study also aims to examine in what ways different measures of polarization may be used effectively.

The results of the study do find some evidence that increased social media use is correlated with an increase in political polarization. However, other measures of political activity on the internet are seen to be highly correlated with an increase in political polarization.

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Chapter I: Introduction

If an informed constituency is the goal, the internet certainly has been a net gain for the political world (Kenski & Stroud 2006). However, some worry that the most politically motivated can use the internet to amplify extreme views. Thus, as more people become involved in these groups and their news feeds are filled with political news that matches their political preferences, they are likely to move further from the center and to the far ends of the political spectrum. The internet, by design, allows for specific communities to organize and share ideas with each other. Unsurprisingly, some of the largest and most active of these communities are focused around some kind of political goal. Whether these groups are formed by individuals based on shared ideological commitments or organizations like political parties, the internet is an effective tool to politically mobilize the masses. While political science has debated over the existence and nature of political polarization in the United States electorate, there has been specific research on whether or not internet use may be related to higher levels of polarization. This study aims to explore associations between internet and social media use and political polarization.

The American National Election Studies surveys have been a crucial source of information for political science research since 1977. While the survey includes some questions focused around internet use, there are not really any measures of social media use. To solve this issue, I fielded a unique survey to 300 respondents using Amazon's Mechanical Turk service asking about social media use. By using data from this survey to fill in some gaps in the 2016 ANES, I will attempt to make sense of some of the associations between internet activity and political polarization. Specifically, the nature of one's internet use is of interest in the survey, as those taking the survey through mechanical turk are among some of the most internet-adept you

could be sampling (Levay et al. 2016). Among these measures of internet and social media use are times accessed per day and a respondent's preferred source of political news.

A common theme in the political science literature surrounding political polarization is the inability for researchers to agree on a definition of political polarization. Distinctions have been made between polarization of parties versus the general population. While much can be said about the polarization of elected officials and party elites, this study focuses on political polarization of the general population. However, research which examines polarization of the general population is also guilty of not agreeing on a clear definition of political polarization (Hetherington 2009). Continuing with tradition, this study will use two different measures of political polarization. The first is ideological commitment, which is the tendency for someone to identify as "Extremely Liberal" or "Extremely Conservative". The second measurement is affective partisan polarization. In some ways, this measurement was generated out of convenience as two questions in the ANES were perfectly set up to assign polarization to a respondent. The two questions are feeling thermometers for the Democratic and Republican parties, measuring how positively or negatively a respondent felt about each party. These questions ask respondents to rate both the Democratic and Republican parties on a scale from 0 to 100. A 0 indicates feeling negatively towards the party, while a 100 indicates the respondent feels very positively about the party. For something to be polarized, it needs to be compared to something else. Thus, using these two questions as a measure of polarization, an individual can be said to be polarized themselves, rather than polarized to some other individual. This measurement is still a relatively useful way to understand political polarization as we can expect a relatively even amount of Democrats and Republicans in any given survey. This is important as we can imagine a scenario where a survey is only responded to by Democrats who rate the

Democratic party 100 and the Republican party 0. In this scenario, the sample would seem extremely polarized, although they all hold the same beliefs. This is also why ideological commitment is used a measure of political polarization, as we can understand a more ideological extreme group on either end polarizes as well.

Objective

The goal of this study is to make associations between the frequency of one's social media use and measures of political polarization. To do this, a survey of 300 respondents was fielded using Amazon's mechanical turk service. The survey was designed to assess the respondent's frequency and nature of internet use, as well as measures of political leanings and opinions. Additionally, some questions were designed to be identical to questions which are included in the 2016 ANES. This is because much of the political science literature surrounding political polarization uses evidence in the ANES. This will allow the demographics of the mechanical turk survey to be compared to the ANES, as well as use similar variables to those used in the literature. The study will analyze multiple measures of political polarization among various age groups. Additionally, regression analysis will be used to examine how frequency of social media use, and internet use in general, may be associated with higher levels of political polarization.

Chapter II: Review of Literature

Polarization

Much of the news surrounding the current US political climate makes important the problem of “political polarization”. While not always explicitly used, the term can be implicitly recognized through popular tag lines such as, “We are more divided than ever.” What is being articulated here is the concept of political polarization. The concept itself is certainly nothing new, especially in American politics. We have seen extreme political divide in early 20th century, the New Deal era, and most extremely, the Civil War (Brady et al. 2006). Political polarization has been well-documented among party elites, specifically members of Congress (McCarty et al. 2006). However, an important distinction is to be made between polarization at the level of political elites and polarization at the level of the mass public. Contemporary political science has seen contentious debate about the degree to which the United States electorate can be understood to be polarized (see Fiorina et al. 2008; Abramowitz & Saunders 2008). While this debate is still largely ongoing, some scholars believe the disagreement to be one of semantics and the choice of measurement used (Hetherington 2009). In fact, the way in which political scientists measure political polarization, and the implications of these different measurements is still widely debated.

In United States politics, polarization has been typically understood to be the separation of politics further into camps of liberalism and conservatism (McCarty et al. 2006). This has been measured using methods of ideological self-identification, as well as ideological identification based on issue-specific questions. This difference is indicative of symbolic versus operational ideological identification. Symbolic ideological identification is simply the extent to which someone identifies themselves on an ideological continuum. Operational ideological

identification uses a series of issue-specific questions in order to evaluate the degree to which someone supports liberal or conservative policies. The United States electorate has affinity for the symbols of conservatism, and thus identify as such, while being more operationally liberal in regards to economic and foreign policy (Ellis & Stimson 2012).

By nearly all measures, political scientists have understood party elites to be increasingly polarized, as evidenced by the voting behavior of Congress (Poole & Rosenthal 2008). Of course, elites care the most about, and are the most knowledgeable of politics. The mass public has not been shown to be similarly ideologically divided, at least measured by their distribution of issue-attitudes (Evans 2003). However, there is evidence that the mass public is becoming increasingly ideologically polarized across party lines (Abramowitz & Saunders 2008). Notably, this polarization has been observed to be closely associated with income inequality (McCarty et al. 2006). Some scholars have attributed this trend to the idea of “party sorting” (Fiorina & Levendusky 2007). Party sorting is the ability of the electorate to align themselves with the party that most closely represents their ideology. The argument follows that the public is not becoming more ideologically divided, just better at aligning themselves with the correct party. So, increasing ideological division between the parties is best characterized as more liberals becoming Democrats and more conservatives becoming Republicans, rather than moderates becoming more liberal or conservative. This partisan-ideological sorting has been shown to be increasing in recent decades (Levendusky 2009).

While conventional wisdom has suggested that terms of liberal and conservative are synonymous with Democrat and Republican, there are some important distinctions. Ideological identification is much better at predicting less directly political beliefs involving family values and religious commitments, while partisanship better predicts values and beliefs involving

redistributive economics and the environment (Lewis-Beck et al. 2008). Few liberals are Republicans and few conservatives are Democrats, but those who “wrongly” match their ideology with a party provide insight into why they may identify as such. For example, in one study, those who identified as conservative Democrats were, on average, much closer to conservative Republicans on public policy issues related to lifestyle choices (traditional marriage, religion in schools, etc.) but were much closer to liberal Democrats on foreign policy issues (Lewis-Beck et al. 2008). The 2016 US presidential elections highlighted distinctions between ideology and partisanship as ideological battles took place within the Democratic and Republican parties. This lack of equivalence between partisanship and ideology has been of growing interest to political scientists (Grossman & Hopkins 2016, Kinder & Kalmoe 2017). However, 2016 might also provide evidence for a “post-ideological” electorate (Hohmann 2016).

The successful presidential campaign of Donald Trump exemplified that coherent policy propositions are not necessarily required to politically motivate large groups of the electorate. Still, there is no shortage of rhetoric within coverage of the 2016 and 2020 US presidential campaigns which frames the electorate as a conflict between “liberals” and “conservatives”, so these identifiers must indicate some kind of division. This has pushed the literature to further explore the identity-based aspects of ideology, which understands the terms “liberal” and “conservative” to be synonymous with “us” and “them” to some portion of the electorate (Kinder & Kalmoe 2017). Interestingly, despite these identities having less to do with issue-attitude and more to do with group identity, they are still motivators of political opinion (Malka & Lelkes 2012, Ellis & Stimson 2012). Understanding ideology as a group identity allows us to explore political polarization as a function of social identity theory. Under social identity theory, those in the group are implicitly judged to be superior to those outside the group (Tajfel & Turner 1979).

As Mason (2018, 299) puts it, “American identities are better than American opinions at explaining conflict.” Understanding political polarization as a conflict of identities has led to an emphasis on “affective polarization”, otherwise known as “social polarization”, in the literature (Iyengar et al. 2019). Affective polarization is the tendency for a member to feel positively towards those in-group, as well as their tendency to feel negatively towards those in the out-group. For example, partisan affective polarization is “the tendency of people identifying as Republicans or Democrats to view opposing partisans negatively and co-partisans positively” (Iyengar & Westwood 2015, 691). Using models of social distancing, political scientists have seen evidence for affective polarization using both partisan identity and ideological identity (Iyengar et al. 2012, Mason 2018).

Discussion Networks

Since the work of Lazarsfeld et al. (1944), expanded upon by authors such as Berelson (1954) and McPhee (1963), sociologists and political scientists alike have understood democratic politics to exist in a social context. For the purposes of this study, it is useful to separate these social contexts into one of two categories: politically homogenous and politically heterogeneous. Politically homogenous contexts often include families, churches, and other organizations which hold political beliefs. These politically homogenous contexts are often associated with the socialization of political beliefs, and rarely are the environments in which political disagreement thrive. Politically heterogeneous contexts can include work, school, and for the purposes of this study, sometimes social media. The degree to which social media can actually be said to be a politically heterogeneous environment has many different factors, but it is first useful to understand how both of these kinds of social contexts can affect political opinion and behavior.

The family has been found to socialize politically in the same way that they can socialize any attribute that they consistently project. In other words, parents who are highly politicized or engaged in politics are most effective at politically socializing their children. At the other end of the spectrum, children who are not born to parents who are politically active find themselves more impressionable in their adolescent years. These effects have been found to be relatively consistent across multiple different generations (Jennings et al. 2009). Much of this socialization occurs without intent from the parents. It is also found that there are ways of socializing that are not directly political, such as the general belief that people are trustworthy, that may have large impacts on the future political engagement of youth. Additionally, some of these effects may have more to do with public policy than could be traditionally attributed to the parents. For example, having two parents who work can often politically socialize children into a more conservative ideology compared to households with stay at home parents. However, these family structures are only possible because of liberal policies like public schooling (Merelman 1980). While the family is certainly a crucial agent in the socialization process, both political and otherwise, peer-networks and media serve an important role as well. The political socialization of the youth is an especially important topic, as it has been found to have direct links to their future political engagement (Schwarzer 2011). In the realm of youth political socialization specifically, there have been advances to understanding longitudinal effects across various factors. Interestingly, peer networks and voluntary engagements have been seen to influence youth more than parents and education than was previously thought (Quintelier 2015).

That is, an individual's political preferences are exposed in certain social contexts, and the extent to which they are challenged and possibly altered is a function of the political disagreement within a social network. Unsurprisingly, this effect has been found to be most

noticeable and most influential around politically significant events, with longer-term processes, such as presidential elections, progressively influencing individuals towards more fully formed political preferences as they unfold (Huckfeldt & Sprague 1995). While the bulk of the body of research on polarizing effects of traditional forms of media such as newspapers and television, there is an increasingly pressing need for research focused on the use of the internet. The number of people who are primarily receiving their political information from the internet is increasing (Pew Research Center 2019). The problem with this research is that even in the age of the internet, there is still a focus on the way in which traditional forms of media, such as newspapers and news outlets, use the internet to disseminate information. This is especially problematic in the case of the youth, as there is an increasing understanding that they are not simply passive agents who consume political information, but are rather active in their own socialization process (McLeod 2000). This idea of “active citizenship” is perhaps no more evident than on social networking sites.

Beginning with analysis of new mediums for political news, namely that of television, Prior (2007) makes the argument that high-choice media environments contribute to political polarization. The argument is two-fold in that consumers of media have more choices both in content (political versus entertainment) as well as more choices among news channels themselves (MSNBC versus Fox News). The effect on political polarization arising from having more apolitical television channels is an indirect effect on the voting populace. Namely, having more choices for entertainment makes those who are less politically interested even less likely to watch political news. Prior argues that those who prefer to consume this entertainment over political news are less compelled to vote. Because these people are likely to be moderate in nature, considering their lack of interest in politics in the first place, the voting populace

becomes more polarized than the entire electorate. While internet users are exposed to an even higher choice media environment, and those who seek out entertainment are even more likely to do so, those who are on social media are likely to see a wider variety of content. News feeds on social media sites like Facebook are often a conglomerate of political, entertainment, and personal content. Thus, even those who are relatively uninterested in politics may still see a news article being shared by their politically enthusiastic aunt. Those who use the internet for political information have even more choices than with television. An abundance of ideological news sources, forums, and social media groups create an environment where virtually every political belief has a home. This ability to attract and congregate people with like-minded ideas is a certainly a feature of the internet, but can also be cause for concern. Terrorist groups such as ISIS have been known to use the internet as a means of recruitment (Blaker 2015). The internet may be better understood as “limitless” in terms of media choice. Whether or not the use of social media or the Internet is associated with an increase in affective polarization is still unclear. Some evidence has been found for a small positive correlation between Internet access and affective polarization (Lelkes & Iyengar 2017). In contrast, Boxell et al. (2017) found no evidence for a correlation between Internet use and any kind of political polarization, both affective and not, as well as ideological and partisan polarization (Iyengar et al. 2019). Boxell et al. (2017) finds that polarization increases with age and using age as a proxy for Internet use, highlighting ANES and Pew Research data that Internet use decreases with age, suggests that such a finding is evidence that Internet use and polarization are not associated.

Much can be said about the potential political functions of social media solely based on their architecture alone. While they can function in similar ways to traditional social circles, the ability to “unfriend” or “block” someone from your timeline provide the ability for users to

actively pursue news feeds which are free from dissenting opinions. Functions that are specific to Twitter, namely retweets and mentions, have been used to show how social media features can give rise to distinctive types of political engagement based on the type of network. Data has shown that networks of retweets, which are essentially reposts of one user's content to another user's page, are much more likely to serve as echo-chambers than networks of mentions (Conover et al. 2011). This has to do with the act of retweeting being considered as an endorsement of another post, rather than as a way of potentially introducing new arguments which may challenge existing beliefs in a particular network. Mentions are the act of tagging another user in your own post, and these types of posts can be directly expressing disagreement with the tagged user, so the cross-cutting nature is to be expected. This type of functionality on social media is precisely the type of behavior which may provide the basis for a more polarized stream of media. The issue here is that this media is being shared and distributed on a platform that is designed to make users feel like they are connecting with their social group. When political content appears on a user's news feed it is either being posted or simply shared by someone in their "social circle."

One being that social media feeds lend themselves to being "echo-chambers", and another that they nurture "cross-cutting interactions" (Hong and Kim 2016). Hong and Kim look at the popularity of particular political figures using number of Twitter followers, as a way to gauge interest in those figures depending on how far to the left or right they are. What was found was that more interest was found on the fringes of each spectrum, rather than at the cross-roads. This is evidence that there is actually more interest in hard ideological Twitter profiles, than ones that might foster more of a debate. This is to say that people are more interested in the "echo-chamber" part of Twitter than the "cross-cutting interactions" part. Now, I am not totally

convinced by this evidence alone, as following particular political figures doesn't really signal the entirety of one's political interests on a social media platform like Twitter. However, we can look to other examples that will give us a clearer picture of what people are looking for when they open their news feeds.

Confirmation bias is something many people encounter when it comes to the media we consume. So, what happens when the media we consume is generated by people in our community? As it turns out, some of us choose to ignore and even exile those people from our circles. In a study done by Zhu et al. (2017) a survey of students from Hong Kong was taken during a time where street protests were on the rise. It turned out that 1 in 6 of these students participated in some form of hiding undesirable content from their news feeds, whether it be hiding, blocking, or un-friending someone on their Facebook pages. What was even more interesting was students that participated in this sort of echo-chamber by design, were more likely to participate in actual street protests. While this may just be indicative of the type of people that would actually go through the trouble of blocking someone, there is also the possibility that their news feeds convinced them of a much larger support group than was in reality. If we imagine one of these student's news feeds, we can see how by removing all people with dissenting opinions, our viewpoint of general public opinion changes drastically. In fact, one might even say that your entire perception of reality changes, the moment you make your social media feed only consist of one type of opinion. I think that this is an important aspect of political polarization as it relates to social media for a few reasons:

1. Social media represents a global community.
2. Everyone's social media feeds naturally are closer to their political ideology, as they attract like-minded individuals.

3. If people on their news feed have dissenting opinions, there are many options to remove that content.

4. Social media companies have an incentive to maximize a user's screen time, and therefore, an incentive to provide pleasing and confirming content.

All of these factors create the perfect storm for extremely politically motivated people. While it may be marginally beneficial to have a more engaged electorate, the cost that a politically polarized society has to pay may not be worth it.

Chapter III: Research Design and Methods

Data Collection

To evaluate the effects that internet and social media use may have on affective political polarization of the US electorate, the study will use the ANES data set, as well as an online survey. The ANES data set has been the basis of much of studies on affective polarization, mostly due to the thermometer rating of both political parties. As previously mentioned, the difference between these two ratings has often been used as the measure of affective political polarization. A unique survey will be used to make some associations between Internet and social media use to the same thermometer rating. Using Amazon's mechanical turk service, the study will ask various demographic related questions, as well as ones specific to the individual's social media use and political leanings. Services like Amazon's mechanical turk provide much benefit to this type of research, as it allows for a much more diverse sample than is traditionally gathered from studies which use undergraduate students as the only respondent (Cassese et al. 2013). The surveys allow for an affordable way to reach a diverse sample, which is necessary for the study, as age is an important variable, as it will be directly related to the analysis made about socialization. The exact cost of the survey depends on the number of questions in the survey, as well as the amount of respondents desired. The survey consists of 13 questions, and fielded a sample of 300 people (see Appendix A for list of survey questions). This sample size should give the study enough data to make reasonable analyses based on various age groups, social media activity, and political ideology. Mechanical turk also allows for respondents to be limited to the United States.

In this type of survey, much care must be given to the questions themselves. Specifically, the wording of the questions, the order that they are in, and the answer choices need

to be as free of bias as possible. Fortunately, mechanical turk surveys have been found to create similar response habits as traditional survey methods without much of the issues that plague traditional survey methods (Cassese et al. 2013). The questions are designed to give an accurate depiction of the respondent's political ideology, and their media engagement. The demographics of mechanical turk users tend to be fairly diverse, and those who are already using a service like mechanical turk are likely to be digitally literate. This type of individual will hopefully also be relatively familiar with Internet media, specifically social media.

The purpose behind each of the questions is varied between identifying the political ideologies of the respondent as well as their political media consumption (See Appendix A). Questions 1-2 are general demographic questions with age being the most important to the study as it will allow for a cross-generational analysis. It is anticipated that the age of the respondent and their engagement on social media will have an additive effect on the extremism of their political ideology and their degree of affective polarization. Once responses have been collected a regression analysis will be developed where the independent variable of social media use will be compared to the dependent variable of affective polarization. Specifically, the degree to which a respondent favors co-partisans over opponents. In other words, amount of time spent on social media as it relates to the degree of a respondent's affective political polarization. The covariate of age will be used to understand the socialization effects of social media, as those who are in the younger age range can be considered to have been socialized by the Internet and social media more than those who are older.

Variables

The mechanical turk survey was designed to produce multiple measures of a respondent's political and apolitical social media use. Thus, associations between general social media use and

more politically focused use can be distinguished. The independent variables can be understood in three main groups: demographics, social media use, and political news consumption. The only information about a respondent given is the country where their IP address is located and their percentage of successful HITs. Thus, all desired demographic information was needed to be included within the survey itself. For the purposes of the study, it was chosen to ask for the respondent's age group, gender, partisanship, ideology, and interest in politics. Age group options ranged from 18-24 to 55+, with intervals of about 10 years. Based on previous research, it is predicted that older age groups will be associated with higher levels of political polarization. All options can be seen in Appendix A. Partisanship allowed for Democrat, Independent, and Republican, as well as an "Other" option whereby respondents could specify their party identification. To measure ideology, a 7 point scale was chosen to mimic the ANES. Interest in politics was also added to examine how it may be associated with actual political activity on social media. It is predicted that the more interested a person is in politics, the greater will be their levels of polarization.

For social media use, there were four variables used to measure a respondent's social media activity. The first variable is the age group of the respondent when they began using social media. This is to examine possible associations between political socialization as a young person on social media and their political polarization. Two separate variables for actual time spent on social media was used. The first is the number of times a respondent accesses social media in a day (checks their Facebook, Twitter, etc. on their phone). The second is a respondent's estimated total amount of time spent on social media. Both variable ranges can be seen in Table 1. The last variable to measure social media use focuses on a respondent's political activities while using social media. Four political-in-nature social media activities were listed such as following a

politician, which respondents then indicated which of the four activities they engage in. Thus, these four dummy variables were used to code a 0-4 scale which then measures how politically active a respondent is on social media. The last group of independent variables are designed to examine how important various sources of political information are to a respondent. For Internet, Television, Radio, and Newspapers, respondents were asked to identify how often they use each source for political news. An additional question was added to identify which source a respondent considered most important to them. This forced respondents to put more weight into one source, rather than there being ties between multiple sources. It is predicted that the effect on polarization will increase as the source is higher choice. Thus, from most associated to least it would be: Internet, Television, Radio, and Newspaper. Likewise, it is predicted that those for whom the Internet is the most important source of political information will tend to be more politically polarized. For a table of independent variables that includes predicted effect on political polarization, see Appendix B.

Table 1: Independent Variables

<i>Variable</i>	<i>Description</i>
Independent Variables	
<i>Age Group</i>	Age groups: 18-24,25-34,35-44,55+
<i>Gender</i>	The gender of the respondent, coded female as 0 and male as 1.
<i>Ideology</i>	7-pt ideological scale. "Extremely Liberal" to "Extremely Conservative".
<i>Partisanship</i>	Respondent's partisan identity as either Democrat, Republican, or Independent. Respondents also had the option to specify their party identification.
<i>Age Start</i>	Age group respondent was in when they began using social media. Age groups: 13 or younger, 14-17, 18-21, 22-25, 26-29, 30-40, 40-50, 50 or older
<i>Social Media Use (Times a day)</i>	Number of times the respondent uses social media on an average day, ranging from "Not everyday" to "10+ times a day" See Appendix A for all options.

<i>Social Media Use (Time per day)</i>	Amount of total time one uses social media on an average day, ranging from "Less than 30 minutes" to "3+ hours". See Appendix A for all options.
<i>Social Media Use (Political Activity)</i>	Ratio variable coded as scale 0-4 measuring level of political activity on social media. Measured as number of "Yes" responses to Question 13 (See Appendix A).
<i>Interest in Politics</i>	Respondent's level of interest in politics. Respondents could choose "Not at all interested", "Not very interested", "Somewhat interested", and "Very interested"
<i>Political News: Internet</i>	How often a respondent uses the internet to access political news, ranging from "Never" to "Daily", See Appendix A for all options.
<i>Political News: Television</i>	How often a respondent uses television to access political news, ranging from "Never" to "Daily", See Appendix A for all options.
<i>Political News: Newspaper</i>	How often a respondent uses the newspaper to access political news, ranging from "Never" to "Daily", See Appendix A for all options.
<i>Political News: Radio</i>	How often a respondent uses the radio to access political news, ranging from "Never" to "Daily", See Appendix A for all options.
<i>Most Important Source of Political News</i>	Respondent's most important source of political news. Options are Newspaper, Television, Radio, Internet, and Other.

In order to measure political polarization, this study uses two fairly distinct definitions. Affective partisan polarization is the primary measure of political polarization in the study, but a measure of ideological extremism is also included via a 7-point ideological scale. The measurement of affective partisan polarization is created using two of the questions in the survey, each asking respondents to give a feeling thermometer to the Democratic and Republican party, respectively. For each question, respondents were given a slider which they could manipulate to indicate their answer. The sliders can be seen in Figure 1. A variable of affective partisan polarization is then calculated for each respondent as the difference between their two answers, thus having a possible range of 0-100. The second measurement of political

polarization is simply defined as their ideological commitment. A variable was added based off a respondent's answer to the 7-point ideological scale which assigns them a number 0-3. This number is how far a respondent identifies from the middle, "Moderate", category. Those who are more ideologically extreme are then more "polarized" than those in the middle. The most important distinction between the two measures of polarization is affective partisan polarization is a measure which can be understood at an individual level. Ideological commitment, on the other hand, is only polarizing assuming that there are roughly equal amounts of people on the other end of the spectrum. However, it is still a quite useful measurement of polarization, as it creates an opportunity to examine differences between those who are "Slightly Liberal" and those who are "Extremely Liberal". These two measures of political polarization are the dependent variables that will be tested in the study. Table 2 displays the variable names and their descriptions. These two measures of political polarization are the dependent variables that will be tested in the study. Table 2 displays the variable names and their descriptions.

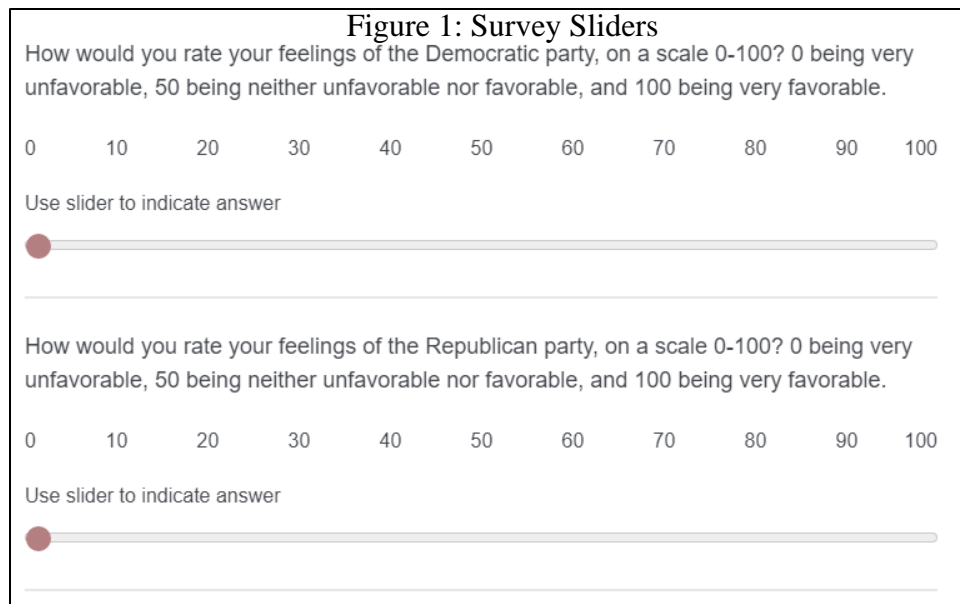


Table 2: Dependent Variables

<i>Variable</i>	<i>Description</i>
Dependent Variables	
<i>Affective Political Polarization</i>	Measured as the difference between two feeling thermometers. These feeling thermometers each measure a respondent's feelings towards the Democratic and Republic party. Scales for each thermometer are 0-100, with 0 being unfavorable and 100 being favorable. Thus, Affective Political Polarization has a range 0-100.
<i>Ideological Commitment</i>	Measured as the distance from a respondent's self-identified ideology on a 7-pt scale and "Moderate" (4). Thus, Ideological Commitment has a range 0-3.

Models and Hypotheses

Using the mechanical turk survey, specific questions can be asked to evaluate the frequency and nature of a respondent's social media use. Using this information, along with demographics, various associations will be examined between these independent variables and measures of polarization. A series of hypotheses and models have been created in order to examine these relationships.

Although the two measures of political polarization are intended to be evaluated separately using various predictors, namely social media use, there is still ongoing consideration of the link between ideological commitment and affective partisan polarization. The links between ideological self-identification and partisanship are certainly clear in the United States. Extremely conservative people are likely to be Republicans and Extremely liberal people are likely to be Democrats. However, we can imagine ideologically extreme respondents who rate both party a 0. For this reason, it is useful to examine the relationship between the two dependent variables and evaluate whether ideological commitment is associated with affective partisan polarization. The first hypothesis to be examined is:

H1: As a respondent's level of ideological commitment increases, their level of affective partisan polarization will increase.

It is logical to assume that a respondent who identifies as extremely committed to one side of the ideological scale is likely to identify with the corresponding political party. In contrast, the example of a committed ideologue who is so extreme they believe neither party is far enough left or right presents a reasonable alternative possibility. Therefore, it is worth examining the existence and strength of the link between ideology and affective partisan polarization. This will be examined using OLS regression with the equation:

$$\text{Model 1: } \textit{Affective Partisan Polarization}_i = \beta_0 + \beta_1 \textit{age}_i + \beta_2 \textit{gender}_i + \beta_3 \textit{Ideological Commitment}_i + \varepsilon_i$$

After examining the relationship between the two dependent variables, a few hypotheses and corresponding OLS regression models will be used to evaluate associations between the independent and dependent variables. The second hypothesis is aimed to examine associations between the three measurements of social media use, and a respondent's affective partisan polarization. The second hypothesis is as follows:

H2: As a respondent's level of social media use increases, their level of affective partisan polarization will increase.

The second hypothesis will be evaluated with three distinct models, each using a different measure of social media use, along with age and gender. The different measures of social media use and their respective descriptions can be seen in Table 1 as "Social Media Use (Times a day)", "Social Media Use (Time per day)", and "Social Media Use (Political Activity)". The models for each multivariate regression can be understood by the equation:

Model 2: Affective Partisan Polarization_i = $\beta_0 + \beta_1 age_i + \beta_2 gender_i + \beta_3 social\ media\ use_i + \varepsilon_i$

The second dependent variable to measure political polarization is ideological commitment. In order to examine the effects that the three measurements of social media use have on both dependent variables, a third hypothesis is created with ideological commitment as the measurement of polarization. The third hypothesis also predicts a positive association with social media use and polarization. It should be noted that this ideological commitment variable does not distinguish between liberals and conservatives. The variable only measures the degree to which a respondent considers themselves committed in either direction. The third hypothesis is as follows:

H3: As a respondent's level of social media use increases, their level of ideological commitment will increase.

The third hypothesis will be evaluated using the same measures of social media, with the respondent's degree of ideological commitment as the dependent variable. The description of the ideological commitment variable can be seen in Table 2. Similar to Model 2, Model 3 is thus:

Model 3: Ideological Commitment_i = $\beta_0 + \beta_1 age_i + \beta_2 gender_i + \beta_3 social\ media\ use_i + \varepsilon_i$

In order to examine the effects that consumption of different sources of political information might have, a fourth hypothesis is used predicting Internet use to have the greatest positive association to affective partisan polarization. The fourth hypothesis is:

H4: As compared to Newspapers, Radio, and Television, the frequency a respondent uses the Internet for political news is the best predictor of affective partisan polarization.

The fourth hypothesis will be tested using a respondent's frequency of accessing political news via Newspapers, Radio, Television, and the Internet as predictors of affective partisan polarization. As with previous models, age and gender will be used as confounding variables in a multivariate regression which will evaluate the four sources of political news. Thus, Model 4 is:

$$\text{Model 4: Affective Partisan Polarization}_i = \beta_0 + \beta_1 \text{age}_i + \beta_2 \text{gender}_i + \beta_3 \text{Internet}_i + \beta_4 \text{Radio}_i + \beta_5 \text{Newspaper}_i + \beta_6 \text{Television}_i + \varepsilon_i$$

As with social media use, the respondent's use of different sources of political news will also be evaluated with ideological commitment as the dependent measure of political polarization. This hypothesis is:

H5: As compared to Newspapers, Radio, and Television, the frequency a respondent uses the Internet for political news is the best predictor of ideological commitment.

The associated model resembles that of Model 4, with the distinction of ideological commitment as the dependent variable.

$$\text{Model 5: Ideological Commitment}_i = \beta_0 + \beta_1 \text{age}_i + \beta_2 \text{gender}_i + \beta_3 \text{Internet}_i + \beta_4 \text{Radio}_i + \beta_5 \text{Newspaper}_i + \beta_6 \text{Television}_i + \varepsilon_i$$

Additionally, in order to examine the effects of news consumption on polarization by different age groups, models 6 and 7 use the same structure as models 4 and 5, but without age so as to enable a breakdown by each age group.

$$\text{Model 6: Affective Partisan Polarization}_i = \beta_0 + \beta_1 \text{gender}_i + \beta_2 \text{Internet}_i + \beta_3 \text{Radio}_i + \beta_4 \text{Newspaper}_i + \beta_5 \text{Television}_i + \varepsilon_i$$

$$\text{Model 7: Ideological Commitment}_i = \beta_0 + \beta_1 \text{gender}_i + \beta_2 \text{Internet}_i + \beta_3 \text{Radio}_i + \beta_4 \text{Newspaper}_i + \beta_5 \text{Television}_i + \varepsilon_i$$

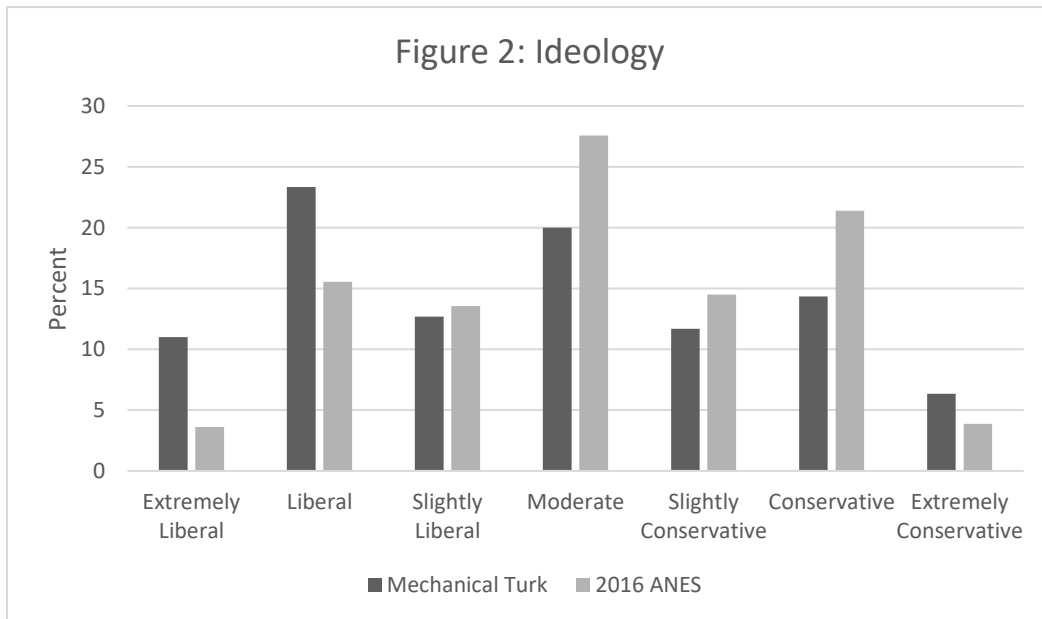
Chapter IV: Results

A survey was conducted on April 9, 2020 through Amazon Mechanical Turk, with only two responses considered invalid. The responses were considered invalid as the worker who completed the survey did not input the correct survey code that was generated at the end of each completed survey. The demographics of the 298 respondents were consistent with previous data on Mechanical Turk workers. Table 1 breaks down the age, gender, and partisan self-identification for all 298 respondents of the mechanical turk survey, as well as demographics of the 2016 ANES. The ANES is much more representative of respondents age 55 and older. The other age groups are comparable with an exception of 25-34 year-olds making up a sizable portion of the mechanical turk survey respondents. Both datasets are similar in gender breakdown, with both having about half men and half women. Additionally, most common party identification is Democrat with 44%, followed by Independent and Republican at 29.7% and 24.7%, respectively. This is comparable to the 2016 ANES, with a larger share of Democrats.

Table 3: Demographics

Demographics	Mechanical Turk Survey (<i>n</i> = 298)	ANES 2016 (<i>n</i> = 4,150)
<i>Age Group (%)</i>		
18-24	12.0	7.9
25-34	40.7	17.1
35-44	24.0	15.8
45-54	12.0	16.6
55+	11.3	42.6
<i>Gender (%)</i>		
Female	48.0	52.3
Male	51.7	46.5
<i>Partisanship (%)</i>		
Democrat	44.0	34.0
Independent	29.7	32.0
Republican	24.7	28.8
None/Other	1.7	5.2

Figure 2 shows the breakdown of ideological self-identification. While the respondents from the mechanical turk survey trend in the liberal direction, the results are relatively consistent with the 2016 ANES. Those identifying as “Liberal”, “Moderate”, and “Conservative” are the most common responses, with fewer identifying either extremely or slightly in either direction. We also see both more extreme liberals and extreme conservatives in the mechanical turk survey than the ANES. This is interesting as it supports the hypothesis that internet users may be more ideologically committed than others. Another variable was created in both datasets meant to measure degree of ideological commitment, defined as the difference between a respondent’s self-identified ideology and the moderate category. Thus, each respondent is measured on a scale 0-3 depending on degree of ideological commitment. That is, respondents who are “Extremely Liberal” or “Extremely Conservative” are both coded as 3 and respondents who are “Moderate” are coded as 0.



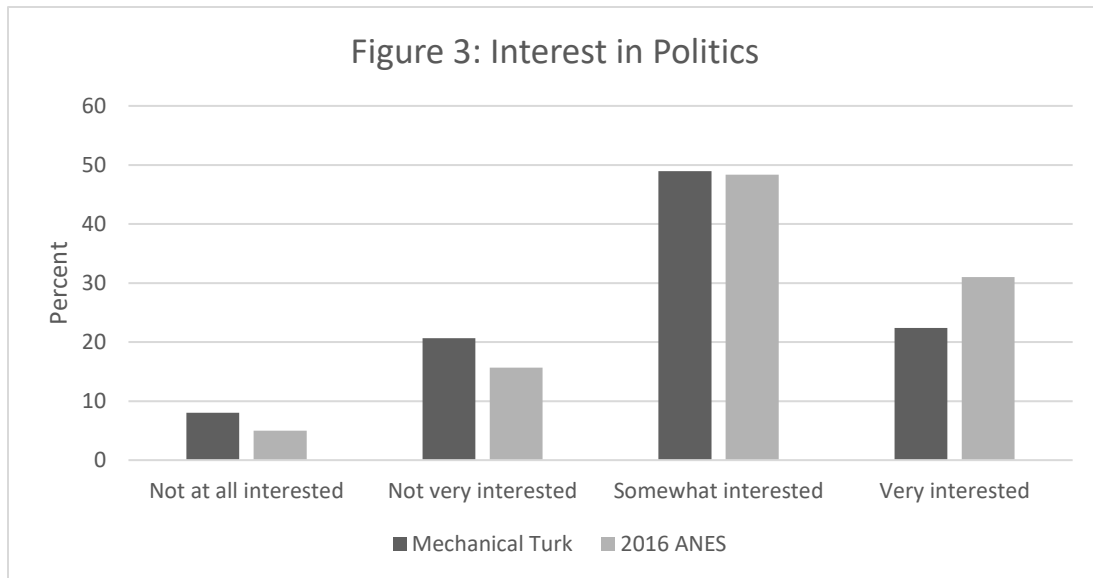
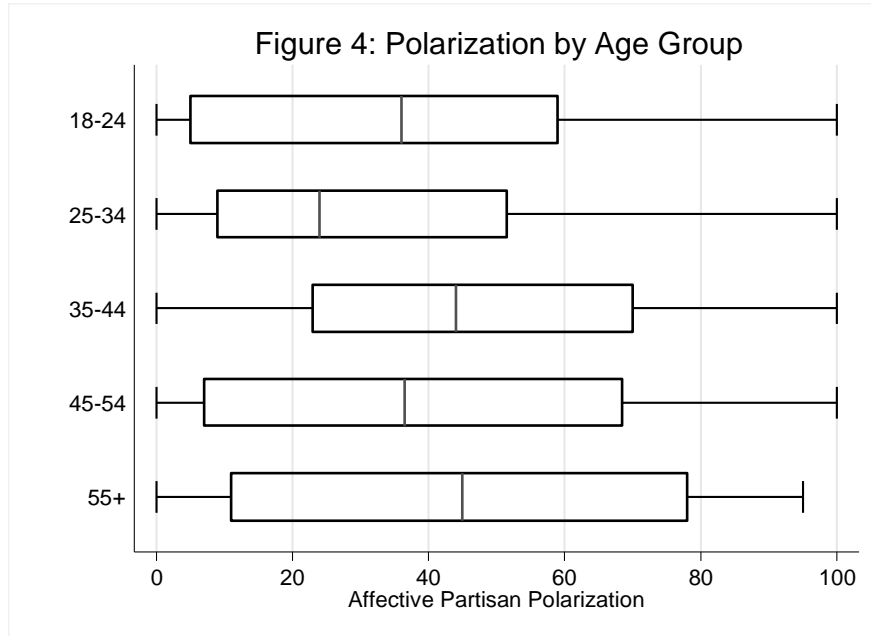
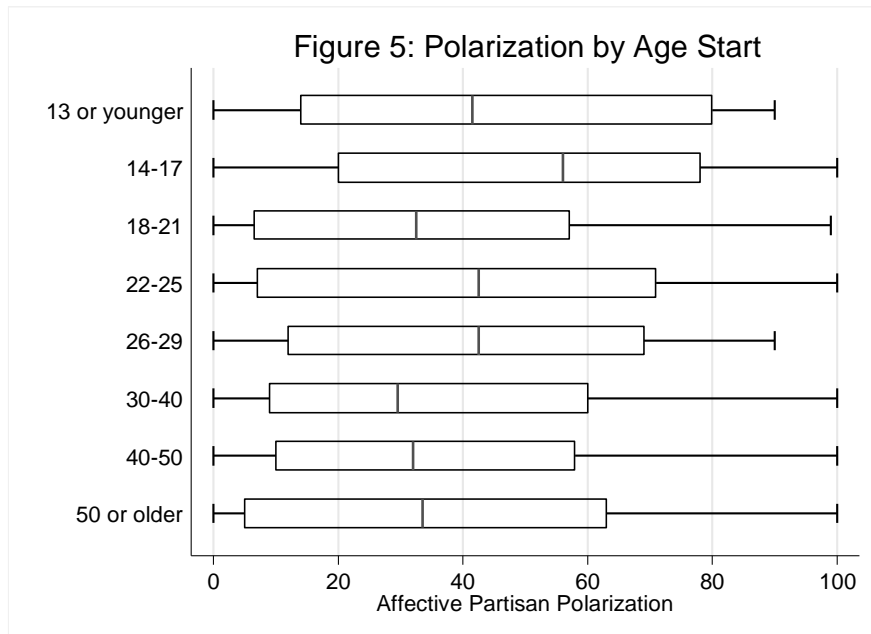


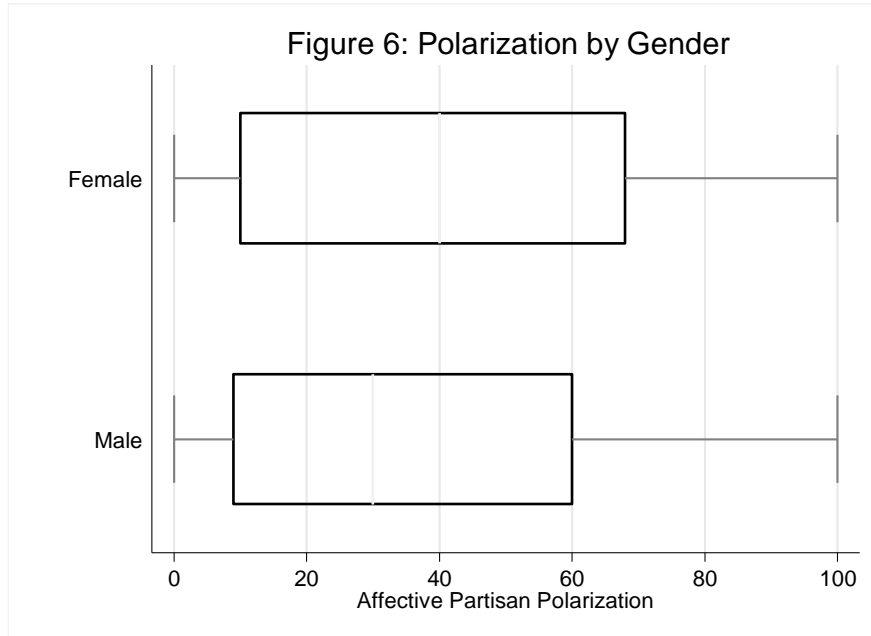
Figure 3 shows the breakdown of interest in politics for both the mechanical turk survey and the 2016 ANES. Both questions were coded the same on a scale from “Not at all interested” to “Very interested”. Both datasets are similar in that the majority of respondents in both answered “Somewhat interested”. One notable difference is that there is a larger percent of respondents who identify as “Very interested” in politics in the 2016 ANES. Overall, respondents to the mechanical turk survey are similarly interested in politics compared to respondents of the 2016 ANES.

Affective partisan polarization is measured in both datasets as the difference between the feeling thermometers that respondents gave for both the Democratic and Republican party. The 2016 ANES measured affective partisan polarization has a mean of 39.26 while the Mechanical Turk survey’s affective partisan polarization variable has a mean of 38.54. Considering the scale 0-100, this is a remarkably similar mean between the two datasets. In the interest of examining how some of the different groups of respondents are affectively polarized, Figures 4-8 display a series of box plots based on age groups, gender, partisanship, and interest in politics.



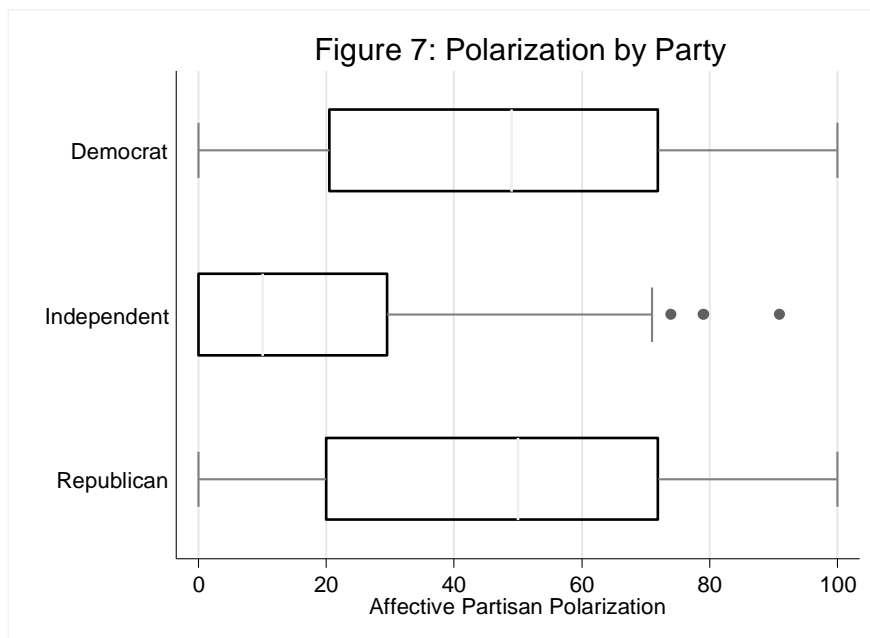
Looking at Figure 4, the oldest age group, 55+, has the highest mean and also the widest range of response. 25-34 is the age group with the lowest mean at about a 20-pt difference from 55+. Interestingly, 55+ was the only group which did not have a respondent who was completely polarized, where a score of 100 would indicate total preference for one party and no good will towards the other. Also included in the survey was a question asking when the respondent first





began using social media. Figure 5 shows affective partisan polarization by the age group in which the respondent recalls first using social media. It does not seem that there is any real distinguishable pattern which would suggest a correlation between the age when someone begins using social media and their affective partisan polarization.

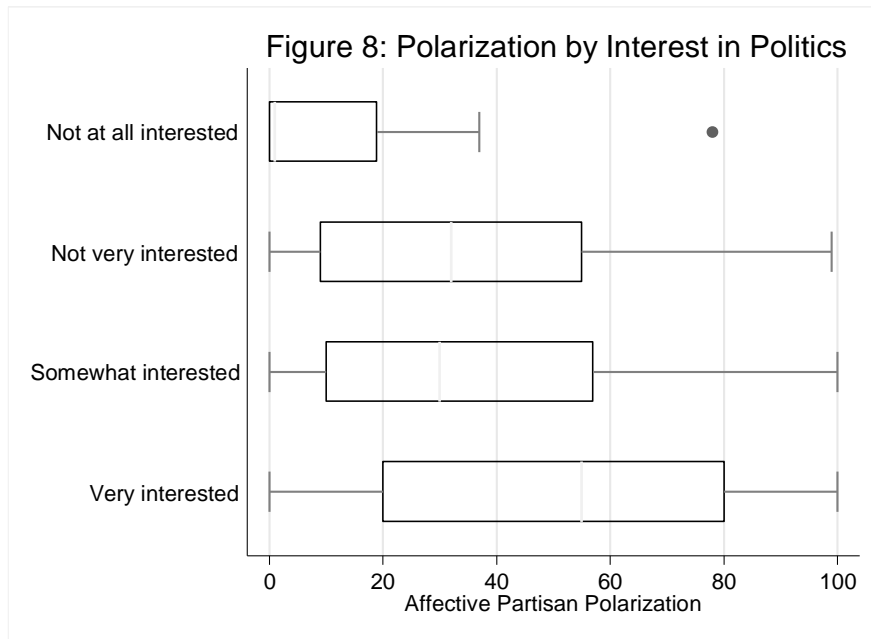
Figure 6 then displays affective partisan polarization by gender. Females in the dataset are in general more polarized than the males. Figure 7 is affective partisan polarization by partisanship. The similarity of the box plots of Democrats and Republicans as compared to Independents should not come as a surprise given this measurement of polarization. If a respondent identifies as an Independent over one of the parties, they are likely to not have strong feelings towards one or the other, or will equally feel positively or negatively about both. For those who identify as either a Democrat or Republican, they are more likely to favor one party over the other, namely the one with which they identify. However, 13 Democrats and 3 Republicans rated the opposing party higher than their own. This could be due to them misinterpreting the question, not paying attention to the questions, or some other difficulty. It is also possible that respondents who fit in this group identified with a party for ideological



reasons, but harbored ill-feelings towards the party-as-organization. Considering most of the differences in feeling thermometers for this group were above -5, it is also possible that the slider nature of the question allowed for enough visual error when respondents generally felt similar about both parties.

Finally, the breakdown of affective partisan polarization by a respondent’s level of interest in politics can be seen in Figure 8. As expected, those who consider themselves “Not at all interested” in politics are by far, on average, the least polarized. The mean for this group is virtually zero, as those not interested in politics at all are unlikely to have strong feelings towards one party or another. The difference between the means of those “Not very interested” and “Somewhat interested” in politics is virtually negligible. Their mean is about what we see as the overall average for affective partisan polarization in both the mechanical turk survey respondents and respondents in the 2016 ANES. These respondents, while only somewhat to not very interested in politics, still likely identify with a party and prefer it over the other. Those who considered themselves “Very interested” had a much higher mean polarization at almost 60-points. This is likely due to those being “Very interested” in politics are also likely to hold strong

opinions on both parties in one way or another. Overall, the trend can be understood that as a respondent's level of interest in politics increases, so does their affective partisan polarization. This hypothesis, along with others will be explored further using multivariate regression analysis.



Regression Analysis

As outlined in Chapter 3, various OLS regression models were examined to evaluate the associations between variables and measures of political polarization. Model 1 was designed to establish the association between the two dependent variables, both measures of political polarization, using the mechanical turk sample. The results of the regression between the two dependent variables, controlling for age and gender, can be seen in Table 4. Age is statistically associated with higher levels of affective partisan polarization at a p-value less than 0.01 with a coefficient of 3.49. While gender was not found to be statistically significant, with a p-value of 0.058 the average difference of 6 points between male and female is notable. Ideological

commitment is highly associated with affective partisan polarization with a coefficient of 15.04 which is statistically significant at a p-value less than 0.001. This relationship can be understood whereby for every increase in ideological commitment (0-3) there is an expected increase in affective partisan polarization by 15 points.

Table 4: Model 1a	
Affective Partisan Polarization Mechanical Turk (<i>n</i> = 298) Model 1a	
Variable	Coefficient (Standard Error)
<i>Age Group</i>	3.49** (1.34)
<i>Male</i>	-6.02 (3.17)
<i>Ideological Commitment</i>	15.04*** (1.56)
<i>Adjusted R2</i>	0.26

p*<0.05, *p*<0.01, ****p*<0.001

An identical regression was ran using the 2016 ANES, using the same age groups and method of coding for ideological commitment. The results for this regression can be seen in Table 5. The results are similar to that of the mechanical turk survey, with both age and ideological commitment being highly statistically associated with higher levels of affective partisan polarization. Gender again did not seem to have much of an association with affective partisan polarization, but males were on average 1 point less polarized than females. Age is statistically associated with higher levels of affective partisan polarization at a p-value less than 0.001 with a coefficient of 1.98. Ideological commitment is statistically associated with higher levels of affective partisan polarization at a p-value less than 0.001 with a coefficient of 10.09.

Table 5: Model 1b

Affective Partisan Polarization	
2016 ANES (<i>n</i> = 2889)	
Model 1b	
Variable	Coefficient (Standard Error)
<i>Age Group</i>	1.98*** (.37)
<i>Male</i>	-1.13 (1.00)
<i>Ideological Commitment</i>	10.09*** (.53)
<i>Adjusted R²</i>	0.12

p*<0.05, *p*<0.01, ****p*<0.001

Models 2a-2c were designed to examine the associations between the three measures of social media use and the levels of affective partisan polarization. The results of the multivariate regression can be seen in Table 6. When testing the three different measures of social media use, only total number of use and political activity on social media were statistically correlated with increased affective partisan polarization. Duration of time in a day one uses social media was not found to be statistically significant. This may indicate some inherent difference in these two measures, or it simply may be an issue with the duration choices available (See Appendix A). Times accessed per day and political activity on social media have coefficients of 3.54 and 2.53, respectively. Additionally, both of these variables are on a scale 0-4, meaning both coefficients can be interpreted in much the same way. While they are coded in different ways, an increase in both variables represents an increase in social media use. 3.54 and 2.53 represent the average increase in the 100-pt scale of affective partisan polarization and the difference between the least amount of use and most would be about 14 and 10 points, respectively.

Table 6: Models 2a-2c

Variable	Affective Partisan Polarization (<i>n</i> = 298)		
	Model 2a Coefficient (Standard Error)	Model 2b Coefficient (Standard Error)	Model 2c Coefficient (Standard Error)
<i>Age Group</i>	2.84 (1.53)	2.71 (1.55)	1.42 (1.50)
<i>Male</i>	-5.87 (3.61)	-5.99 (3.64)	-5.97 (3.65)
<i>Social Media (Times a day)</i>	3.54* (1.51)	--	--
<i>Social Media (Time per day)</i>	--	1.35 (1.60)	--
<i>Social Media (Political Activity)</i>	--	--	2.53* (1.21)
<i>Adjusted R2</i>	0.03	0.01	0.03

**p*<0.05

Table 7 displays Models 3a-3c, which use the same variables for measuring social media use in a multivariate regression using ideological commitment as the dependent variable. Coefficients are not comparable to Models 2a-2c, as ideological commitment is on a scale 0-3, whereas affective partisan polarization is 0-100. That being said, the models which examine associations between social media use and ideological commitment are even less convincing. Only political activity on social media is found to be statistically significant, with a coefficient of .09. Meaning the average distance between those who are not politically active at all on social media and the most politically active on social media is less than 0.3.

Table 7: Models 3a-3c

Variable	Ideological Commitment (<i>n</i> = 298)		
	Model 3a Coefficient (Standard Error)	Model 3b Coefficient (Standard Error)	Model 3c Coefficient (Standard Error)
<i>Age Group</i>	-0.05 (.29)	-0.05 (.05)	-0.05 (.05)
<i>Male</i>	-0.02 (.12)	-0.02 (.12)	-0.04 (.12)
<i>Social Media (Times a day)</i>	0.09 (.06)	--	--
<i>Social Media (Time per day)</i>	--	0.06 (.05)	--
<i>Social Media (Political Activity)</i>	--	--	.09* (.04)
<i>Adjusted R²</i>	0.01	0.00	0.01

**p*<0.05

Models 4 and 5, as seen in Table 8, were evaluated using measurements of consumption of political news through various sources. Model 4, which predicts affective partisan polarization, included measurements of frequency with which a respondent uses different sources of political news. The only statistically significant result was for the Internet variable. For each increase in frequency of using the internet for political news, there is an average increase of 7.73 points of affective partisan polarization. Internet use for political news is a scale 0-4, meaning the average difference in polarization between someone never using the internet and someone

using it daily is about 30 points. This result is statistically significant at a p-value less than 0.001. Also statistically significant was the same internet variable using ideological commitment as the measurement of polarization at a p-value less than 0.01.

Table 8: Models 4 & 5

Variable	Model 4	Model 5
	(Affective Partisan Polarization) (<i>n</i> = 298)	(Ideological Commitment) (<i>n</i> = 298)
	Coefficient (Standard Error)	Coefficient (Standard Error)
<i>Age Group</i>	0.96 (1.52)	-0.08 (.05)
<i>Male</i>	-7.88 (3.52)	-0.06 (.12)
<i>Internet</i>	7.53*** (1.57)	.15** (.05)
<i>Radio</i>	-0.11 (1.51)	0.05 (.05)
<i>Newspaper</i>	-2.20 (1.47)	-0.08 (.05)
<i>Television</i>	1.55 (1.48)	-0.07 (.05)
<i>Adjusted R2</i>	0.10	0.02

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Model 6 is designed to examine the effects of news sources on affective partisan polarization. The difference between model 6 and model 4 is that model 6 does not have age as a confounding variable. This was chosen so that model 6 could be broken down by the different age groups. The results of model 6, broken down by age group, can be seen in Table 9. Broken down by age group shows that only an increase in using the internet for one's source of political news is found to be statistically associated with higher levels of affective partisan polarization.

This effect was found to be statistically significant at a p-value less than 0.001 for respondents age 25-34 and at a p-value less than 0.05 for respondents age 55+.

Table 9: Model 6

Variable	Model 6 Affective Partisan Polarization				
	Age 18-24 (n = 35)	Age 25-34 (n = 120)	Age 35-44 (n = 69)	Age 45-54 (n = 36)	Age 55+ (n = 34)
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
<i>Male</i>	-10.77 (10.84)	-9.52 (5.35)	-12.14 (7.56)	7.99 (11.79)	-5.57 (11.42)
<i>Internet</i>	4.89 (4.19)	7.59*** (2.27)	7.55 (3.91)	8.28 (7.84)	13.05* (5.75)
<i>Radio</i>	-3.20 (5.29)	-2.41 (2.77)	-2.18 (3.15)	6.53 (5.54)	-1.26 (3.84)
<i>Newspaper</i>	7.09 (5.48)	-0.59 (2.64)	-1.26 (3.14)	-9.85 (4.87)	-3.86 (3.76)
<i>Television</i>	0.95 (4.23)	1.70 (2.29)	1.61 (3.36)	0.78 (7.91)	2.24 (3.97)
<i>Adjusted R²</i>	0.19	0.07	0.04	0.06	0.07

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As with models 4 and 5, model 7 uses the same variables as model 6 with ideological commitment as the measure of political polarization. The results of the regression for model 7 can be seen in Table 10. While none of the results for model 7 resulted in statistically significant results, the use of internet for political news is the variable which is positively associated with ideological commitment for most age groups. The average increase in ideological commitment by frequency of internet use for political news ranges from -0.14 for ages 45-54 to 0.31 for ages

18-24. Again, these are increases on a scale 0-3 which measures a respondents self-identified commitment to their ideology.

Table 10: Model 7

Variable	Model 7 Ideological Commitment				
	Age 18-24 (<i>n</i> = 36)	Age 25-34 (<i>n</i> = 121)	Age 35-44 (<i>n</i> = 71)	Age 45-54 (<i>n</i> = 36)	Age 55+ (<i>n</i> = 34)
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
<i>Male</i>	-0.04 (.33)	-0.06 (.20)	-0.04 (.24)	-0.25 (.37)	-0.02 (.35)
<i>Internet</i>	0.31 (.13)	0.10 (.09)	0.22 (.13)	-0.14 (.25)	0.20 (.18)
<i>Radio</i>	0.15 (.16)	-0.04 (.10)	-0.04 (.10)	0.17 (.17)	0.08 (.12)
<i>Newspaper</i>	-0.10 (.17)	0.03 (.10)	-0.02 (.10)	-0.13 (.15)	-0.16 (.12)
<i>Television</i>	-0.11 (.13)	-0.06 (.09)	-0.08 (.11)	0.11 (.25)	-0.10 (.12)
<i>Adjusted R²</i>	0.04	-0.03	-0.03	-0.04	-0.01

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Chapter V: Discussion & Conclusions

Discussion

Those who participate in mechanical turk surveys are necessarily some of the most adept internet users a researcher could examine. However, even among this group, the nature of one's internet activity can vary greatly from respondent to respondent. The results of the survey show that while these respondents spend their time on the internet in very similar ways in terms of using mechanical turk, the rest of their internet activity varies. Additionally, the results of this study show that there is a range of ideological and political identities among mechanical turk workers. This makes the dataset extremely useful in examining possible associations between internet use and political polarization. This section will examine the hypotheses presented in the previous chapter, as well as identify some patterns and associations from analyzing the dataset.

As a reminder, hypothesis 1 was designed to examine the claim that ideological commitment and affective partisanship polarization are associated. Hypothesis 1 was:

H1: As a respondent's level of ideological commitment increases, their level of affective partisan polarization will increase.

The hypothesis is based on evidence that ideology and partisanship are closely tied. That is, Liberals are likely Democrats and Conservatives are likely Republicans. This study does not attempt to make a claim about whether ideology mostly influences partisanship or whether partisanship is the cause of self-identified ideology. The hypothesis does make a prediction based on the level of commitment to ideology as it relates to polarization. Again, the ideological commitment variable is an absolute value of the distance from the middle on a 7-point ideological scale. Because the hypothesis is predicting higher polarization among more

ideologically committed respondents, it does not matter if they are liberal or conservative. The model created then examines the effects of ideological commitment. The model is:

$$\text{Model 1: } \textit{Affective Partisan Polarization}_i = \beta_0 + \beta_1 \textit{age}_i + \beta_2 \textit{gender}_i + \beta_3 \textit{Ideological Commitment}_i + \varepsilon_i$$

Using OLS regression, this model produced an Adjusted R-squared value of .26 with the coefficient of ideological commitment being 15.04. The association with ideological commitment and affective partisan polarization was found to be statistically significant at a p-value less than 0.001. This result supports the hypothesis that stronger ideological commitment is associated with higher affective partisan polarization. This is consistent with evidence that the more committed someone is ideologically, the more likely they are to be more committed to a political party as well.

Hypotheses 2 and 3, which were accompanied by Models 2 and 3, sought to examine the relationship between three different measurements of social media use and political polarization. The second and third hypotheses stated:

H2: As a respondent's level of social media use increases, their level of affective partisan polarization will increase.

H3: As a respondent's level of social media use increases, their level of ideological commitment will increase.

Models 2a-2c, which each used a different measure of social media, proved to be fairly weak in predicting affective partisan polarization. However, two of the models produced statistically significant results for the effects of social media use on polarization. Controlling for age and gender, the amount of times someone accesses social media per day and their political activity on social media were both associated with higher levels of affective partisan

polarization. For models 3a-3c, the same measurements of social media were evaluated with ideological commitment as the measure of political polarization. Again, the models which included age and gender were not very robust. However, the effect of political activity on social media was seen to be associated with higher levels of ideological commitment and was statistically significant at a p-value of less than 0.05. Models 2 and 3 were ultimately not great predictors of either measurement of political polarization. However, it is notable that at least one measurement of social media use was statistically correlated with higher levels of polarization for both models, while age and gender were not.

Hypotheses 4 and 5, as well as their corresponding models differ in their measurement of political polarization, just as hypotheses and models 2 and 3 did. Instead of using measurements of social media use, these two models used different sources of political news as predictors of polarization. For Internet, Television, Radio, and Newspapers, variables were coded 0-4 based on the frequency with which a respondent indicated they use each medium of political news. All sources were included in the model as it is expected that many respondents might have multiple sources of political news and those who consume more from multiple sources are likely to be more polarized. Both model 4 and 5 have only one variable which is statistically significant and that is the frequency with which a respondent uses the internet for political news. This is consistent with hypotheses 4 and 5, as not only is internet the source most associated with higher levels of polarization, it is the only one which is statistically significant. Again, it is important to understand that this is not a measurement of internet use at all, but rather the choice to use the internet as a source of political information. All of the respondents in the online survey have internet access and are clearly adept enough at using it to navigate a service like mechanical turk, so the difference between someone in the dataset who responds “Never” to using the internet for

political news is doing so out of choice. Even though 70% of respondents indicated they use the internet for political news a few times a week at minimum, there is a significant increase in polarization measurements as a respondent's use of the internet for political news increases.

Models 6 and 7, which were designed to examine the effects of social media use on political polarization by age group, may have been more informative given a larger sample. The age group of 25-34 was by far the most representative in the sample, and was also the only one which resulted in statistically significant results. Should the survey have had a larger sample with more representation in other age groups, there may have been a more statistically significant result. Without a larger sample size, it is difficult to make any conclusions about individual age groups, besides that in the 25-34 age group there seems to be a statistically significant association between internet use and political polarization.

Conclusions

The purpose of this study was to utilize Amazon Mechanical Turk as a way to create a unique survey in order to fill gaps in existing data on political polarization. While internet use and news consumption patterns can be gathered from sources like the ANES, there is little information which asks specific questions about social media use. Initially, it was unclear how similar the profiles of mechanical turk users would be to those who were surveyed in the 2016 ANES but demographic information seems to be fairly close across both datasets. One clear distinction is that while the ANES is conducted through in-person interviews, the mechanical turk survey is distributed entirely online. Thus, using mechanical turk to run a survey automatically prohibits accessing respondents who simply do not have access to the internet. It is then impossible to examine differences of political polarization between those who do have

internet access and those who do not. However, using mechanical turk for information about a respondent's social media use is actually quite useful. Because the respondent has access to the internet, they are more likely to be active on some kind of social media platform. When attempting to isolate the effects of social media use, it is useful to sample from people who have access to the internet.

The first hypothesis, which examined the association between the two dependent variables in the study, was supported by the OLS regression using Model 1. Higher degrees of ideological commitment were indeed associated higher levels of affective partisan polarization. The hypothesis was based on the idea that those who are ideologically extremely liberal or conservative are likely to feel more strongly about their partisanship as well. Evidence for the hypothesis is also supported by existing literature that Americans' ideology and partisanship are closely related. In fact, it is likely that many Americans see the terms "Liberal" and "Conservative" as interchangeable synonyms to "Democrat" and "Republican".

The second and third hypotheses were evaluated by using specific questions about a respondent's social media use in order to examine associations with higher levels of social media use and political polarization. The results for the corresponding models did not provide substantial evidence for the claim that social media use contributes to either affective partisan polarization or ideological commitment. While some recent literature on polarization has suggested that internet use might play little to no role in political polarization, it is based on using age as a proxy for social media use. Boxell et al. (2017) uses the evidence of older people becoming more polarized than younger people in recent years to suggest that internet use could not possibly be the reasoning behind increasing polarization. The results of models 2 and 3, however, show social media use as more closely associated with higher levels of polarization

than age. So, while the models were not robust by themselves, the results may suggest that closer examination of the effects of social media use on polarization may be required than simply using age as a proxy.

The final set of hypotheses moves away from measurements of social media use to measurements of sources of political news. Both hypotheses make the prediction that greater internet use, for the purposes of accessing political news, will be the most associated with higher levels of political polarization. Also included in these models is television, radio, and newspapers as options for sources of political news. These hypotheses are modeled after theories on political communication which emphasize high-choice media environments. The internet represents the source of political news which offers the most amount of choice, thus making it the most prone to polarizing those who use it. However, it is not just the choices *among* political news options on the internet that makes it a great predictor of polarization. In fact, just as important as the choices among political news, is the choices of other things to do on the internet. When someone makes the decision to access a particular website for political news on the internet, they are choosing over every other website available on the internet. Therefore, those who are accessing political news on the internet are doing so because they are likely quite interested in politics to begin with. The results of both models support the hypotheses that the internet is the most predictive of higher levels of polarization compared to other sources of political news. Increases in accessing political news on the internet was highly correlated with an increase in affective partisan polarization and was statistically significant at a p-value less than 0.001. Accessing political news on the internet was also highly correlated with an increase in ideological commitment and was statistically significant at a p-value less than 0.01. While the hypotheses suggest that it is accessing political news on the internet which is associated with higher levels of

political polarization, vice-versa could be true. It could be that those who are already political polarized for some other reason are the kinds of people who actively use the internet for political news. In fact, if a respondent holds extreme or fringe enough political opinions, the internet may be the only place in which they can access news which aligns with their political preferences.

Overall, while the main purpose of the study was to examine the unique effects of social media use on political polarization, little evidence was found to support that the two are significantly correlated. It may be that other measures of a person's social media use are being overlooked in the study, but it seems that at least the amount of time spent on social media by itself is not a significant predictor of political polarization. The study also did not find any evidence that beginning to use social media at a young age is associated with higher levels of political polarization. A relatively robust model 4 and 5 is evidence to support that using the internet as a source of political news is associated with higher levels of political polarization. While the nature or even cause of this association are out of the scope of this study, the mechanical turk survey did shed some light on the connections between an individual's political activity on the internet and their tendency to be politically polarized.

Appendices

Appendix A

1. What is your age?
 - a. 18-24
 - b. 25-34
 - c. 35-44
 - d. 45-54
 - e. Over 55
2. What is your gender?
 - a. Female
 - b. Male
 - c. Other (Please Specify)
 - d. Prefer not to say
3. Where would you place yourself on this scale, or haven't you thought much about this?
 - a. Extremely Liberal
 - b. Liberal
 - c. Slightly Liberal
 - d. Moderate; middle of the road
 - e. Slightly conservative
 - f. Conservative
 - g. Extremely Conservative
 - h. Have not thought much about this
4. Generally speaking, which of the following best describes you?
 - a. Democrat
 - b. Independent
 - c. Republican
 - d. Other
5. How would you rate the Democratic party, on a scale 0-100? 0 being very unfavorable, 50 being neither unfavorable nor favorable, and 100 being very favorable.
 - a. 0-100
6. How would you rate the Republican party, on a scale 0-100? 0 being very unfavorable, 50 being neither unfavorable nor favorable, and 100 being very favorable.
 - a. 0-100
7. Around what age did you begin using social media sites such as Twitter or Facebook?
 - a. 10-13
 - b. 14-17
 - c. 18-21
 - d. 22-25
 - e. 26-29
 - f. 30-40
 - g. 40-50

- h. 50+
 - i. Do not use social media sites
8. How many times a day do you look at social media sites such as Twitter or Facebook?
- a. Not everyday
 - b. Once a day
 - c. 2-5 times a day
 - d. 5-10 times a day
 - e. 10+ times
9. On an average day, how much time do you spend on social media sites such as Twitter or Facebook?
- a. Less than 30 minutes
 - b. 30-60 minutes
 - c. 1-2 hours
 - d. 2-3 hours
 - e. 3+ hours
10. How interested are you in politics?
- a. Very interested
 - b. Somewhat interested
 - c. Not very interested
 - d. Not at all interested
11. How often do you...
- a. Read political content in a newspaper?
 - i. Daily
 - ii. A few times a week
 - iii. A few times a month
 - iv. A few times a year
 - v. Never
 - b. Watch political news on television?
 - i. Daily
 - ii. A few times a week
 - iii. A few times a month
 - iv. A few times a year
 - v. Never
 - c. Listen to political news on the radio?
 - i. Daily
 - ii. A few times a week
 - iii. A few times a month
 - iv. A few times a year
 - v. Never
 - d. Use the internet to access political news?
 - i. Daily
 - ii. A few times a week
 - iii. A few times a month

- iv. A few times a year
- v. Never

12. Which type of media is most important to you for accessing political information?

(Choose one)

- a. Newspaper
 - b. Television
 - c. Radio
 - d. Internet
 - e. Other
13. Do you use social networking sites to...
- a. Follow one or more online news sources?
 - i. Yes
 - ii. No
 - b. Follow any politicians or political parties?
 - i. Yes
 - ii. No
 - c. See what your friends think about political issues?
 - i. Yes
 - ii. No
 - d. Join groups for more information about political issues?
 - i. Yes
 - ii. No

Appendix B

<i>Variable</i>	<i>Description</i>	<i>Predicted Association with Polarization</i>
Independent Variables		
<i>Age Group</i>	Age groups: 18-24,25-34,35-44,55+	Older age groups should be associated with high levels of polarization.
<i>Gender</i>	The gender of the respondent, coded female as 0 and male as 1.	Gender should have no association with level of polarization.
<i>Ideology</i>	7-pt ideological scale. "Extremely Liberal" to "Extremely Conservative".	Being closer to either far end of the ideological spectrum should be associated with higher levels of polarization.
<i>Partisanship</i>	Respondent's partisan identity as either Democrat, Republican, or Independent. Respondents also had the option to specify their party identification.	Those who identified as either a Democrat or Republican should be associated with higher levels of polarization than those who identified as Independents.
<i>Age Start</i>	Age group respondent was in when they began using social media. Age groups: 13 or younger, 14-17, 18-21, 22-25, 26-29, 30-40, 40-50, 50 or older	Those who began using social media at a younger age should be associated with higher levels of polarization.
<i>Social Media Use (Times a day)</i>	Number of times the respondent uses social media on an average day, ranging from "Not everyday" to "10+ times a day" See Appendix A for all options.	Higher number of social media use per day should be associated with higher levels of polarization.
<i>Social Media Use (Time per day)</i>	Amount of total time one uses social media on an average day, ranging from "Less than 30 minutes" to "3+ hours". See Appendix A for all options.	Higher amounts of time spent on social media per day should be associated with higher levels of polarization.
<i>Social Media Use (Political Activity)</i>	Ratio variable coded as scale 0-4 measuring level of political activity on social media. Measured as number of "Yes" responses to Question 13 (See Appendix A).	Higher amounts of political activity on social media should be associated with higher levels of polarization.

<i>Interest in Politics</i>	Respondent's level of interest in politics. Respondents could choose "Not at all interested", "Not very interested", "Somewhat interested", and "Very interested"	Higher levels of interest in politics should be associated with higher levels of polarization.
<i>Political News: Internet</i>	How often a respondent uses the internet to access political news, ranging from "Never" to "Daily", See Appendix A for all options.	More frequent access to political news via Internet should be associated with higher levels of polarization. Accessing political news via Internet should be associated more to higher levels of polarization than TV, Radio, and Newspaper.
<i>Political News: Television</i>	How often a respondent uses television to access political news, ranging from "Never" to "Daily", See Appendix A for all options.	More frequent access to political news via Television should be associated with higher levels of polarization. Accessing political news via Television should be associated more to higher levels of polarization than Radio and Newspaper but lower than Internet.
<i>Political News: Newspaper</i>	How often a respondent uses the newspaper to access political news, ranging from "Never" to "Daily", See Appendix A for all options.	More frequent access to political news via Newspaper should be associated with higher levels of polarization. Accessing political news via Newspaper should be associated with lower levels of polarization than Radio, Television and Internet.
<i>Political News: Radio</i>	How often a respondent uses the radio to access political news, ranging from "Never" to "Daily", See Appendix A for all options.	More frequent access to political news via Radio should be associated with higher levels of polarization. Accessing political news via Radio should be associated with higher levels of polarization than Newspaper but lower than Television and Internet.

*Most
Important
Source of
Political
News*

Respondent's most important source of political news. Options are Newspaper, Television, Radio, Internet, and Other.

Higher levels of polarization should be associated most with Internet being the most important source of a respondent's political news. Television, Radio, and Newspaper are less associated with higher levels of polarization, in descending order.

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