KIDS THESE DAYS:

POLITICAL KNOWLEDGE, YOUNG PEOPLE,

AND THE INTERNET

by

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ABSTRACT

In order for Americans to fully and effectively participate in their government, they must be adequately informed and knowledgeable about the policies, people, and processes therein. Prior literature has shown that those with lower levels of political information (women, less educated, and the young) are often the same groups whose political interests are under-represented in government. For this reason, this dissertation seeks to determine where and how political knowledge is distributed amongst demographic groups and also how, specifically, Internet access and use affect overall levels of political knowledge.

As with most new media, political scientists were unsure the effect the Internet might have on the American public. Initial theories on ways the Internet would trigger population-wide gains in political knowledge have given way to more current theories about why this has not been the case. This dissertation’s purpose is to add to the literature on the Internet and political knowledge by assessing the ways traditional political knowledge gaps have been affected by increases in Internet access and use.

At the forefront of the three major analyses is the political knowledge gap between young people and older cohorts. Are the young, often provided with more opportunities for access and higher skills in Internet use, gaining political knowledge at a faster rate than older cohorts? Analyses of the effects of Internet access and Internet use are performed over separate survey data. One of the analyses in this dissertation also focuses on two additional political knowledge gaps, the education-and gender-based knowledge gaps, and how frequency of Internet use compares to the use of more traditional media.

In addition to spotlighting the ways Internet and other media have affected political knowledge levels, measurement issues relating to political knowledge in the American
National Election surveys are also addressed. In two of the three analyses, new composite items are constructed and tested as measures of political knowledge of the American population.
DEDICATION

This dissertation is dedicated to my family. Without their love and support, it would not exist.
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CONTENTS

DEDICATION iv

ACKNOWLEDGEMENTS v

LIST OF TABLES x

LIST OF FIGURES xi

1 INTRODUCTION 1
   1.1 Dissertation Themes ............................................ 4
   1.2 Overview ........................................................ 7

2 POLITICAL KNOWLEDGE AND THE INTERNET: A LITERATURE REVIEW 10
   2.1 Past Perspectives on Political Knowledge ......................... 10
      2.1.1 The Age Knowledge Gap ...................................... 12
      2.1.2 The Gender Knowledge Gap .................................. 13
      2.1.3 The Race Knowledge Gap .................................... 16
   2.2 Measuring Political Knowledge ................................... 17
   2.3 Media Effects on Political Knowledge ............................ 25
      2.3.1 Traditional Media ........................................... 25
      2.3.2 New Media and the Internet ................................ 28

3 POLITICAL KNOWLEDGE AND INTERNET ACCESS, 1988-2004 34
   3.1 Introduction ...................................................... 34
3.2 Theory and Hypotheses ............................................. 35
3.3 Method .................................................................. 39
   3.3.1 Data and Measures ......................................... 39
   3.3.2 Statistical Procedures ...................................... 45
3.4 Findings ................................................................ 45
3.5 Conclusion ............................................................ 53

4 INTERNET USE AND KNOWLEDGE LEVELS IN THE 2008 ANES 55
4.1 Introduction .......................................................... 55
4.2 Theory and Expectations ......................................... 56
4.3 Method ................................................................. 59
   4.3.1 Data .............................................................. 59
   4.3.2 Measures ....................................................... 60
   4.3.3 Statistical Procedures ...................................... 64
4.4 Findings ................................................................ 64
4.5 Conclusion ............................................................ 67

5 MEDIA USE AND POLITICAL KNOWLEDGE IN THE 2012 ANES 70
5.1 Introduction .......................................................... 70
5.2 Theory and Expectations ......................................... 71
   5.2.1 Establishing Media Use .................................... 71
   5.2.2 Media Use and Knowledge Gaps ...................... 73
5.3 Method ................................................................. 77
   5.3.1 Data .............................................................. 77
   5.3.2 Measures ....................................................... 78
   5.3.3 Statistical Procedures ...................................... 80
5.4 Findings ................................................................ 81
   5.4.1 Media Use Models .......................................... 81
5.4.2 Interaction Effect Models ........................................ 84
5.5 Conclusion .............................................................. 94

6 CONCLUSION .............................................................. 97
6.1 Chapter Summaries ...................................................... 97
6.2 Themes Revisited ....................................................... 100
6.3 Closing Thoughts ....................................................... 103

REFERENCES .............................................................. 104

Appendices

Appendix A VARIABLES AND CODINGS ................................. 111
Appendix B 2008 ANES OFFICE RECOGNITION CODES ................. 114
LIST OF TABLES

3.1 Multiple Linear Regression Models of Political Knowledge .......................... 50
4.1 Proportions for 2008 ANES Office Recognition Items .............................. 61
4.2 Proportions for the Sum of the 2008 ANES Office Recognition Items .......... 61
4.3 Linear Regression Model of Political Knowledge with Interaction Effect ....... 65
5.1 Multivariate Regression Predicting Informational Media Use ....................... 82
5.2 Predicting Political Knowledge - Education Gap ........................................ 85
5.3 Predicting Political Knowledge - Gender Gap ............................................ 88
5.4 Predicting Political Knowledge - Age Gap ............................................... 91
LIST OF FIGURES

3.1 Political Knowledge Distributions: Full Samples ........................................ 42
3.2 Political Knowledge Distributions: Young People Only ............................... 43
3.3 Average Political Knowledge Levels: Full Sample ........................................ 46
3.4 Average Political Knowledge Levels: Young and Non-young ............................ 47
3.5 Average Political Knowledge Levels: Young Males and Females ....................... 48
3.6 Average Political Knowledge Levels: Whites and Non-whites .......................... 49
3.7 Average Political Knowledge Levels: Young Internet and Non-Internet Users .... 51
3.8 Predicted Marginal Effects: Young x Internet Access Interaction ....................... 52

4.1 Predicted Values of Political Knowledge by Internet Use ................................ 66

5.1 Predictive Values of Political Knowledge - Education Gap ............................. 86
5.2 Predictive Values of Political Knowledge - Gender Gap ................................. 90
5.3 Predictive Values of Political Knowledge - Age Gap ..................................... 93
Democracy, as a system of government, relies on citizen participation. Not blind, disinterested participation, but active and informed participation. If the goal of a democracy is to have the government reflect, in form and function, its constituent people, then those people must be aware and able to act on their own preferences. For this reason, the political knowledge of a citizenry is of upmost importance.

Political knowledge allows participants to know, in advance, how their participation should affect their political system. If we were to consider democratic politics as a game, knowledge of the players, rules, and prizes, would allow for intentional and strategic participation. In a perfect democratic system, all citizens would be fully aware and cognizant of aspects of the system in which they participate. The United States, however, is not a perfect system. In fact, far from it. In general, Americans have decidedly less than full information when it comes to the “political game.”

Not only are overall levels of political knowledge suboptimal, but the distribution of political knowledge throughout the nation varies between important subpopulations. Political scientists have been aware of political knowledge disparities between age, gender, and formal education groups since the birth of the discipline. Over time, social science literature has uncovered a disturbing pattern that suggests those with the relatively lowest political influence often also have the lowest levels of political knowledge (Delli Carpini and Keeter 1996, 177).

Are Americans on the brink of disaster due to their lack of political knowledge? Certainly not. Elections continue to take place, and public opinion polls show Americans
are generally satisfied with the overall functioning of their government. But could American voters, on the whole, be more informed about the politics? Absolutely so. And would more informed citizens be better able to affect desired change in government outcomes? Certainly.

While scholars seem to converge upon the idea that Americans, in general, are politically uninformed, there is not always consensus about the consequences. Some would argue that without an informed public, democracy is unable to function in the fashion intended by the founders and that this lack of information is a normative problem (Delli Carpini and Keeter 1996; Althaus 1998; Delli Carpini 2005) and steps should be taken to rectify it.

Others, however, feel that despite low levels of political knowledge among the populace, democracy suffers little due to cues and heuristics provided by elected officials and political elites (Carmines and Kuklinski 1990; Kuklinski, Quirk, Jerit, and Rich 2001). Further normative concern is, for some scholars, alleviated by the findings that individual shortfalls are canceled out in the larger electorate (Page and Shapiro 2010) or that contemporary models overstate the importance of political knowledge in determining political action (Levendusky 2011).

Bartels (1996) sets out to determine if recent scholarship downplaying the effects of an information-poor electorate holds up when actual votes are compared with simulated “full-information” votes. Bartels hypothesizes, following the suggestions of contemporary literature, that ill-informed voters, using cues provided by parties and elites, should vote in a way that is consistent with how they might vote if they had full political information and knowledge. Should this be the case, the aggregation of all voters should provide a result similar to what an aggregate fully informed electorate result might be (Bartels 1996, 198-200).

Bartels uses presidential vote data from six ANES surveys (1972, 1976, 1980, 1984, 1988, and 1992), paying special attention to the categorization of each respondent’s political
knowledge by the ANES interviewer. Bartels estimates how a fully informed member of specific demographic groups might have voted in the presidential elections. These “fully informed” votes are aggregated and compared to actual votes from the elections. Interestingly, Bartels finds that both Democratic and incumbent presidential candidates enjoy significant advantages compared to “full information” voting. These advantages exist both in individual voting patterns and in the aggregate (Bartels 1996, 220).

In determining the extent to which political knowledge can determine political actions and outcomes, some scholars have been able to pinpoint certain circumstances where knowledge levels tend to matter more than others. Basinger and Lavine (2005) find that ambivalent voters with low knowledge and low campaign competition use economic voting (voting based on the determination of whether or not they are better off than the last election), while ambivalent voters with high knowledge and in instances of high competition use ideological voting (voting based on the party they identify with). In this instance the individual’s view on, or passion for, politics changes the way political knowledge affects them. Further, the amount of competition in the campaign can change the lens through which the voter sees the election.

Gilens (2001) finds evidence that political information that matters is not simply general political knowledge but also the specific facts germane to particular political issues asked about in a survey. Using a survey of 2,000 voters shortly before the 2008 election, Jessee (2010) shows that voters with high levels of political knowledge are more likely to vote for candidates that are closer to their actual policy preferences rather than voting blindly with their stated party as those with low levels of political knowledge might.

This dissertation project examines where current levels of political knowledge lie, while also determining how the Internet and mass media have and continue to affect political knowledge.
1.1 Dissertation Themes

*Political Knowledge*  Possession of political knowledge is a fundamental aspect of
democratic participation. Each chapter of this dissertation focuses on one or more specific
aspects of political knowledge. How much political knowledge the American populace has
and how are those levels of knowledge growing or shrinking are major questions at the
heart of this project. The focus of the dissertation is to analyze political knowledge from
the objective viewpoint that this knowledge is a valuable commodity that is unevenly
distributed. These distributions and their effects are readily investigated and interpreted
throughout the chapters here.

In addition to the discussion of Political Knowledge as a concept, its measurement is
also a theme throughout the project. In each chapter, a measure of political knowledge is
developed from the data available and implemented into the research design. All of the
data come from the ongoing American National Election Studies, more specifically, the
ANES Time Series Studies. The ANES’ mission, stated on its website, “is to inform
explanations of election outcomes by providing data that support rich hypothesis testing,
maximize methodological excellence, measure many variables, and promote comparisons
across people, contexts, and time.”

Starting in 1948, the ANES has conducted surveys of the American population in
presidential, and most mid-term, election years. For some time, the data from these
surveys has been available to the public via the ANES’ website: electionstudies.org.

Three separate data sets are used in this project: The ANES Cumulative Data file,
for the use of each dataset are included in the subsequent chapters.

As one of the largest and longest-standing national election-year surveys, the data
from the ANES provide researchers with the opportunity to compare public sentiment and
behavior across time.
Young People  A second theme of this dissertation is young people. These young citizens, now able to vote in national elections for the first or second time, find themselves at a critical time in their political socialization. Political habits formed around young people’s entrance into the electorate are likely to directly affect their habits down the road.

When the political knowledge of individual groups and subpopulations is evaluated, young people often find themselves at or near the bottom of the list. Be it due to lack of interest, lack of time, or lack of experience, young people consistently have lower levels of political knowledge than older cohorts.

Then, as a cohort of young people grow older, their aggregate level of political knowledge often rises. So, if each subsequent cohort of young people have the potential for high and effective levels of political knowledge, then low levels of knowledge around their first or second election should not be a cause for concern. This is good news, except that we often find each subsequent cohort enter the electorate with lower knowledge than the previous.

The inevitable conclusion of this pattern is a citizenry whose aggregate political knowledge begins to decline as the older, more knowledgeable cohorts begin to exit the electorate. This scenario is in no way guaranteed, but is a possibility. Young people could also, through some societal shift, begin to force aggregate political knowledge in the opposite (upward) direction if they began to enter with increased knowledge over the previous generational group. The only way to know current political knowledge levels, and then be able to predict future levels, is to study young people, their political knowledge, and assess how media use and choices affect that knowledge.

The Internet  The third major theme of this dissertation is the effects of the Internet on the first two themes. The Pew Internet and American Life Project (Zickuhr and Madden 2012) reports growth of daily Internet users from 14% of all adults in 1995, to 82% of all
adults in June, 2012. The same project reports 98% of young adults (ages 18-29) are daily Internet users in 2012.

The Internet has become a part of everyday life for a vast majority of Americans. They use the Internet for news, communication, and entertainment. Decades of research exist on traditional forms of mass media, but the Internet is still relatively new and its effects on Americans and their political knowledge are not yet fully understood.

Unlike a radio or television program, or even a newspaper or magazine article, the Internet has no verifiable “end.” More and more information is uploaded to the Internet everyday, creating an ever-growing repository of knowledge generated by many different authors from many different locations with many different backgrounds and motivations. Some of the prior research on media effects can still apply to the way the Internet affects American’s political knowledge, but we must also recognize that the online world is often a different animal all-together.

At the same time, much like network television and the cable revolution that followed it, Americans are not limited to consumption options that might only increase their political knowledge. For every politics-based web site or article on the Internet, hundreds more non-political options also exist.

Throughout this dissertation, the influence of the Internet on political knowledge is the main avenue by which all other questions are addressed. This dissertation begins at the intersection of two competing theories about media use and political socialization. The first, that the Internet and its relatively endless depth of available political information will serve as a great equalizer allowing those with traditionally less political knowledge to play catch-up at little cost. The second theory being that the incredible breadth of available information on the Internet will allow those that do not wish to be informed about politics to remain uninformed with a simple click of the computer mouse. Instead of being the equalizer, this theory suggests that the Internet might compound the political knowledge discrepancies already found in the electorate. Does political information available on the
Internet serve to close established political knowledge gaps? Or does the abundance of informational choices (both political and nonpolitical) instead widen political knowledge gaps?

1.2 Overview

This dissertation proceeds as follows: After this introductory chapter, Chapter 2 will address the prior literature associated with the intersection of the three major themes. Special focus will be given to past perspectives on the concept of political knowledge as well as debates over its measurement and operationalization in the discipline. In addition, this chapter will review the literature surrounding traditional media effects on political knowledge. This chapter also focuses on recent research involving the rise of the Internet and how it has affected Americans’ political knowledge.

Chapter 3, the first of the three main pieces, fits into the political science literature on the “first digital divide,” which concerns differences in Internet access as opposed to actual use. Early studies of the effects of the Internet were limited to asking respondents whether or not they had access to the Internet at work, at home, or otherwise. Initially, the Internet was viewed as a luxury commodity and only those with higher socioeconomic status were able to afford or were likely to be around Internet access.

In order to analyze the time-period when Internet access grew the fastest, the ANES Cumulative data file is employed in Chapter 3. Specifically, the survey data associated with the Presidential elections of 1988, 1992, 1996, 2000, and 2004, are combined for a large sample size. The first hurdle in the analysis of Chapter 3 is to develop a political knowledge scale with similar items. Once this scale is developed, the political knowledge levels of specific groups are compared: Young and older cohorts, followed by gender, racial, and Internet access groups within the young cohort. These graphical comparisons show how political knowledge was distributed as Internet access was growing across the electorate.
Chapter 3 also includes linear regression models of political knowledge both with and without an interaction effect of young people and Internet access. These regression models provide a clearer picture as to whether or not Internet access was affecting political knowledge differently across age cohorts.

Chapter 4 concerns the issues surrounding the coding of the four Open Response Office Recognition items from the 2008 ANES Time Series study. These items provide a unique opportunity to measure political knowledge since we are able to order those codes into varying degrees of “correct-ness” which can be use to represent a respondents level of knowledge about a certain fact or figure. Gradual steps of correctness rather than a hard-line right and wrong can help further explain, and in greater detail, just how much political knowledge Americans have and from where they might be receiving varying levels of political information.

In Chapter 4’s analysis, the Office Recognition item responses from the 2008 ANES study are coded for no credit, some credit, or full credit and then summed across the four items. This process provides a reliable measure of political knowledge that includes an aspect of knowledge “depth” not typically available to the discipline.

Chapter 4 further focuses on the political knowledge of young people and assesses whether intensive Internet use, not just access, reduces the information gap with older, traditionally more knowledgeable, Americans. This change from Internet access to Internet use coincides with the development of the literature from the first to the second digital divide\(^1\). Now that Internet access has become near-ubiquitous, differences associated with access have become hard to determine. Instead, scholars have begun to focus on how changes in Internet use lead to important gaps in participation, knowledge, and engagement.

Specifically, Chapter 4 focuses on frequency of Internet use to gain knowledge about the 2008 Presidential campaign. A linear regression model is used to assess how frequency

\(^1\)Explained further in Chapter 2.
of Internet use (for political information) affects the young (ages 18-29) and older cohorts differently. Again, a graphical representation of the marginal effects of youth and Internet use provide a glimpse at whether or not use affects the age groups differently. The age-based knowledge gap has long been a part of the American electorate, and Chapter 4’s analysis serves as an assessment of whether or not Internet use is a solution to the traditional political knowledge deficiencies in young Americans.

The third and final piece of the dissertation project, found in Chapter 5, continues in the vein of the second digital divide by again focusing on Internet use. This time, however, the analysis steps back to examine the effects of increased media (both traditional and the Internet) use on specific political knowledge gaps traditionally found in the United States. Addressed here are speculations that the Internet could serve as a political knowledge equalizer, able to provide seemingly boundless political information in a way traditional media types could not.

Using the 2012 ANES Time Series Study, Chapter 5 employs a linear regression model to predict political informational use of four types of media use (Internet, television, newspaper, and radio). Then, once use patterns across demographic groups are discussed, media use variables are interacted with three traditional knowledge gaps (education, gender, and age). These interaction effects are employed to determine if increases in media use lead to the closing or widening of these gaps. Finally, graphical representations again provide a clearer picture as to how the media types are affecting political knowledge gaps.

The contribution of Chapter 5 comes from the comparisons of the other media types to Internet use. The view of the Internet as a political knowledge “game-changer” can be fully addressed when its real-world effects are compared to traditional media.

Lastly, chapter 6 provides a conclusion that ties together the work of the other chapters. The Conclusion readdress the themes introduced here in the Introduction and offers some closing remarks.
2.1 Past Perspectives on Political Knowledge

Since The American Voter, political scientists have placed value on the amount of political knowledge and information voters possess, and the effect it has on their political actions. In laying out their early work on issue voting, Campbell, Converse, Miller, and Stokes (1964)’s first step is establishing that the political issue at hand is cognized in some form by the voter. Campbell et al. (1964) lay the groundwork for what has largely been a pessimistic view of American citizens’ ability to vote on the basis of issues, a basic tenant of democratic theory, due to their lack of knowledge about candidates’ positions and the workings of government. They find that only one in three respondents could pass a two-hurdle test of identifying a political issue and then knowing what the government was doing in regard to the issue (Campbell et al. 1964, 100).

Converse (1964) also speaks of an alarmingly low level of political sophistication among American voters. Converse reasons this is a consequence of different educational attainment levels and political involvement, but also “strongly modified as well by different specialized interests and tastes that individuals have acquired over time (one for politics, another for religious activity, another for fishing, and so forth).” Goren (2003) echoes these findings in more recent literature, “Regardless of how the concept is measured, the answer is always the same. Most people are not terribly informed about government and politics.”

In their seminal text, What Americans Know about Politics and Why it Matters, Delli Carpini and Keeter classify political knowledge into three categories; what
government is or the rules of the game, what it does or the substance of politics, and who
government is or people and parties (Delli Carpini and Keeter 1996, 65). Using survey data
from 1940 to 1994, they find that the American public is not as politically ignorant as some
might suggest. While woefully under-informed, Americans are not altogether uninformed.

Finding that there are “no obvious patterns to the particular facts citizens are more
or less likely to know” (Delli Carpini and Keeter 1996, 72), knowledge decreases as less
visible political institutions are asked about. Interestingly, respondents were much more
likely to know throwaway facts like President Bush’s dog’s name or his hatred of broccoli
(Delli Carpini and Keeter 1996, 76). These patterns are echoed when the political
knowledge questions are coded for their level of depth. Delli Carpini and Keeter find that
respondents were able to answer just under half of the “surface knowledge” questions such
as naming one Fifth Amendment right or naming at least one Senator from their home
state, but the average percent correct for “deep knowledge” including naming all rights
guaranteed by the Fifth Amendment or naming the proportion of the federal budget
devoted to Social Security (within 2%) dropped to below one-fifth (Delli Carpini and
Keeter 1996, 92).

Delli Carpini and Keeter further discuss which groups of citizens know more or less
about politics. They find that most citizens are generalists and that individuals seem to
have a stable level of political knowledge (or ignorance) across varied subjects
(Delli Carpini and Keeter 1996, 151). Their findings show that knowledge differences exist
between demographic groups like men and women or whites and blacks. Controlling for
these factors often significantly improves predictive models of political knowledge. Delli
Carpini and Keeter find older men whose family income exceeds $50,000 to be the most
politically knowledgeable. Indeed, the authors find “an exceptionally close fit between
political knowledge and socioeconomic status” (Delli Carpini and Keeter 1996, 161).

Interestingly, these political knowledge gaps remain stable across the viewed period
(up to twenty years ago), except for the gap between older and younger respondents. Delli
Carpini and Keeter compare five items from Gallup polls of the 1940’s and 1950’s to a national survey in 1989, where the later items were designed to be consistent across time. The knowledge gap between the two groups (younger and older respondents) explodes from about 2.5% in favor of older respondents to a mean gap of 16% (Delli Carpini and Keeter 1996, 172). The groups “who arguably have the most to gain from effective political participation: women, blacks, the poor, and the young” (Delli Carpini and Keeter 1996, 177) are the most disadvantaged in terms of political information.

2.1.1 The Age Knowledge Gap

Putnam (2001) delivers a double-edged sword in his account of American’s political knowledge at the turn of the 21st century. In the aggregate, he finds, Americans are “about as likely to know, for example, who controls the House of Representatives or who their senators are,” as were Americans fifty years prior. This fact, however, must be juxtaposed by the fact that education rates have been increasing and it is “surprising that civics knowledge has not improved accordingly” (Putnam 2001, 35). Upon disaggregation, Putnam finds further cause for concern. Intergenerational gaps in political knowledge have developed due to falling newspaper readership and television news viewership. Putnam gives a grim view of the generational knowledge gap, saying, “Today’s [in 2001] under-thirties pay less attention to the news and know less about current events that their elders do today or than people their same age did two or three decades ago” (Putnam 2001, 36).

Wattenberg (2007) adds that although the opportunities to find out about politics have increased, low levels of engagement among young people have kept knowledge levels down among that group. Using American National Election Study (ANES) data from 1948 through 2004, Wattenberg finds that the correlation between age and knowledge increases from .31 to .37 over the time period. These findings, however, do not take into account increasing levels of education over time (from 10 to 13 years average education over the
time period). Wattenberg then, while controlling for education, finds the correlations between age and political knowledge have been steadily increasing. This finding implies that not only does an age-knowledge gap exist, but that if not for increasing average levels of education, that gap might be growing at a much faster rate.

Using data from a three-wave survey from 1965 to 1982, Jennings (1996) finds interesting differences in the types of knowledge both young and older respondents have. “Sharp losses of textbook knowledge” characterize the young people in the survey, but Jennings finds young people tended to do as well or better than their parent’s generation on items related to recent news.

As for why older cohorts tend to, historically, have more knowledge than young people there are multiple explanations. Glenn and Grimes (1968) find that political knowledge tends to grow from young adulthood to middle age and then remain constant from middle age to “advanced maturity.” One explanation for this change is the passage of time. More time allows individuals to gain and retain larger amounts of political knowledge.

Another explanation is that as life continues, the “stakes” are raised. Individuals start families, settle into jobs and communities, and begin to invest time in their surroundings thus increasing their motivation to become involved politically. Verba, Burns, and Schlozman (1997) find significant increases in the political knowledge of married individuals over their unmarried peers, suggesting that as young people grow into middle age, marriage is another explanation of the political knowledge differences between young people and older cohorts.

2.1.2 The Gender Knowledge Gap

Throughout the last century, scholars have continued to wrestle with the gender-based political knowledge gap. Verba et al. (1997) show that significant gaps in measured political information are present between men and women, especially at the national level. In investigating gender differences in political knowledge and political
engagement, Verba et al. (1997) find that some of these differences can be traced back to larger general tendencies of the two groups.

Some of these tendencies are more concrete like how men are generally more educated and thus have more civic skills and a better understanding of political information, and how women are often the primary child-rearers and thus have less time to spend devoted to politics. Other tendencies described are more related to mental differences like men being drawn to conflict inherent in politics, gender-driven aggressiveness, or even the propensity to use abstract mental concepts often necessary in political cognition (Verba et al. 1997).

The persistence of the gender-based political knowledge gap has vexed political scientists for some time. Models of political knowledge have controlled for a variety of factors in hopes of determining the underlying cause of the gap. Dow (2009) finds evidence that perhaps the answer is as simple as men and women have different tastes for politics. While differences in educational attainment account for some of the traditional gender gap, more latent tendencies, like those suggested by Verba et al. (1997), are likely a large part of the gender gap.

Dow (2009) also finds that much of the gap can be traced to political socialization and the boys, more than girls, tend to gain more political socialization at school than girls do. In the end, Dow adds that while the average educational attainment levels of women seem to be catching up to men, a significant portion of the gender-based political knowledge gap remains unexplained and is therefore likely to remain.

Stolle and Gidengil (2010) bring a number of feminist critiques to the subject of the gender-based political knowledge gap. The first, based on the work of Smiley (1999), is that women and men focus on different aspects of politics. Most measure of political knowledge focus on the electoral and legislative aspects of politics and these types of items disproportionately underestimate women’s political knowledge levels. Stolle and Gidengil (2010) acknowledge the importance of knowing political facts and names but also adds that
based on the traditional roles of women, “no amount of political knowledge as
conventionally conceived can help a woman to obtain welfare benefits or access the services
that are essential to the well-being of herself and her family” (Stolle and Gidengil 2010,
95). Therefore, items about obtaining government business and accessing government
services should be included when measuring the political knowledge of women.

Another critique of the gender gap is based on representation in government. Many
political knowledge questions that ask about specific politicians ask about men in
government. Stolle and Gidengil (2010) find it logical that women might know more about
their own gender in government and that measure of political knowledge should always
include items about women in office. This assumption is based on the work of Hooghe,
Quintelier, and Reeskens (2007), where women in Belgium were found to have much higher
levels of political knowledge when asked about specific female members of their government.

In order to test these critiques, Stolle and Gidengil (2010) survey over 1,200 women
and 400 men in the Montreal and Toronto areas. Being careful not to discourage or
encourage “Don’t Know” responses (the issues with which are discussed below), their
survey included both typical measures of political knowledge, but also items about
government programs and services, and specific women in political office. In their findings,
Stolle and Gidengil (2010) state that on the seven items about services and programs, the
gender gap disappeared or flipped to favor women. Conversely, little evidence was found
that women fare better on political knowledge items that focus on women in politics. Still,
Stolle and Gidengil (2010) make the case that in order to fully understand political
knowledge, the discipline must cast a wider net when conceptualizing the trait of interest.
Indeed, if changing what items are included on political knowledge scales completely erases
(and sometimes reverses) the gender-based political knowledge gap, perhaps other groups
would benefit from a wider conception as well.

Furthering the ideas about fundamental differences in the types of political
knowledge between men and women, Dolan (2011) uses five specific survey items to
determine if the gender gap falls away when respondents are asked specifically about women in government. Dolan’s gender-based items include: Naming the current Speaker of the House (at the time, Nancy Pelosi), guessing the percentage of women in Congress (16%, answers from 15-20% were counted as correct), naming a woman in Congress, guessing how many women currently served on the Supreme Court, and correctly identifying the gender of their state’s two Senators.

Dolan (2011) finds that when these gender-relevant political knowledge items are used, women’s knowledge disadvantage is eliminated. Again, this and the previously discussed studies suggest that measurement and conceptualization of political knowledge may actually be behind the traditionally stubborn gender-based political knowledge gap. This dissertation address some of these issues when the gender gap is analyzed in Chapter 5.

2.1.3 The Race Knowledge Gap

Literature on the race-based political knowledge gap is largely scarce in the discipline. Most of the research regarding race and political knowledge falls into one of two camps: quality of education, or stereotype threat. The first is addressed in Delli Carpini and Keeter (1996) where they find that African-Americans tend to have significantly less political knowledge. The two major surveys used in their book both show negative and significant predictors of political knowledge for African-Americans. This is largely attributed to differences in political behavior and structures associated with political knowledge. Further, Delli Carpini and Keeter (1996) also find that African-Americans are less knowledgeable about the kinds of facts taught in schools, or as they categorize them, “the rules of the game.” Indeed, they go on to say that this finding may be evidence of a further measurement problem: “that measures of years of schooling can miss differences in the quality of education – an issue especially relevant to blacks who are more likely than
whites to be educated in schools that are resource-poor” (203 Delli Carpini and Keeter 1996).

The second type of literature on race and political knowledge is that of stereotype threat. The stereotype threat hypothesis suggests that if a stereotype exists about a group, then members of that group, when confronted with an instance where they stereotype might be confirmed, especially by out-group members, might perceive that instance as a threat, thus changing normal cognitive patterns. Davis and Silver (2003) explore stereotype threat in the context of political knowledge using a telephone survey where respondents were asked a series of seven political knowledge items followed by their perception of the interviewer’s racial group. The authors find that when interviewed by (perceived) whites, the African-American respondents average items correct fell almost one full item (3.42 to 2.80) with similar results when the interview self-identified as a racial out-group from the respondent. The authors go on to control for gender, education, and even interviewer-respondent rapport and still find evidence of stereotype threat.

Like the gender-based political knowledge gap discussed above, it would seem that some of the political knowledge differences attributed to race can be somewhat explained by survey methods and operationalization issues. While race is only addressed in one of the analyses in this dissertation (Chapter 3), the race-based political knowledge gap remains an important, yet ultimately under-studied, pieces of political knowledge literature.

2.2 Measuring Political Knowledge

Political knowledge, defined by Delli Carpini and Keeter (1996) as “the range of factual information about politics that is stored in long-term memory,” is often viewed as a resource that allows for civic participation in the political realm. Those without it are at a distinct disadvantage in terms of assessing political options and make personally beneficial choices in the voting booth.
It is here that a distinction must be made in the difference between political information and political sophistication. Luskin (1987) classifies sophistication as “a matter of cognition.” For Luskin and others, sophistication becomes a measure of a person’s political belief system (PBS). Three values, in particular, help to quantify a PBS: size, “or the number of cognitions available to the person;” range, “the coverage of the political universe;” and constraint, “the extent to which the PBS’s cognitions are interconnected.” Sophistication, Luskin says, “is the conjunction of these dimensions” (Luskin 1987, 857-860). Levendusky (2011, 43) characterizes it as “both information and how it is organized and related to other abstract ideas about politics.”

In short, political sophistication, as used by Luskin, is a decidedly more complicated conceptualization than simple political knowledge. Specifically, I will be concerned with political knowledge defined more specifically above by Delli Carpini and Keeter. Despite the divergence from Luskin’s particular definition of the dependent variable, much of his analysis of the term and its measure remain useful.

Another term, political awareness, used by Zaller (1992) is similar to political knowledge and is often measured in much the same way. In a footnote of his measurement appendix, Zaller classifies a number of terms (political knowledge/sophistication, political interest and involvement, political expertise, cognitive ability, ideological sophistication) as all essentially measuring the same thing while recognizing the separate variables used in each instance by the author indicated. Adding that scholars do not agree on a single way to measure these similar concepts, Zaller identifies the ways political knowledge has been measured and approximated. In the end, Zaller finds that these other methods, “level of political participation, level of political interest, level of media use, [and] educational attainment” all fall short of “neutral factual knowledge about politics, a type of measure that captures political learning that has actually occurred — political ideas that the individual has encountered, understood and stored in his head. This is exactly what we want to be measuring” (Zaller 1992, 335).
Recalling the results from Price and Zaller (1990), we are reminded that when put up against others measures, neutral factual information is the best and “preferred” measure of political awareness and therefore political knowledge (Zaller 1992, 336). Zaller adds, however, that in instances where there are “insufficient number[s] of knowledge items available” measures of interest and education can be used in substitution.

Many scholars have turned to measures of factual neutral information both from national surveys such as the ANES (Bartels 1996; Gilens 2001; Mondak 2001; Bennett 2003) or Princeton Review’s *iPoll* surveys (Barabas and Jerit 2009). Others have developed and used study-specific surveys (Mondak 2001), voter exit-polls (Druckman 2005), or some combination of the above. In addition to advocating for close-ended multiple choice items to measure political knowledge, Mondak (2001) also suggests limiting answer choices to three, finding it provides optimal choice while not sacrificing time and effort on the part of the survey taker.

In addition to developing a measure of political knowledge by using correct/incorrect responses to factual items, some scholars have turned to another measure located in the ANES survey data. Bartels (1996), among others, finds particular utility in the interviewer’s assessment of the survey participant’s political knowledge, which is included in all years of the ANES data. While originally championed by Zaller (1985) and others, the five-level summary evaluation of the interviewee’s political knowledge by the interviewer has recently fallen out of favor as a single-item scale of political knowledge. Instead, it has more recently been used as a way to check the validity of knowledge scales across surveys (Levendusky and Jackman 2003) or as a piece of a larger, more comprehensive political knowledge scale (Gilens 2001; Bennett 2003).

Within the debate surrounding how to measure political knowledge, another debate has arisen around how to classify survey answers, particularly “Don’t Know” responses. In some surveys, respondents are given the opportunity to respond that they “don’t know” the answer to the knowledge item. Additionally, some surveys ask interviewers to further
prod respondents to give a best guess after a DK response. Mondak (2001) argues that the inclusion of DKs (and subsequent guesses) in response sets artificially inflates the political knowledge levels of those with a higher propensity to guess and, more importantly, threatens the validity of the survey.

In a later article, Mondak and Anderson (2004) find that almost 50% of the reported gender-based knowledge gap can be traced to women’s higher propensity to give a DK response and men’s higher propensity to give a guess as their response. These findings surrounding the gender-based knowledge gap are echoed by Lizotte and Sidman (2009), who suggest, based on a theory of women being more risk-averse, that accounting for men’s higher tendency to guess could shrink the observed political knowledge gap by more than one-third.

Addressing expected critiques, Mondak shows that, “discouraging DKs and eliminating open-ended items will have no negative effects in terms of survey cost, interview rapport, or the capacity to measure meaningful forms of knowledge” (Mondak 2001, 233). These findings are challenged, however, by Sturgis, Allum, and Smith (2008) who find that when respondents who give DK as an answer are asked to give a “best guess,” they statistically fare no better than chance, thus eliminating Mondak’s concern over inflated knowledge levels.

Further complicating measures of political knowledge are the findings of Krosnick, Lupia, DeBell, and Donakowski (2008) as ANES Principal Investigators in March 2008. As explained in their memo, the authors found that in the past (and throughout the years involved in this study) the ANES has given strict instructions to its interviewers regarding their coding of open-ended knowledge questions. For example, in the 2004 ANES,
interviewers were given the following instructions regarding their coding of the question: “William Rehnquist – What job or political office does he NOW hold?”

“We are strict regarding acceptable answers: We will accept ONLY ‘Chief Justice’ – ‘Justice’ alone is definitely *NOT* acceptable. (The court must be ‘the Supreme Court’ – ‘Chief Justice of the Court’ won’t do.) If unsure whether correct, code as best you can and record R’s response as a remark.”

The memo finds these instructions “problematic for several reasons.” In addition to the fact that the Constitution only refers to Rehnquist’s (at the time) position as “Chief Justice,” these instructions also direct interviewers to disregard what might otherwise be seen as valid political knowledge about Rehnquist and his actual position. This investigation into the ANES’ interviewer/coding practices comes on the tails of the Gibson and Caldeira (2009) paper showing much higher rates of public knowledge about Rehnquist’s position in their own survey than what was found by the ANES. Upon being granted access to the individually recorded ANES answers, Gibson and Caldiera found instances where interviewees were very close to correct or gave a correct answer but not in the verbiage required by the ANES instructions. With regard to this particular question, Krosnick et al. (2008) state that “a more permissive approach to coding this item would have resulted in more respondents being coded as correct and would most likely have yielded a more flattering portrayal of the public’s ability to identify Rehnquist’s office” (Krosnick et al. 2008, 4).

Four main problems are identified by the investigation: interviewers did not properly record answers they thought were incorrect or only partially correct as they were instructed; as mentioned above, some “correct” answers included verbiage not technically part of the individual-in-question’s title; some arguably correct answers were coded as incorrect due to lack of exact verbiage; no written records of instructions given to interviewers prior to the 2000 survey are available; and no written records exist of correct answers which might have actually been incorrect (Krosnick et al. 2008).
The full impact of these coding errors is unknown. Even if each scholar requested full responses to these open-ended questions (which are not readily released to the public in the case that they might be used to identify interviewees) correct responses, as stated above, are not recorded and therefore cannot be checked. With this in mind, it is most likely that using ANES data to measure political knowledge and information will yield conservative results as some possibly correct answers have been coded as incorrect. We will have to keep these data issues in mind as we move forward.

No consensus has been reached on an objective “best” way to measure political knowledge. In their appendix on conceptualization and measurement, Delli Carpini and Keeter (1996) analyze the items from the 1990-1991 ANES Pilot Survey and their 1989 survey in an effort to determine a recommended knowledge item index. Delli Carpini and Keeter employ item-response theory and latent-trait theory to determine which knowledge items best measure the trait of interest (in this instance, political knowledge). These theories help to establish both item difficulty and item discrimination (how well each individual item represents the respondents overall knowledge level), thus allowing the researcher to determine how well a specific item measures the latent trait. These lead Delli Carpini and Keeter to recommend five specific items be used in the measurement of political knowledge where possible: party control of the House, percent of the House and Senate required to override a presidential veto, party ideological location (which major party is more conservative), which branch determines if a law is unconstitutional, and identifying the vice president when given his or her name (Delli Carpini and Keeter 1996, 304). Some in the field, like Jessee (2010), have already begun implementing these recommended items into surveys for their research.

Sadly, three of these recommended items offer only limited comparability with ANES survey data with one of the other two appearing only once (judicial review, in 1992). Instead, scholarly projects, including this one, have had to make do with the items
available to measure political knowledge. Perhaps in the future a small set of reliable knowledge items can be made “standard” to help alleviate issues of study comparability.

Recently, two studies published in *Political Analysis* begin to address these issues around measuring political knowledge, particularly with ANES data. DeBell (2013), in particular, hits the nail on the head with his article titled “Harder Than it Looks: Coding Political Knowledge on the ANES.” In the article, the author reviews the problems plaguing ANES political knowledge data and provides two specific remedies moving forward. DeBell and his colleagues spend a significant amount of time developing simple, yet comprehensive coding rules to be used with the 2008 ANES Office Response Items. As mentioned above, these items are not coded by the ANES, but were instead released as is for researchers to use them as they see fit. DeBell’s project included over 31,000 (including don’t know and nonresponse answers) coding decisions for each of the four individuals involved. Remarkably, due to the coding schemes developed in the article, of the more than 25,000 substantive coding decisions DeBell and his colleagues reached unanimity on all but three responses.

At the same time, DeBell used a computer algorithm to code the same responses and found 99-100% correspondence between the computer and human coders. In fact, DeBell comments, the “main impediment” to the computer’s coding was the interviewers’ spelling of respondents’ responses. DeBell categorizes it as “simply awful.”

DeBell (2013) makes three tangible contributions to the literature on political knowledge measures. First, DeBell speculates that as bad as prior codings of ANES open-response knowledge items may be (see above), the utility of these items may be regained by release of the exact responses from the past. If a computer can reliably code responses, as it did for this 2008 data, the same is possible for older iterations of the ANES. This would lead to a more accurate and precise picture of how political knowledge has changed in the American populace over time.
Second, DeBell champions the idea of allowing computers, programmed with specific coding schemes, to code these open response items in the future. The use of computer coding schemes would allow for political knowledge research to be decidedly less resource-intensive. In addition, reliability measures would be unnecessary as the computer coder will adhere to the same programming guidelines each time it codes the responses.

Thirdly, DeBell’s work with coding schemes solidifies the need for tier-based coding of open-response political knowledge items. In the article, DeBell uses all available coding schemes/levels for each of the four office recognition items, the most reliable coding schemes were those where multiple tiers of “correctness” were allowed for the responses.

Pietryka and MacIntosh (2013) begin to question the typical question battery that makes up most political knowledge scales. Citing ANES survey data, they find that in order to accurately view group differences, political knowledge scales should be comprised of items “that are relevant theoretically to each group under study” (Pietryka and MacIntosh 2013, 425).

Pietryka and MacIntosh (2013) acknowledge that measures of political knowledge need not be made up of numerous items, but that the right items are what is important in terms of drawing out group knowledge differences. In the concluding section, the authors make the recommendation that surveys increase the number of political knowledge items asked across areas salient to group differences. Political scientists need not use the entirety of the knowledge items in the survey, but instead items related to the groups under study.

Indeed, more political knowledge items would be a welcome sight in any and all nationally representative surveys, it would be difficult to always anticipate the specific groups whose political knowledge might be of interest to researchers after the data are gathered. In the instance of a smaller experimental design, area- and group-specific knowledge items would certainly be feasible and much more likely.
2.3 Media Effects on Political Knowledge

While some political knowledge is obtained via formal education or personal discussion, much of what Americans know about politics comes from the mass media. Here, I will divide the mass media into two groups: traditional media, such as newspaper, television, and radio; and new media, the Internet and online social networking sites.

2.3.1 Traditional Media

Prior (2005) finds that a respondent’s preferences for news or entertainment are what drive the knowledge gap between those with high political knowledge and those with low levels. Prior attributes this to the ever-increasing media choices provided to Americans today. The more media options Americans have besides the news, the more citizens not interested in news and politics will take advantage of those entertainment options.

Prior laments, “It might seem counterintuitive that political knowledge has decreased for a substantial portion of the electorate even though the amount of political information has multiplied and is more readily available than ever before” (Prior 2005, 589). Before cable news and the Internet bombarded Americans with programming choices, Americans were “accidentally” exposed to news and tended to remember those stories even if they were not interested in politics (Graber 1984). With choice, however, comes the decreasing likelihood that a viewer will see a news story even “accidentally” because when their particular program ends, they can simply change to one of a thousand (or more) other channels.

These ideas are echoed in Prior (2007), where the author develops the *Conditional Political Learning Model*. Under this model, the variety of media choices available influence the way an individual’s cognitive ability and political motivations affect their propensity to become politically engaged. Prior (2007) finds that if few politics-related options are available, those without motivation will actively avoid political media choices.
Alternatively, when there are relatively few media options, and those options are largely political, even those with low political motivations are likely to choose and retain political information.

At the same time, the types of information provided by traditional media are driven by a simple principle. Traditional media, in order to exist, must have an audience. Newspapers, radio programs, and television networks desire to accumulate and retain regular consumers. Therefore, traditional media seeks the most effective way to get their message out. At least for television, this seems to mean a preference for, “action over waiting, people over institutions, and simplicity over complexity” (Sanders 2002, 215).

With regard to media use, political science largely began its analysis with newspaper readership. Putnam (2001) and others found that when newspaper readership was high, it was positively related to both civic engagement and higher levels of political knowledge. Those who habitually read the daily newspaper were more likely to attend public meetings, vote, and know specific information about politics. One of the specific benefits of a typical newspaper, discussed by Graber (1984), is that readers are provided with cues as to which stories are the most important through headline size and article placement on a page.

For the last half-century, however, newspaper readership has consistently declined. This is not, as Putnam (2001) points out, a product of a decline at the individual level but instead indicative of a generational decline. Newspaper readership is a fairly stable habit if developed early in adulthood. But, as successive generations have abandoned newspapers for other media, newspaper use, particularly in a political knowledge sense, has waned.

Still, in most any model of political knowledge, including those in this dissertation, newspaper use is almost always positively associated with higher levels of political knowledge. More specifically, studies like Delli Carpini and Keeter (1996) cite instances, like areas with multiple or competing newspapers, where newspaper readership creates large swells in the political knowledge of local citizens. Sadly, instances where communities have more than one competing newspaper are few in an era where print readership has fallen.
The most-studied of the traditional media is television. Television was introduced to the American market in 1948 and only took seven years to reach 75% of American households¹ (Putnam 2001).

Much of the literature on the effects of television on political knowledge rely on program choice theory. Prior (2005), as referenced above, finds that much of what determines how much political knowledge a person is to gain from media use depends on their media choices. Those who seek out news and political information, “news hounds” as Prior calls them, are likely to grow their knowledge at a rate much faster than those who desire pure entertainment.

The rise of cable television is a perfect example of program choice theory in action. Previous studies (Keeter and Wilson 1986; Zukin and Snyder 1984) show that when respondents caught the end of a news program or inadvertently viewed political content while waiting for entertainment, they still retained some political knowledge. So in the pre-cable era, accidentally receiving political knowledge was not only possible, but generally likely. After the introduction of cable television, viewers began to stick to channels that provided the news or entertainment depending on their preferences. These additional choices, says Prior (2005), limit the amount of accidental political information those with entertainment preferences might receive thus widening the political knowledge gap that already exists.

Despite steep rises in Internet use, television is still the main source of political information and news for Americans. Early on, this was because dial-up Internet connections were slow and deep-web Internet use required skills not readily possessed by the American public. Despite faster connections and increases in Internet skills, the popularity of television as the main source of political information remains.

¹Compared to 12 years for the VCR, 14 years for the radio, and 67 years for the telephone.
2.3.2 New Media and the Internet

In an era where technology has become ubiquitous, Internet news consumption has become easier than ever. The relatively low opportunity costs of Internet access, however, does not guarantee that all new media users are reading, much less retaining, the news they view. Just like the introduction of cable added dozens of channels with which Americans could avoid politics and the news, the Internet adds millions of websites at which they can do the same.

The idea of accidental information, much like with television news, is still very much alive in early research concerning the Internet. Tewksbury, Weaver, and Maddex (2001) develop the theory that much like television viewers might accidentally see a snippet of a news program and retain the information, early Internet users had homepage “portals” which provided a front-page type experience that often included news. The authors view two elections, 1996 and 1998, and find Internet use to be a weak predictor of political knowledge only in the later.

Similarly, Kenski and Stroud (2006) find a small but positive relationship between Internet access and political knowledge in National Annenburg Election Survey data from the 2000 election. In addition to political knowledge, Kenski and Stroud also test the effects of Internet access (and self-reported viewing of election information online) on political efficacy and participation. In the end, the results for all three traits might be able to “ease the concerns of cyber-pessimists who feared the Internet would have a negative effect” on these politically relevant variables.

Initially, these findings in political science and communication literature were largely categorized as the “digital divide.” Findings focused on the differences in knowledge (both political and otherwise) brought about by simple access to the Internet or lack thereof (Bucy 2000; Jung, Qiu, and Kim 2001). In these studies, the main independent variable was almost always a dichotomous Internet access variable (like in Chapter 3). One of the reasons for this type of analysis was that it was as sophisticated an analysis as the data
allowed. Early surveys that asked about the Internet were geared toward gauging which demographic groups were on the Internet rather than what exactly they were doing there.

Wei and Hindman (2011) cite a number of studies concerning this first digital divide and how specific demographic groups (like gender, education, ethnicity, and geographical) were affected by dissimilar rates of Internet access. Katz and Rice (2002) focus largely on the first digital divide in their book. As part of their discussion of Internet access, Katz and Rice find that in the early 2000’s first digital divide gaps along gender and racial lines were beginning to disappear. At the same time, the authors find differences in access between income and education groups were still very large and perhaps increasing.

Brundidge and Rice (2009) discuss early expectations of Internet use and how the apparent low costs of finding political information on the Internet brought about by the width and breadth of available avenues, were thought to lead to large gains in political knowledge. Instead, Brundidge and Rice (2009) find evidence in the literature for a knowledge-gap hypothesis, suggesting those who already have more political knowledge will continue to seek it out because it is easier for them to digest mentally. Likewise, those with less political knowledge must work harder to mentally absorb any new political information and therefore shy away from it.

With this in mind, Brundidge and Rice (2009) find that already have political knowledge (political elites) continue to grow their knowledge-base while traditional knowledge gaps increase. One exception to these findings, however, is young people. In terms of political participation online, which includes gathering political information, young people, particularly those well educated and affluent, are disproportionately represented.

This digital divide has not been without its measurement issues. As has often been the case with the Internet, social scientists must evolve the way they study human behavior. The Internet remains a constantly changing part of society and, therefore, the way scholars view it must change also.
For example, Rainie (2012) discusses the way the Pew Research Internet Project changed its coding of Internet users in 2012. Prior to this change, any respondent that answered yes to either “Do you use the internet, at least occasionally?” or “Do you send or receive email, at least occasionally?” was coded as an Internet user. The Project found, however, that many respondents, especially those above the age of 65, would answer yes to the second question but not to the first and generally did not classify themselves as Internet users.

In the end, as Internet access levels grow across all demographic groups, the literature turns from access to actual Internet use (Attewell 2001). With so many using the Internet, fewer differences can be attributed to whether or not a subject can get to the Internet, but what they do once they are there. What types of information are accessed on the Internet? How often are subjects using the Internet for specific activities? This change in research subject matter is much the same way research on television changed from whether or not the respondent had a television in their home to what specific programs were viewed and how often. This focus on Internet use has come to be called the second or “new” digital divide and has become the driving force of the multidisciplinary research on the topic (including Chapters 4 and 5 here). In this second digital divide, Internet use concerns the range, frequency, and quality of time spent on the Internet.

Using data from the 2004 ANES Time Series study, Xenos and Moy (2007) find that across varying levels of interest in politics, Americans are turning to the Internet as a source of political information at similar rates. Xenos and Moy (2007) deem this an “instrumental use” of the Internet as opposed to a “psychological use” that would suggest those with more interest might be using the Internet for campaign information at a higher rate. Drawing attention to the fact that Internet use is often a two-way street (unlike traditional media where the audience has little opportunity to respond), they find that increased informational use of the Internet does not lead to even increases in other participatory activities. Instead, these increases are based on political interest.
Hargittai and Hinnant (2008) find a strong association between those with higher education and seeking political information online. Using a national telephone survey of 18-to 26-year-olds, Hargittai and Hinnant (2008) also find that those with higher-level Internet skills (familiarity with the terms: jpg, frames, preference settings, newsgroups, pdf) are also more likely to engage in political/social capital enhancing activities online. Further, those with higher education were also more likely to have better Internet skills, and thus Hargittai and Hinnant (2008) conclude that those with higher education are the most likely to use the Internet for capital enhancing activities like gaining political knowledge.

In The Myth of Digital Democracy, Hindman (2008) cites the underlying infrastructure of the Internet as an obstacle to equitable political participation and engagement, including political learning. Coining the term “Googlearchy,” Hindman discusses the way Internet uses are, in essence, forced to move through a particular set of websites based on search results. This connects with political knowledge in that if an individual wants a certain piece of political information, they must possess significant Internet skills in order to break away from the top tier of most-visited websites. In essence, Hindman (2008) reinforces the idea that just being on the Internet does not supply individuals with the political knowledge they are seeking. This theory limits the idea that the Internet could serve as a political information equalizer as those without the necessary Internet skills are left with the same limited few news outlets online.

Wei and Hindman (2011) make the point that as the first digital divide closes, socio-economic status is a weaker predictor of who has access, but becomes a stronger predictor of more sophisticated Internet use, as well as frequency of use. The authors use data from the 2008-2009 ANES Panel Study where items about frequency of Internet use are included. Though there are some issues with their regression model\(^2\), Wei and Hindman (2011) find that those with higher levels of socioeconomic status (more

\(^2\)Discussed further in Chapter 5.
education) gain more knowledge from political information viewed on the Internet than those of lower status.

Oxley (2012) uses data from the Pew Research Center to determine how the variety of news sources online affects political knowledge. Unsurprising, the results are dependent on the individual’s propensity toward politics. Those that consult a wide range of political news sources tend to have higher political knowledge than those that employ only a few sources of news. Oxley (2012) attributes this to ease of access (it costs much less to go to three news websites than buy three print newspapers) and the variety of presentation formats available online. While this trend of increases sources leading to increased political knowledge is also true for non-Internet users, there is a much stronger effect for those accessing their news online.

At the same time, when looking at the entire population, Oxley (2012) finds that as the Internet has come into use, overall political knowledge levels have not risen as early scholars expected. In fact, the results suggest that the political knowledge gap between those with more education and those with less is widening due to the low education individuals' lack of motivation for political knowledge and the increasing possibilities for nonpolitical entertainment.

The United States is not the only nation experiencing knowledge gaps based on the second digital divide. Gibson and McAllister (2011) use data from the Australian Election Survey spread over a 15-year period to determine the effects of Internet use on the political knowledge of citizens in a nation with compulsory voting. Gibson and McAllister (2011) find that rather than increased internet use vastly improving the knowledge of those with already higher political knowledge, those that had low knowledge and did not use the Internet were found to be sorely lagging behind. Instead of the top of the knowledge gap rising higher, the Australian data suggested that the bottom of the gap would drop lower. Here, use of the Internet and any benefits gained were strongly correlated with the respondent’s reported political motivations and interests.
Finally, while political science and communication literature on the first and second digital divides continues, scholars are becoming more aware of a separate, though related, issue within the disciplines. The Internet is a rapidly growing and constantly changing environment. Valid and accurate research on Internet access and use can become dated quickly, often before it is even published. This is not, however, to say that research on the first or second digital divides is unwarranted or unhelpful. Instead, political science and communication studies must focus on the lasting effects of Internet access and use, particularly how it relates to the spread of political knowledge.
3.1 Introduction

It has long been agreed that one of the key elements of a stable democracy is an informed electorate. Political scientists have long been interested in developing ways to assess just how much political knowledge Americans have and what they do with it. Further, political science literature has sought to find reasons and explanations as to the levels of knowledge that do or do not exist.

Young people, eligible to vote in their first or second election, are often criticized as being ill-informed about American politics and the issues. Scholars also bemoan the fact that the way voters behave as they enter into the electorate has great effect on the way they continue to participate (if at all). If young people enter the electorate relatively uninformed and remain that way, each successive cohort would lower the aggregate population’s levels of political knowledge. Add in the criticism surrounding the full American public’s general lack of political knowledge, and these findings would seem to spell disaster for democracy in America. But now, with widespread technological and communication advances, increased high school and college graduation rates, and the target demographic of many get out the vote initiatives, young voter’s political knowledge could be on the rise.

Using ANES data, this chapter will analyze how much political knowledge the young electorate (ages 18-29) has, and how these patterns amongst young voters have changed over time. In addition, comparisons of political knowledge levels across groups could help
draw out what causal mechanisms might be to blame for young people’s political knowledge shortfalls and what the consequences for American democracy might be.

3.2 Theory and Hypotheses

Political knowledge is an important part of the democratic process. Those with more political knowledge are better prepared to meaningfully contribute when it comes to political participation, especially in the voting booth. Without political knowledge, certain groups’ interests and preferences cannot be heard by those in government. Delli Carpini and Keeter (1996, 177) speak to this issue when they say that the groups “who arguably have the most to gain from effective political participation: women, blacks, the poor, and the young,” are the most disadvantaged in terms of political information.

In their work, Delli Carpini and Keeter (1996) find that across years of surveys, aggregate levels of political knowledge, while generally low, have remained fairly stable. The stability of political knowledge across time is puzzling in the face of changes in education and communication. Scholars have also found that among the populace, it is young people who seem to have some of the lowest levels of political knowledge (Delli Carpini and Keeter 1996; Wattenberg 2007). This project intends to investigate these claims and, perhaps, provide some reasoning and explanation for them.

Early theories on Internet use (Mossberger, Tolbert, and McNeal 2008; Katz and Rice 2002, see) suggest that individuals that use the Internet for political purposes may increase their political knowledge and awareness at a rate greater than increased use of “traditional media.” Further, studies like Zickuhr and Madden (2012) show that young people use the Internet more than older cohorts. Therefore, one might logically conclude that with increases in Internet access and use, young people could begin to close the age-related knowledge gap that has existed for so long in the American populace. Not all theories agree, however, on whether increased Internet access and use will be change young people’s political knowledge levels for the better. Some, like Prior (2005), would argue that
the limitless choices provided by the Internet will, like cable news before it, allow those without prior interest in politics to continue to avoid become “accidentally informed.”

Today, young people (between ages 18 and 29) have become inundated with options for news and entertainment, especially on the Internet. Their primary sources of information are fundamentally different from those of older generations. Newspapers, thought to be the most reliable source of information for those seeking news (Chaffee and Kanihan 1997), have fallen out of favor with young people. Might these same young people simply be exchanging a print media for the digital version of the same newspapers? Perhaps, but Althaus and Tewksbury (2000) find that those reading online newspapers read less political stories and have lower levels of recall and recognition than print readers.

The initial descriptive analysis of this chapter will examine average knowledge levels of different groups across the surveys available. These comparisons provide examples of knowledge gaps as they existed before, during, and after the introduction of the Internet. While knowledge item differences prevent direct comparisons across the election years, visualizations of the knowledge gaps remain beneficial for uncovering political knowledge trends. Using the data from the ANES cumulative file, I expect to find that young people continue to have low levels of political knowledge compared to the rest of the voting-age population.

\[ H_{1a}: \text{The average level of political knowledge for those ages 18-29 is lower than the rest of the voting-age population in each survey year across the examined surveys.} \]

I also expect to see differences within subsets of young people that echo the differences of the larger sample. While young people are the group of interest in this project and there are certain expectations of differences between young and older respondents’ levels of political knowledge, I do not expect typical gender or racial knowledge differences to be entirely eliminated. Therefore, I expect young men to have
higher average political knowledge levels than young women and young whites to have higher levels of political knowledge than nonwhites.

\[ H_{1b}: \text{The average level of political knowledge for young men will be higher than young women across the examined surveys.} \]

\[ H_{1c}: \text{The average level of political knowledge for young whites will be higher than the average level for nonwhites across the examined surveys.} \]

Further expectations surround the availability of the Internet to the respondents. I expect young people with Internet access to have higher political knowledge than those without, due to the ease of acquiring more political information through Internet use.

\[ H_{1d}: \text{The average level of political knowledge for young people with Internet access will be higher than the average political knowledge level of young people without access.} \]

It should be noted, however, that especially in these early days of the Internet, one cannot rule out possible spuriousness due to family income and education levels. Before Internet adoption reached present-day levels, it is logical that those with more disposable income to spend on a new form of media or those involved in higher education, where the Internet was developed, might be the same individuals using the Internet the most at this time.

In an attempt to better understand why these groups, particularly young people, have the levels of political knowledge they do, this chapter will also implement a multiple linear regression model using the data available from the appended ANES Cumulative data file described above. In the model using the full data set, I expect typical political knowledge patterns described by Delli Carpini and Keeter (1996), Wattenberg (2007), and others to resurface. The relationships to political knowledge for males, older respondents, whites, those with higher educational attainment, and those with higher incomes should all
be positive and significant. Those reading the newspaper more and watching TV news are also expected to have higher political knowledge as previous literature suggests (Eveland Jr and Scheufele 2000; Delli Carpini and Keeter 1996), and therefore positive and significant coefficients as well. These and other variables known to have relationships with political knowledge are controlled for in these models. These variables and their measures are described in the next section.

In an effort to include as many years as possible, this first model will exclude Internet use and include respondents from 1988 and 1996. The second model will introduce Internet use, thus excluding data from 1988 and 1992. When it is included in the model, Internet access should be a predictor of higher political knowledge similar to the findings of Katz and Rice (2002) and others discussed above.

\( H_2: \text{Internet access increases political knowledge.} \)

The crux of this chapter’s argument is that young people are an exception to the way political knowledge is normally distributed among groups in the population. The reason for this argument is the increasing growth of Internet use among young people. In an attempt to draw out the possible effect of the Internet on young people’s political knowledge, an interaction effect will be introduced to the predictive model. The Internet has become a location of immense political information that young people are more and more apt to access. Therefore, young people using the Internet should be more politically informed than those not using the Internet, even if it is accidentally so. In addition to viewing the interaction effect in a multiple linear model, I will graph the marginal effects of the interaction between young people and Internet access. This graph will help us see to what degree Internet use can benefit young people and their political knowledge.

\( H_{3a}: \text{The interaction of young people and internet access will result in higher levels of political knowledge.} \)
$H_{3b}$: The political knowledge gap between younger and older individuals decreases as Internet access is introduced.

3.3 Method

3.3.1 Data and Measures

*Political Knowledge*  This project seeks first to establish a reliable measure of political knowledge held by the respondents in the discipline’s most widely used nationally representative survey, the American National Election Study (ANES). This scale, a measure composed of factual political knowledge items from each survey iteration, will be developed in a way that allows for limited comparison across survey years. Because the same questions are not asked in each ANES study, nor are the same amount of questions asked, some additional coding and combining of data sets is required.

The ANES Cumulative Data file serves as the base of the data set. After each election year’s time-series survey is completed, the ANES adds the new data to the Cumulative Data file by matching new items to similar older items. Once a similar item shows up in three or more ANES iterations, it is added to the cumulative file. I use presidential election years as they include the “normal” political knowledge items. Specifically, I use the data from the 1988, 1992, 1996, 2000, and 2004 surveys. In the base cumulative data set there are seven variables of interest related to political knowledge (vcf0729, vcf0730, vcf9036, vcf0502, vcf0502a, vcf0503, vcf0504). These include items asking respondents to place the parties on a 7-point scales, identify which party is more conservative, and identify which party held the House of Representatives before and after the election. An eighth variable of interest included in the cumulative file (vcf0050b) is the interviewer assessment of the respondent’s political knowledge given at the end of the interview. This is the variable Bartels (1996) uses for his full-knowledge simulation.

These standard variables are included in the cumulative file because they are included in many ANES surveys. Not all are included in every survey and some are simply
unused for a portion of time only to be used again more recently. For example, vcf0729 asks respondents if they know the House majority party before the election in every presidential election year since 1958, while vcf0502 (asking which major party is more conservative) skips 2000, 1996, and 1980. While these item omissions are lamentable, they are also unavoidable. As survey techniques change, so does the data required and requested by social scientists. The ANES provides as much item continuity as possible but, obviously, omitted items cannot be asked retroactively. Therefore, we are required to do the best with what we have. In this instance, all presidential-election years include at least three of the knowledge items (besides the interviewer assessment) since 1968.

In addition to the items in the cumulative data file, other knowledge related questions are often asked in individual survey iterations but not added to the Cumulative file due to lack of matching items. For example, most ANES surveys give respondents the names of the Speaker of the House, Vice President, British Prime Minister, and Chief Justice of the Supreme Court and ask the respondent to say what position they hold. Interestingly, only two items have been included consistently in each ANES survey since 1988: which party controlled the House before the most recent election, and the office recognition item about the Chief Justice of the US Supreme Court. Most years include an item about a foreign leader, and most include an item with a member of the executive branch.

These office recognition items can be added to the cumulative data file using the unique subject id number (vcf006a), which is assigned to a respondent in each ANES year’s survey iteration and also bound to that respondent’s data in the cumulative file, to expand the number of factually based political knowledge items upon which the measure will be based. Initially with these additions, each year of the cumulative file will have different numbers of knowledge items so a simple count of correct items will no longer suffice. I would no longer be able to assume levels of political knowledge are changing over time because they would also be affected by having different items in different years.
To correct this problem, I have developed a five-item, six-point (including zero), scale that will be used to measure political knowledge from 1988 to 2008. I believe these six elections provide an adequate time period to test the above hypotheses and draw conclusions about changing levels of political knowledge both in specific groups and across the electorate. Implementing Delli Carpini and Keeter (1996) recommendations where possible, the 5 items scale includes:

1. Office Recognition Item – Chief Justice of the Supreme Court.

2. Correctly identifying which party has a majority in the House of Representatives before the election.

3. Correctly placing Democrats to the left of Republicans when asked to place each party on a 7-point scale.

4. Office Recognition Item – Congressional Leader

5. Office Recognition Item – Foreign Leader

These five items appear on all six surveys from 1988 to 2008 and similar items have been included on the ANES 2012 survey as well. This chapter uses only the years 1988 to 2004 due to the issues discussed above with the 2008 data. The first two items are asked in each survey iteration in similar language, though office recognition of the Chief Justice will need to be imported from individual years via the unique subject id number. Correct placement of Democrat to the left of Republicans will be a composite item where placement of Democrats on the seven-point scale (vcf0503) will be subtracted from the placement of Republicans on the same seven-point scale. If the result is positive (neither negative nor zero) the respondent will receive credit for the item. An office recognition item about the Speaker of the House typically assesses the fourth item, except in the 2000 survey where Senate Majority Leader is used instead. Finally, the fifth item is typically assessed via an item about the British Prime Minister, except in 1996 where the President
of Russia is used. In the case of these final two office recognition items, the items used in the normal iterations are similar enough that I do not think problems comparing political knowledge across surveys should arise.

The distributions of political knowledge across the five-item, six-point scale for the entire sample by year are available in Figure 3.1 followed by the political knowledge distributions for young people (ages 18-29) only in Figure 3.2.

Figure 3.1 shows that among all respondents, in most years, the mode political knowledge level is 2 items out of 5 correct. In Figure 3.2 we see more skewed distributions with higher proportions of the samples at the lower end of the scales. The mode political knowledge levels for 1992, 2000 and overall are 1, while the modes for 1996 and 2004 are 2, and the mode level for 1988 is 0. Again, distributions for the full samples have a normal distribution shape, but the young distributions are mostly skewed toward less political knowledge.

Internet Access In addition to the necessary knowledge items, part of this chapter’s argument about changes in political knowledge levels centers around the changes in media use and availability. Basic media use items for four types of media (television, radio,
Figure 3.2: Political Knowledge Distributions: Young People Only

Newspapers, and magazines) are available in the ANES cumulative data file. From 1996 forward, the ANES has also asked about Internet availability and use as well. These items can be added along with the knowledge items by again using the unique subject id number (vcf006a). In the initial analysis, this chapter looks only at the years where the Internet access item is included (1996-2004) where 1 indicates the respondent has access and 0 indicates the respondent does not. In the linear regression portion, those from 1988 and 1992 are coded as NA because these respondents were not asked about Internet access. For this portion of the analysis, the years 1988 and 1992 are effectively excluded.

Control Variables Additional variables used in the linear regression portion of this chapter can be found in the original ANES cumulative data file. These controls are added to the models because they are known to have relationships with political knowledge. They are included in the models to reduce spuriousness. Young is a dummy variable where respondents are coded as 1 if they are between the ages of 18 and 29. The effects of race on

\footnote{In past versions of this analysis, two separate models were used where one proceeded as described above and the other coded all respondents from 1988 and 1992 as having no Internet access so as to be included in the model. The findings for these two models were similar, thus eliminating the need to project a lack of Internet access on early respondents.}

\footnote{Further variable information and full survey item text is included in the Appendix.}
political knowledge are measured by two dummy variables where white respondents act as a baseline and dummy variables for black respondents and other\textsuperscript{3} respondents measure those effects. Ethnicity is controlled for by using a dummy variable for when respondents identified as Hispanic. Gender is a dummy variable where 1 indicates males and 0 indicates females. Education is the ANES’s normal 7-category education measure where 1 indicates 8 grades or less of education and 7 indicates advanced degrees beyond that of a BA. Income is a 5 level income scale based on which percentile the respondent’s family income falls into.

Partisan Intensity is a measure where 1 indicates the respondent as a pure independent and 4 indicates strongly Democrat or Republican. Rather than measure which party or partisan group a respondent belongs to, the important aspect to control for is how strongly the respondent leans toward either end of the spectrum. Logically, those that would call themselves strong partisans are likely to have more knowledge with which to back up their partisanship claims. Which party the respondent identifies with is irrelevant to the study at hand, instead how strongly they identify should be controlled. This separation of partisanship and strength of partisanship has been used previously in models of political knowledge (Kenski and Stroud 2006).

The model also controls for interest in politics. This control provides more certainty that the model reflects the effects of the intended independent variable (Internet access) on political knowledge and not pure interest, which might lead to increased knowledge. This variable is derived from the ANES item asking respondents how much they follow what is going on in government. These categories were coded as 0 (hardly at all), 1 (only now and then), 2 (some of the time), or 3 (most of the time).

Newspaper and Television are measures of how many days per week the respondent indicated they got news from that particular media. Comparable measures of radio and magazine use are not included in the ANES Cumulative Data file.

\textsuperscript{3}The ANES defines “other” as Asian, Native American, or other race.
Lastly, dummy variables for each survey year except the baseline (2004) are included to help improve the precision of the estimates by controlling for extraneous factors related to each of the election years, including potential effects of different knowledge items (discussed above). The sample weight variable suggested by the ANES Cumulative File (vcf0009a) for use with data collected after 1972 is used in this chapter’s analysis.

3.3.2 Statistical Procedures

Three linear regression models are used in this analysis. In all three, political knowledge, measured by the scale described above, will be the dependent variable. The first model will include all of the respondents across the five surveys mentioned above but does not include the Internet access variable. The second model does include the Internet access variable and therefore excludes respondents from the 1988 and 1992 ANES surveys, as that item was not included in those years. The third model includes an interaction effect for Internet access and young people. One-tailed tests of significance are used in the models (except for the year dummy variables) as specific directional effects are expected. The linear regression models are run in STATA 12.

3.4 Findings

Figures 3.3 through 3.7 show graphs of average political knowledge level for specific groups in the sample over the years available in the data. Surrounding the average values for each year is a 95% confidence interval. Sample sizes are located at the bottom of each figure, by year. Figure 3.3 shows us the average political knowledge levels for entire sample available in the data set. We see relatively stable levels of political knowledge across the elections in question. Because the knowledge items are not always exactly the same we cannot draw any substantive conclusions about the changes in level between the survey years. In some years the 95% confidence intervals are closer to the mean indicating more clustering around specific points on the 0-5 political knowledge scale. These smaller ranges
between confidence intervals could also be due to non-uniform sample sizes. Still, the changes in political knowledge over time, while not wholly comparable, do pose some interesting questions. In particular, the high average political knowledge level in 1996 could be the result of any one or more specific circumstances. As described above, the ANES office recognition items were slightly different in 1996 due to the prior midterm election. It is possible, that such an event (the House of Representatives changing majority parties) caused a rise in average political knowledge due to wider coverage. It is also possible that because of such a historical event, knowledge about government leaders was fresher in respondents’ minds during the 1996 ANES interviews. The possibility of historical events affecting political knowledge is an interesting possibility that should be explored further.

![Average Political Knowledge Levels: Full Sample](image)

**Figure 3.3: Average Political Knowledge Levels: Full Sample**

When we compare the average levels of political knowledge of young people and the non-young, Figure 3.4, we find that $H_{1a}$, that the average level of young respondents’ political knowledge is lower than the rest of the respondents, is largely confirmed. In four of the five years available, the knowledge levels of the non-young are above those of the young. The exception is 1996, a pattern we will see throughout this stage of the analysis.
In 1996 young and non-young respondents have almost the exact same average knowledge level and the confidence intervals would suggest young people could actually have a higher average level of political knowledge in that year. These figures suggest we should pay special attention to our regression model when looking at 1996 in particular.

Figure 3.4: Average Political Knowledge Levels: Young and Non-young

Figure 3.5 shows average levels of political knowledge of young males and females. Once again, the relevant hypothesis about young men having higher knowledge than young women, \( H_{1b} \), is confirmed except for the data from 1996. For four of the five elections in question, males have decidedly higher average political knowledge levels. This time, however, the actual average level of political knowledge for young females point estimate, not just what is suggested by the 95% confidence intervals, is higher than that of the males in direct contradiction with our hypothesis. This adds further fuel to the fire suggesting something extra ordinary is going on in that specific election cycle.

Figure 3.6 serves to confirm our third hypothesis about young whites having more political knowledge than non-whites, \( H_{1c} \), by showing the average political knowledge levels
of whites to be higher than those of nonwhites\textsuperscript{4} across the years analyzed. In this comparison we find a distinct political knowledge disparity among young whites and nonwhites in 1988 while also finding similar average levels of political knowledge in 2000.

Finally, Figure 3.7 shows the average political knowledge level of young people with Internet access across the years where this item is included. Figure 3.7 also shows the contrasting group, young people without Internet access, across the same time period. Sharp knowledge level differences are evident here where the average political knowledge level is around one full item higher in 1996 and 2004 and half an item in 2000. $H_{1d}$, concerning the average level of political knowledge for young people with Internet access being higher than those without, is confirmed in the presence of these large knowledge gaps. Also evident in this data is the shrinking sample size of young people without Internet access. In a day and age where online access has become largely ubiquitous for young people, it is increasingly difficult to reliably measure differences between these groups. Ultimately, by 2004, Internet access is likely be associated with socio-economic

\textsuperscript{4}This term combines the groupings of Blacks, Asians, Hispanics, Native Americans, or other races. This is due to small minority sample sizes.
status. Figure 3.7 may actually be reflecting the household incomes or education levels of the young people as much as it is Internet access. It is for this reason the analysis turns to a linear regression model. Using control variables to minimize the spuriousness introduced by other factors, the true effect of Internet access on political knowledge becomes clearer.

The results of the multiple linear regression models of political knowledge can be seen in Table 3.1. In the first model, which includes all of the survey years available, all of the coefficients are of the expected direction and significant. Being young negatively affects political knowledge levels, as does membership in black or other racial categories compared to baseline whites. Further, respondents identifying as Hispanic are also likely to have less political knowledge. Being male, having higher educational attainment, and higher income, all have positive and significant coefficients as we expected they would. Increased partisan intensity and interest in politics each increase the likelihood of higher political knowledge as well. The dummy variables for survey years validate what we saw in Figure 3.1 where all of the survey years have lower political knowledge than the baseline, 2004, except 1996.
Table 3.1: Multiple Linear Regression Models of Political Knowledge

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Full Sample b(SE)</th>
<th>Full Sample b(SE)</th>
<th>Interaction Effect b(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>-0.125*** (0.032)</td>
<td>-0.082* (0.050)</td>
<td>-0.188** (0.082)</td>
</tr>
<tr>
<td>Internet Access</td>
<td>–</td>
<td>0.374*** (0.047)</td>
<td>0.334*** (0.051)</td>
</tr>
<tr>
<td>Young x Internet Access</td>
<td>–</td>
<td>–</td>
<td>0.312*** (0.062)</td>
</tr>
<tr>
<td>Male</td>
<td>0.272*** (0.025)</td>
<td>0.290*** (0.038)</td>
<td>0.287*** (0.038)</td>
</tr>
<tr>
<td>Education</td>
<td>0.248*** (0.008)</td>
<td>0.243*** (0.014)</td>
<td>0.243*** (0.014)</td>
</tr>
<tr>
<td>Income</td>
<td>0.105*** (0.012)</td>
<td>0.072*** (0.019)</td>
<td>0.078*** (0.019)</td>
</tr>
<tr>
<td>Partisan Intensity</td>
<td>0.142*** (0.013)</td>
<td>0.181*** (0.019)</td>
<td>0.180*** (0.019)</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.337*** (0.015)</td>
<td>0.359*** (0.023)</td>
<td>0.359*** (0.023)</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.031*** (0.004)</td>
<td>0.037*** (0.007)</td>
<td>0.038*** (0.007)</td>
</tr>
<tr>
<td>Television</td>
<td>0.029*** (0.005)</td>
<td>0.032*** (0.007)</td>
<td>0.032*** (0.007)</td>
</tr>
<tr>
<td>Race (White)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.508*** (0.040)</td>
<td>-0.548*** (0.059)</td>
<td>-0.547*** (0.058)</td>
</tr>
<tr>
<td>Other</td>
<td>-0.138** (0.050)</td>
<td>-0.030 (0.074)</td>
<td>-0.031 (0.073)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.141** (0.058)</td>
<td>-0.272*** (0.086)</td>
<td>-0.269*** (0.087)</td>
</tr>
<tr>
<td>Year (2004)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>-0.212*** (0.045)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1992</td>
<td>-0.519*** (0.054)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1996</td>
<td>0.144* (0.056)</td>
<td>0.483*** (0.066)</td>
<td>0.477*** (0.066)</td>
</tr>
<tr>
<td>2000</td>
<td>-0.508*** (0.046)</td>
<td>-0.471*** (0.046)</td>
<td>-0.474*** (0.046)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.339*** (0.067)</td>
<td>-0.689*** (0.091)</td>
<td>-0.676*** (0.091)</td>
</tr>
<tr>
<td>Observations</td>
<td>8402</td>
<td>4053</td>
<td>4053</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.400</td>
<td>0.450</td>
<td>0.451</td>
</tr>
</tbody>
</table>

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, One-tailed tests; Years: Two-tailed tests
Across the three models we find that increased television and newspaper use are positive and significant predictors of political knowledge, as expected. We are able to accept the hypothesis that Internet access increases political knowledge, $H_2$. When Internet use is introduced in the second model, it is a positive and significant coefficient indicating that access to the Internet leads to higher political knowledge.

The results of the third model, with the interaction effect, must be read with care. In this instance, the first three variables are in comparison to a baseline group, older respondents without Internet access. Comparatively, young people without Internet access have less political knowledge than the baseline, but Internet access increases political knowledge for both young and older groups when it is introduced.

Here are able to confirm $H_{3a}$, that the interaction of young people and Internet access results in higher political knowledge, as the interaction coefficient is positive and significant. This would suggest that young people with Internet access might be able to reverse the effects of being young on their political knowledge by having access to the Internet. While political knowledge remains lower among young people ages 18-29, access
to the Internet and the political information contained therein begins to help young people overcome this lack of political knowledge.

Finally, Figure 3.8 is a graphical representation of the interaction effect\(^5\) tested in Table 3.1. On the left-hand side of the graph we see the predicted political knowledge levels for the young and non-young without Internet access. On the right-hand side we see the predicted knowledge levels for the two groups with Internet access. The coefficient for the interaction effect was significant in Table 3.1, and Figure 3.8 shows a shallower age-based knowledge gap when Internet access is taken into account. The difference between the predicted values is much smaller on the right-hand side than the left. In fact, when the 95% confidence intervals are taken into account, this representation suggests that the linear prediction for young people’s political knowledge could be higher than older respondents with internet access.

\[\text{Figure 3.8: Predicted Marginal Effects: Young x Internet Access Interaction}\]

\(^5\)This figure’s 95% confidence intervals are based on two-tailed tests, rather than the one-tailed tests found in the table.
3.5 Conclusion

This chapter adds to the existing literature by expanding our knowledge of what groups have political knowledge and begins the process of decoding why some groups have more knowledge than others. Using a five-item scale developed from the ANES Cumulative data file and individual ANES election data sets, this chapter first shows average levels of political knowledge across five elections. In this initial analysis we find that young people have a lower average political knowledge level than those 30 or older. We also find that young males tend to have more average knowledge than young females. Also, young whites have more average political knowledge than young nonwhites. We also find support for the theory that those with Internet access have higher average political knowledge than those without, especially among young people.

In the second part of this chapter we use multiple linear regression to find evidence that while being a young person often indicates less political knowledge, this trend could possibly be reversed by Internet access. The interaction of the two terms (being young and having Internet access) is positive and statistically significant, which leads us to believe all is not lost for young people and their levels of political knowledge and that the Internet is perhaps one way to reverse the trend of decreased political knowledge among younger citizens.

In addition to what is seen here, this analysis is part of a larger project aimed at expanding the discipline’s understanding of political knowledge especially that of young people. Foremost is analysis of how the above model changes when applied to each election year’s data individually. This and other analyses could help us determine whether political knowledge is more stable over time or if certain elections involving certain populations and certain issues change the political knowledge required and used by Americans. Further investigation into how access to and use of the Internet affects political knowledge levels of young is a natural extension of this project.
Even with Internet access and use as ubiquitous as they are, measurement of access and use are still being developed by social scientists. With reliable measures of time spent on the Internet or sites accessed we could begin to see exactly how Internet use affects some of the variables discussed in the model above. Does Internet access and use lead directly to more political knowledge or are other factors like efficacy and trust affected by Internet use as well?

Lastly, future research associated with this project will begin to break down types of knowledge and tease out if these knowledge patterns are the same for the age groups in question. Are young people at an advantage with regard to a certain type of political knowledge due to fast and frequent updates on Facebook or Twitter? Young people seem to flock to social media and news sites on the Internet. Surely they are able to acquire political knowledge in these locations, even if it is accidentally. Perhaps young people seem to have so little political knowledge because of the way scholars measure the trait. New, more specific knowledge measures and better understanding of young people’s political socialization might help to paint an entirely new picture about political knowledge and the democratic process in America.
4.1 Introduction

Classic political science and communication literature has suggested the existence of political knowledge gaps among the American population (see Delli Carpini and Keeter 1996; Jennings 1996; Wei and Hindman 2011). These gaps are known to run along gender, income, and education lines. There has also been a knowledge gap based on age as well (Zaller 1992; Wattenberg 2007). Despite overall lower levels of education, older Americans tend to have higher levels of political knowledge than younger cohorts. Older Americans tend to be more interested in politics and often feel more directly impacted by the decisions of those in politics perhaps due to higher wages having worked longer, larger families having, or deeper/longer ties to the community. Older Americans also tend to use more traditional media which has been shown in the past to increase political knowledge more than newer media (Prior 2005).

While the findings about knowledge gaps have remained largely consistent, the measures used in knowledge gap literature have changed over time. In their assessment of over 39 political knowledge items, Delli Carpini and Keeter (1996) find open-ended or closed-ended items represented among the best and worst measures of political knowledge. Luskin (1987) state a preference for open-ended knowledge items but acknowledges the difficulty of implementing these types of items without experiencing high time costs or respondent fatigue. With no consensus over one type of political knowledge item over
another, many surveys, including the American National Election Studies (ANES), choose to implement both open- and closed-ended knowledge items.

The issues surrounding the coding of the four Office Recognition Items from the 2008 ANES Time Series study (discussed in Chapter 2) and subsequent re-codings provide a unique opportunity with regard to measuring political knowledge. With the 2008 open-ended responses having been assigned specific answer codes based on the respondent’s response, we are able to order those codes into varying degrees of “correct-ness” which can be use to represent a respondents level of knowledge about a certain fact or figure. We are able to categorize who knows how much about the political figures and offices in question. In years past, large sample surveys, like the ANES Time Series, could only show researchers which respondents were correct and which failed to show knowledge of a specific fact. With the 2008 re-codings, assigning “partial credit” to respondents is possible based on a third-party’s categorization of the open-ended response.

The possibility of “partial credit” is relatively new in knowledge gap literature. Gradual steps of correctness rather than a hard-line right and wrong can help further explain, in greater detail, just how much political knowledge Americans have and from where they might be getting varying levels of political information.

4.2 Theory and Expectations

The audience of the Internet is an ever-growing proportion of the United States population. As part of the Pew Research Internet Project, Fox and Rainie (2014) found that in early 2014, 87% of American adults reported they had ever been online, a rise of 21% since 2005. Also, 90% of Internet users report going online from home in a typical day, up from 76% in 2000. With access and use of the Internet growing at rapid rates, the effects of the Internet on political behavior are no longer a “cottage industry” for political scientists, but instead a new mainstay in the science.
While some scholars have begun to identify differences in the effects of the Internet and other mass media (Druckman 2005; Prior 2005; Mossberger et al. 2008), few have been able to analyze how the Internet effects the “depth” of knowledge. The 2008 ANES Office Recognition Items provide such an opportunity.

In order to describe the prospective difference in the way the Internet affects political knowledge, it is important to first describe other news media as a basis for comparison. For example, a typical American picks up a newspaper. We would probably assume that if that person read, say, just the front page, and made this a habitual part of their news consumption, they would likely end up with less political knowledge than someone who habitually read the entire front section of the newspaper. The same could be said for someone that watches political programs on television. We would reasonably expect someone that watches one evening program to have less political knowledge than someone who views many programs throughout the day.

It is here that we have the difference between old and new media. Once that person reaches the end of the newspaper, even if they read it cover-to-cover, there is a definitive end, an upper limit to the amount of news (and therefore political knowledge) they can gather from a newspaper on that particular day. The same is true for television. A viewer is limited by the discussion of the pundits and guests of the news program, and the length of the show. Though not recommended, a person could potentially watch 24-full-hours of news television, but that, still, is a set upper-limit to how much they can watch/consume, much less retain. The Internet, however, is a different case altogether. Just because a reader has reached the end of a news story, does not mean they have seen/read all the Internet has to offer on the subject.

Unlike old media, the Internet is a relatively endless supply of news and political knowledge depending on the informational desires of the person viewing it. In fact, most news stories or news videos have some sort of recommendation feature that leads viewers
further down the “rabbit-hole,” gaining more specialized knowledge about a single topic, of whatever subject they are interested in.

Do all Internet users read and click through page after page of politics-related content for hours at a time? Surely not, but without an upper bound to the amount of knowledge contained on the Internet, it is certainly reasonable to assume any that wanted to could find substantially more information than those that read a print newspaper or watched a news program on television. It is exactly this type of “rabbit-hole” knowledge that can be measured by the 2008 ANES Office Recognition Items where respondents’ responses are not a yes or no, but instead have categories that represent levels of knowledge.

These assumptions lead to the first hypothesis:

\[ H_1: \text{Those that use the Internet more will have higher levels of political knowledge.} \]

Despite the expectation that the Internet will increase political knowledge, it would be unreasonable to expect this effect to be the same across all sub-groups of the US population. The political knowledge of young people is an underlying theme of this dissertation project, and that focus continues in this chapter’s analysis. But in which direction might we expect the Internet to influence the political knowledge of young people? The answer, is both.

Young people (ages 18-29 for this study) have “grown-up” with the Internet and are typically the most well-equipped at finding and accessing information online. This gives young people a distinct advantage in the way Internet use might boost their political knowledge. A young person with developed Internet browsing and searching skill might be able to deepen their knowledge and understanding of a political topic in less time than it might take another less-equipped, though equally-interested person.

Still, these same advantages could spell disaster for young people in the way the Internet affects their knowledge. While young people use the Internet more, they also use it for different purposes. Young people are decidedly more likely to use the Internet for
their news (Zickuhr and Madden 2012), but they are also more likely to engage in social media like Facebook, MySpace, or Twitter which often involve little political news consumption. In the same way cable television delivered more choices in terms of channels, thus decreasing the likelihood a viewer might see a political news program (Prior 2005), the endless variety and choices of the Internet might prevent users from seeing or accessing news or politics-related content. Further, having already established the assumption that young people may be more skilled at and familiar with the Internet, it is reasonable to assume they may be even more able to avoid any sort of political- or news-related content should they so desire. This study will endeavor to again confirm that young people have less political knowledge, and then determine in what way Internet use affects the political knowledge of young people. This leads us to a set of hypotheses:

\[H_2: \text{Young people continue to have less knowledge than older cohorts when no Internet use is present.}\]

\[H_3: \text{Increased Internet use has a positive effect on young people’s political knowledge.}\]

4.3 Method

4.3.1 Data

The data used in this study comes from the ANES 2008 Time Series Study. This ANES study included 2,323 pre-election and 2,102 post-election interviews intended to be generalizable to the nation’s population and included an over-sampling of Latino and African Americans. Only those that completed both waves of the study are included in this chapter’s study. Sampling weights are provided by the ANES and employed in this analysis.

Pre-election interviews averaged around 73 minutes and post-election interviews averaged around 91 minutes. Respondents were offered $25-50 for their participation, depending on their initial willingness to participate. All respondents were U.S. citizens age
18 or older as of October 31, 2008 and living in the 48 contiguous United States and District of Columbia. Respondents were interviewed face-to-face and responses recorded by interviewers on laptops.

4.3.2 Measures

*Political Knowledge* The four items of particular importance to this study are the open-response Office Recognition Items which ask respondents if they can name the job or political office held by Gordon Brown, Dick Cheney, Nancy Pelosi, and John Roberts. The issues with these responses and the circumstances surrounding their re-coding are well known (see Chapter 2) in the discipline though utility can still be drawn from their latest release. At a panel held at the 2008 annual meeting of the Midwest Political Science Association (MPSA), 11 categories were created into which the open-ended Office Recognition items would be placed for substantive use. These categories were later adjusted by the ANES to accommodate coders that may have not been particularly knowledgeable about U.S. politics. In the end, the ANES released the responses coded into 15 or 16 categories for each of the four items. For example:

“The first name is: NANCY PELOSI. What job or political office does she NOW hold?”

Responses to this item were coded along 16 categories from “Speaker of the House,” coded 01 as the most correct response, to “Congressperson,” coded 16 as a somewhat-correct response, to “Don’t Know” or some other incorrect response, coded 95 and 98 respectively.

I then adjusted these categories into 3-level ordinal variables (brown3lvl, cheney3lvl, pelosi3lvl, roberts3lvl), accounting for varying degrees of “correctness.” Generally, the top three to four responses were coded 2 as “completely correct” when the respondent’s response included the person’s current and official title, while other responses that were

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1Participants of the panel included: Scott Althaus, Matt Baum, Jim Gibson, Jennifer Hochschild, Jennifer Jerit, Jon Krosnik, Skip Lupia, Markus Prior, and John Zaller.
“somewhat correct” due to an incomplete or somewhat incorrect response were coded as 1, leaving completely incorrect and “Don’t’ Know” responses to be coded as 0 showing no knowledge about the item in their response. The full “2008 Political Knowledge Response Office Recognition Master Codes” and their corresponding codings for this chapter’s study are available in the Appendix. Proportions of these four variables, calculated using sample weights, are available in table 4.1.

Table 4.1: Proportions for 2008 ANES Office Recognition Items

<table>
<thead>
<tr>
<th>Knowledge Level</th>
<th>Gordon Brown</th>
<th>Dick Cheney</th>
<th>Nancy Pelosi</th>
<th>John Roberts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>.553</td>
<td>.143</td>
<td>.310</td>
<td>.510</td>
</tr>
<tr>
<td>1</td>
<td>.383</td>
<td>.123</td>
<td>.386</td>
<td>.435</td>
</tr>
<tr>
<td>2</td>
<td>.064</td>
<td>.775</td>
<td>.384</td>
<td>.055</td>
</tr>
</tbody>
</table>

After arriving at the four new knowledge variables, a fifth variable (total3lvl) was created by summing the previously constructed variables for use in a model that will assess the respondent’s political knowledge across the four office response items.

Table 4.2: Proportions for the Sum of the 2008 ANES Office Recognition Items

<table>
<thead>
<tr>
<th>Knowledge Level</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>.114</td>
</tr>
<tr>
<td>1</td>
<td>.041</td>
</tr>
<tr>
<td>2</td>
<td>.141</td>
</tr>
<tr>
<td>3</td>
<td>.101</td>
</tr>
<tr>
<td>4</td>
<td>.210</td>
</tr>
<tr>
<td>5</td>
<td>.189</td>
</tr>
<tr>
<td>6</td>
<td>.146</td>
</tr>
<tr>
<td>7</td>
<td>.037</td>
</tr>
<tr>
<td>8</td>
<td>.021</td>
</tr>
</tbody>
</table>

Internet Use A key independent variable in this study, the measure for Internet use, was built from respondents’ responses to two items. The first, V085010 or V085021, asked if the respondent had read, watched, or listened to information on the Internet about the campaign for President. Respondents that indicated they did not were coded as 0 in the
new measure. A second item, V085010a or V085021a\textsuperscript{2}, asked “Would you say you read, watched, or listened to information on the Internet about the campaign for President A GOOD MANY times, SEVERAL, or JUST ONE OR TWO?” The responses were coded as follows: “Just one or two” was coded as 1, “Several” was coded as 2, and “A good many” was coded as 3. These codings leave us with a 4-level ordinal variable measuring Internet use.

These items were chosen to best represent Internet use because they included responses from the most respondents. Another set of Internet-related items, V083023, V083023a, and V083023b, asked respondents to say how many days per week or times per day they used the Internet for information on politics and elections. While these items might give a more direct measure of respondents’ use of the Internet for political information, these items are not used here because they were only asked to about half of the 2008 ANES respondents and would greatly reduce the survey’s usable sample size.

Other Media Use Similar to Internet Use, variables connected to the use of, and frequency of use for Television and Newspaper are included in the models. These variables were constructed in an identical fashion to the Internet Use variable described above.

SES Rather than use one or the other as a simple measure of Socio-Economic Status, measures for both Income and Education are included in the models. Income is measure on a 0-25 scale with 0 representing those earning $2,999 or less and 25 representing those earning $150,000 or more, rising in varied increments between $2,000 and $15,000\textsuperscript{3}. Education represents the number of years in school the respondent reported completing.

Other Demographics These and the above controls are added to the model because they are known to have relationships with political knowledge. They are included in the model

\textsuperscript{2}In the 2008 Time Series Study, the ANES randomly divided the sample and applied a different, yet similar, set of media consumption items to each subsample. For the purposes of this study, the two items are similar enough to be used in conjunction without issue.

\textsuperscript{3}Further variable information and full survey item text is included in the Appendix.
to help reduce spuriousness. As suggested by previous studies (Delli Carpini and Keeter 1996), further demographic variables can play a key role in determining political knowledge. Gender is dummy-coded 1 for males. Race is coded as 0 for whites, 1 for blacks, and 2 for others. These are converted into dummy variables for blacks and others while whites remain the baseline group. A separate measure of ethnicity is dummy-coded for respondents that identified as Hispanic. In some instances, Age, as a continuous variable, is replaced by a dummy code for Young (ages 18-29) when it is believed to be of substantive interest.

While some models of political knowledge (Wei and Hindman 2011; Mossberger et al. 2008) control for political party, I have decided a more appropriate control would be partisan intensity, assuming those with stronger party affiliations are more likely to be knowledgeable regardless of which party they self-attribute. As in Chapter 3, the separation of partisanship and intensity into two distinct variables follows in the footsteps of Kenski and Stroud (2006).

In the 2008 ANES survey, the sample is split in half and then asked about how interested they are in political campaigns. While a better gauge of political interest would be a blunt item about interest in politics an item asking about interest in political campaigns should equate to general interest in politics, especially in a presidential campaign year. Half of the respondents received an item with three choices of varying degrees of interest, while the others received an item with five choices. Luckily, the three choices match up well with the first, third, and fifth of the five-choice item. This control variable is included to that the analysis of media use is free of any spuriousness caused by the respondent’s inherent interest in and affinity for politics. This and the other controls allow for more confidence that coefficients representing media use are truly measuring the effects of media use, and not some other effect on political knowledge.

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4An item like this, V085072, is asked in the survey but only to half of the sample.
4.3.3 Statistical Procedures

In the model of political knowledge based on the Office Recognition that combines the four items into a nine-point, 0-8, scale, the dependent variable will be treated as a continuous variable and Linear Regression is used. One-tailed tests are used in the model as specific directional effects are expected. In all cases, the statistical tests will be run using STATA 12 where sample weights can be easily accounted for.

4.4 Findings

Table 4.3 shows the regression coefficients for the political knowledge model where an interaction effect is used to determine the effect of increasing Internet use on the political knowledge of the young and older cohorts. All of the coefficients for the control variables are found to be in the expected directions and statistically significant except for Income. Prior scholarship suggests that increasing income ought to lead to increased political knowledge, though the discrepancy shown here could be the product of ANES coding limitations.

In order to correctly interpret the results in table 4.3, one must remember that the baseline comparison group in this instance is the older cohorts with no Internet use. The first three coefficients listed are that of the older cohorts with rising levels of Internet use. As expected, older respondents that report some or high Internet use have significantly more political knowledge than those with no or little Internet use. Therefore, for the older respondents, we can accept $H_1$ which states that those using the Internet will have higher levels of political knowledge.

The next coefficient shows the comparison of young people (with no Internet use) and the baseline group, older cohorts with no Internet use. The coefficient is both negative and significant suggesting we can accept $H_2$ as young people do indeed tend to have lower levels of political knowledge.
Table 4.3: Linear Regression Model of Political Knowledge with Interaction Effect

<table>
<thead>
<tr>
<th>Predictors</th>
<th>b(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Internet Use</td>
<td>0.239</td>
</tr>
<tr>
<td></td>
<td>(0.183)</td>
</tr>
<tr>
<td>Some Internet Use</td>
<td>0.470***</td>
</tr>
<tr>
<td></td>
<td>(0.142)</td>
</tr>
<tr>
<td>High Internet Use</td>
<td>0.432**</td>
</tr>
<tr>
<td></td>
<td>(0.182)</td>
</tr>
<tr>
<td>Young</td>
<td>-0.592**</td>
</tr>
<tr>
<td></td>
<td>(0.208)</td>
</tr>
<tr>
<td>Young x Little Internet Use</td>
<td>-0.115</td>
</tr>
<tr>
<td></td>
<td>(0.429)</td>
</tr>
<tr>
<td>Young x Some Internet Use</td>
<td>0.492</td>
</tr>
<tr>
<td></td>
<td>(0.319)</td>
</tr>
<tr>
<td>Young x High Internet Use</td>
<td>0.627*</td>
</tr>
<tr>
<td></td>
<td>(0.361)</td>
</tr>
<tr>
<td>Education</td>
<td>0.227***</td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
</tr>
<tr>
<td>Income</td>
<td>-0.010</td>
</tr>
<tr>
<td></td>
<td>(0.009)</td>
</tr>
<tr>
<td>Race (White)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.731***</td>
</tr>
<tr>
<td></td>
<td>(0.121)</td>
</tr>
<tr>
<td>Other</td>
<td>-0.223</td>
</tr>
<tr>
<td></td>
<td>(0.166)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.470**</td>
</tr>
<tr>
<td></td>
<td>(0.131)</td>
</tr>
<tr>
<td>Partisan Intensity</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>(0.053)</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.258***</td>
</tr>
<tr>
<td></td>
<td>(0.052)</td>
</tr>
<tr>
<td>Newspaper Use</td>
<td>0.102*</td>
</tr>
<tr>
<td></td>
<td>(0.058)</td>
</tr>
<tr>
<td>Television Use</td>
<td>0.197***</td>
</tr>
<tr>
<td></td>
<td>(0.058)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.623*</td>
</tr>
<tr>
<td></td>
<td>(0.348)</td>
</tr>
<tr>
<td>Observations</td>
<td>1906</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.277</td>
</tr>
</tbody>
</table>

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, One-Tailed tests
The following three coefficients listed, however, are the most important of this analysis. The underlying theory of this chapter is that Internet use combats young people’s tendency to have less political knowledge than older cohorts, and these results show that to be true. The coefficients for young people with little and some Internet use are not significant, suggesting there may be no significant change in political knowledge for young people at these levels of Internet use. No significant difference as a result is key. This can be interpreted as a normatively better result than a negative and significant coefficient. Instead of being sure that young people with little or some Internet use have significantly less political knowledge, these coefficients suggest the levels of political knowledge are likely similar to older cohorts with no Internet use.

Lastly, and most importantly, the results show that the final group, young people with high Internet use are likely to have significantly higher levels of political knowledge. These results allow for the acceptance of $H_3$ because increasing levels of Internet use lead to higher levels of political knowledge among young people, as expected.

![Figure 4.1: Predicted Values of Political Knowledge by Internet Use](image-url)
The graphical representation\textsuperscript{5} of table 4.3 is shown in figure 4.1. Here, the linear predictions for the young and older cohorts are shown based on the rising levels of Internet use. Across the x-axis are the levels of Internet use from no use to high Internet use. As the coefficients in table 4.3 suggest, the linear prediction for young people with no Internet use is lower than that of older cohorts with no Internet use. As use increases, however, the linear prediction for young respondents rises toward and indeed surpasses the linear prediction for older cohorts’ political knowledge.

While the included 95\% confidence intervals seem to cloud the certainty of this shrinking gap in political knowledge, they can add certainty in another respect. Based on the intervals included here, the highest point within the 95\% confidence interval for young people with no Internet use is lower than the lowest point within the same interval for high Internet use. Therefore, whatever the actual value for high Internet use is for young people, we can be at least 95\% confident that it is higher than the actual value for no Internet use among young people, based on this data.

4.5 Conclusion

This study sets out to determine how increasing use of the Internet affects the depth of political knowledge respondents have using specific office recognition items both collectively and individually from the 2008 ANES Survey. Further, this study attempts to separate and gauge the effects of Internet use specifically on young people’s political knowledge.

The results show that Internet use does, in fact, lead to increased political knowledge. This is shown above graphically and through regression analysis. This study finds that among the general population, as Internet use increases, so does the likelihood of higher knowledge about major political office holders. Also, deeper knowledge of these leaders and figures increases with Internet use as well.

\textsuperscript{5}This figure’s 95\% confidence intervals are based on two-tailed tests, rather than the one-tailed tests found in the table.
This detailed analysis shows that Internet use does not seem to be increasing political knowledge uniformly across sub-population groups. Based on the findings here, young people must become intensive users of the Internet in order to fully reverse the political knowledge deficiencies found in their cohort group. Some use of the Internet, and even moderate use, does not lead to more depth of political knowledge, and, as the data suggest, could even lead to less knowledge.

These findings suggest that absolute increases in use of the Internet for political news and content is not enough and perhaps it is a certain type of young person who feels, for whatever reason, a strong desire to be a fully informed as possible. Perhaps rather than frequency of use, there is some other tendency that encourages young people to dive down the “rabbit-hole” of political information and content available on the Internet.

Another explanation could be the Internet use measure use in this analysis. The variable used in this chapter makes direct reference to using the Internet for information about the 2008 presidential campaign. While it is no stretch to imagine those looking for information on the campaign might be the same individuals using the Internet for general political information, not all political information available on the Internet is, or was, campaign-related. Had the items asking about Internet use with regard to politics and elections been asked to the entire sample, perhaps the effects of Internet use on young people’s political knowledge might have been stronger\(^6\).

In the future, this line of study could benefit from data that details actual Internet use, sites visited, time spent, stories read, links clicked, instead of self-reported Internet use. Further, stronger categories of political knowledge could help identify what types of knowledge is gained in Internet use. Small-scale experiments lend themselves to this type of study and could be employed in the future to analyze Internet use habits and their effects on political knowledge.

\(^6\)A separate model was run using the Internet use variables about general politics and elections with half of the sample. The results showed similar directions and significance for the coefficients of interest.
In the Chapter 3, political knowledge gaps across distinct demographic groups were described as well as the effects of Internet access on those gaps in coordination with literature on the first digital divide. In this chapter, the second digital divide, that of Internet use, becomes the subject of importance. Here, the analysis points to intentional increases in Internet use for political information as a possible solution to the age-based political knowledge gap. In the next chapter, the dissertation turns to a comparison of the Internet and its effect on political knowledge gaps versus the effects of other media types.
Chapter 5
MEDIA USE AND POLITICAL KNOWLEDGE IN THE 2012 ANES

5.1 Introduction

As a discipline, political science has placed great value on citizens’ political knowledge in terms of adding to the health of the American political process. As discussed earlier in this dissertation (see Chapter 2), political knowledge, while possessed at least in some small amount, is not evenly distributed amongst the populace. Knowledge gaps have formed across a number of demographic divides like age, race, education, and income (Delli Carpini and Keeter 1996; Jennings 1996; Wei and Hindman 2011; Zaller 1992; Wattenberg 2007). What is alarming about these knowledge gaps is that groups whose interests are so often underrepresented in government are also often the ones at the bottom of these political knowledge gaps (Delli Carpini and Keeter 1996).

Past research has also found that political knowledge gaps are often associated with differences in selective exposure to particular media and its consumption (Prior 2005; Tichenor, Donohue, and Olien 1970; Eveland, Shah, and Kwak 2003). Often, increased use of media is associated with higher socioeconomic status and is found to have a direct effect on levels of political knowledge. Before Internet access became widespread, scholars focused their research on television, radio, and newspaper use. These “old or traditional media” are now often directly compared to “new media,” a term that has come to encompass general informational Internet use as well as social media use via computers and/or smart phones.

Recently, scholars have begun to assess the differences in the way new and old media affect Americans’ political knowledge. Some have begun to move focus from whether
Americans have access to the Internet (discussed in Chapter 2 as the “first digital divide”) to how Americans use the Internet (Mossberger et al. 2008; Wei and Hindman 2011). The literature has largely moved away from simple access to the “second digital divide” and how those with access are using the Internet to further or stagnate their political knowledge levels. While recent research (Mossberger et al. 2008; Wei and Hindman 2011) has tested these first and second digital divides against each other, this study will continue to focus on the second and Internet use.

This chapter will spotlight three prominent knowledge gaps from political science and communication studies literature: age, education, and gender. The main concern will be how use of specific media types affects these knowledge gaps. Does increased media use cause widening or narrowing of these gaps? Are there significant differences in the way traditional media affects these gaps versus new media? Or are these political knowledge gaps so deeply entrenched in the American political process that media use has no effect on them for ill or gain? Which, if any, of these media types can be used to help those at the bottom of political knowledge gaps close in on those above?

If those with disproportionately lower political knowledge (the young, women, the less educated) were able to arm themselves with more political knowledge, then perhaps they would be better equipped to participate in the American political process and thereby have their interests better heard and addressed. Using data from the 2012 ANES Time Series study, this research project intends to answer these questions.

5.2 Theory and Expectations

5.2.1 Establishing Media Use

Before diving into media effects on political knowledge and knowledge gaps, it is important to establish why there might be expectations that the established gaps would change due to consumption and use. Past research has shown that not all Americans (or citizens of any country, for that matter) consume media at the same rate. Tichenor et al.
found that SES is often one deciding factor in whether media content is consumed, accepted, and retained.

This study is initially interested in who uses what media for information so that we can further assess any benefits gained by that use. There is no reason to expect informational media use to be uniform across the groups of interest. On the contrary, specific group differences are likely to drive gaps in informational use across both new and traditional media.

Traditionally, young people are infrequent consumers of politics-related news. Therefore, at least with respect to old/traditional media, we might expect age to be a predictor of more informational use of media types. In addition, higher levels of SES (often measured by income or education levels) are associated with increases in informational use of the media, and we would expect these trends to hold for traditional media in 2012 as well (Wei and Hindman 2011; Bonfadelli 2002; Prior 2005; Tichenor et al. 1970). In addition, differences in informational use across gender groups has been found to favor men (Prior 2005; Delli Carpini and Keeter 1996; Chaffee and Kanihan 1997) over women. Hypotheses related to predicting informational use of traditional media are as follows:

\[ H_{1a} : \text{Age has a positive association with increased informational use of all traditional media types.} \]

\[ H_{1b} : \text{Education and Income have a positive association with informational use of all traditional media types.} \]

\[ H_{1c} : \text{Male gender has a positive association with increased informational use of all traditional media types.} \]

Additional consideration is given in this study to which groups might use the Internet for more political news or information. Wei and Hindman (2011) argue that while there may be some utility for “recreational” use of the Internet in terms of political knowledge, informational use is more likely to lead to increases in knowledge and participation. Howard, Rainie, and Jones (2001) show education as positively associated
with searching for political and government information in the earlier days of Internet use,
and we expect that trend to continue as those receiving more Internet are probably more
likely to develop more sophisticated Internet skills. Income, too, is probably associated
with Internet use as those with more discretionary income are probably more likely to have
Internet-ready machines in their household or work at companies where the Internet is
used.

Age, on the other hand, is probably less likely to be associated with informational
Internet use, and could actually be negatively associated. Young people tend to use the
Internet (for whatever purpose) at higher rates and therefore are more likely to develop the
skill needed to efficiently use the Internet. Finally, previous research (Mossberger et al.
2008; Prior 2005) shows females less likely to use the Internet in general, therefore it is
logical to conclude they would have less informational use as well. Hypotheses related to
predicting informational use of the Internet are as follows:

\[ H_{2a}: \text{Age has a negative association with informational use of the Internet.} \]

\[ H_{2b}: \text{Measures of Education and Income have a positive association with} \]
\[ \text{informational use of the Internet.} \]

\[ H_{2c}: \text{Male gender has a positive association with informational use of the} \]
\[ \text{Internet.} \]

5.2.2 Media Use and Knowledge Gaps

Within each of the media types, there are different expectations of just how wide
these consumption gaps might be, based largely on the amount of choices/options available
to consumers of that media type. Wei and Hindman (2011, 220) posit that, “although
selective exposure exists among traditional media users, it is somewhat constrained by the
form, structure, and content of traditional media.” While there are choices for “old media”
consumption, they are somewhat limited.
For example, there are usually not more than two daily newspapers in a given market (most markets only have one, and some are no longer “daily” in the traditional sense), and within those papers, the amount of political news is generally limited to one or two sections. Therefore, the upper limit to the amount of political knowledge to be gained from reading the newspaper is definite and the same for any and all newspaper readers/users.

The same is true for radio and television. Even if someone consumed as much of a media type as possible (say, all 24 hours in a day) there is still an upper limit to the knowledge to be gained. Further, many of the same news items (though sometimes from differing perspectives) are often covered by multiple outlets of a media type and across traditional media types in general. This somewhat limits that amount of information and political knowledge there is to be gained using traditional media.

The Internet, however, is an entirely new type of media. Bonfadelli (2002) refers to the Internet as “heterogenous and potentially unlimited” in regard to content available online. Further, while traditional media uses headlines and page layouts to identify to readers/viewers what information is relevant and important, the Internet is not usually structured by journalists or editors\(^1\) and allows users to seek a much or as little information about a topic as is available. It is this crucial difference between new and traditional media that should lead to differences in the effect of informational Internet use on the education, age, and gender gaps.

Rather than focus solely on the Internet, this study will examine the use of all four media types and their effects on the education, age, and gender gaps through the use of interaction effects in models predicting respondents’ political knowledge.

*Education Gap*  As mentioned above, those with higher education are expected to have higher informational use of the Internet. When interacted, it seems reasonable to expect that the education based knowledge gap would expand. If those with more education,

\(^1\)An obvious exception being the websites of newspapers or television stations/programs.
which leads to higher knowledge, use the Internet more, which also leads to higher
knowledge, then the expectation is that as both interacted variables increase, so will
knowledge at a higher rate, all else being equal. The same can be assumed about the other
types of media as well. Hypotheses for interaction effects of media types on the
education-based knowledge gap are as follows:

\[ H_{3a} : \text{Increases in Education will result in steeper increases in political} \]
\[ \text{knowledge as informational use of the Internet increases, and therefore a} \]
\[ \text{widening education-based knowledge gap.} \]
\[ H_{3b} : \text{Increases in Education will result in steeper increases in political} \]
\[ \text{knowledge as informational use of television increases, and therefore a widening} \]
\[ \text{education-based knowledge gap.} \]
\[ H_{3c} : \text{Increases in Education will result in steeper increases in political} \]
\[ \text{knowledge as informational use of newspaper increases, and therefore a widening} \]
\[ \text{education-based knowledge gap.} \]
\[ H_{3d} : \text{Increases in Education will result in steeper increases in political} \]
\[ \text{knowledge as informational use of radio increases, and therefore a widening} \]
\[ \text{education-based knowledge gap.} \]

**Gender Gap**  Here, assumptions about media use (both new and traditional) are that the
interactions of gender and media use would continue to exacerbate the gender-based
knowledge gap. Like the education gap, those with more knowledge when not counting for
media use (males) are likely to have even more knowledge once the effects of media use are
added. Hypotheses for interaction effects of media types on the gender-based knowledge
gap are as follows:

\[ H_{4a} : \text{The effects being male will result in steeper increases in political knowledge} \]
\[ \text{as informational use of the Internet increases, and therefore a widening} \]
\[ \text{gender-based knowledge gap.} \]
$H_{4b}$: The effects of being male will result in steeper increases in political knowledge as informational use of television increases, and therefore a widening gender-based knowledge gap.

$H_{4c}$: The effects of being male will result in steeper increases in political knowledge as informational use of newspaper increases, and therefore a widening gender-based knowledge gap.

$H_{4d}$: The effects of being male will result in steeper increases in political knowledge as informational use of radio increases, and therefore a widening gender-based knowledge gap.

**Age Gap** Media effects on the age-based knowledge gap are also of interest. In the model below assessing the interaction effects of media use on the age-based knowledge gap, a separate, dichotomous variable is used for age. Rather than the continuous variable described in the next section, the respondents are classified into young (ages 18-29) and non-young (ages 30+) to identify the effects of media types on the knowledge gap between these two groups.

As stated above, young people are expected to make information use of the Internet at higher rates than older cohorts. The negative association between informational Internet use and age hypothesized above leads us to expect an interaction between age and Internet use to shrink the age-based knowledge gap in favor of young respondents.

However, in conjunction with the earlier hypotheses about informational use of traditional media types and age we can expect interactions of traditional media use and age to deepen the age-based knowledge gap. Still, increases in use should lead to increases in political knowledge even among the young. These increases, however, are likely to be smaller than those of the older cohorts. Hypotheses for interaction effects of media types on the age-based knowledge gap are as follows:
\(H_{5a}\): Young people will have steeper increases in political knowledge as informational use of the Internet increases, and therefore a shrinking age-based knowledge gap.

\(H_{5b}\): Young people will have shallow increases in political knowledge as informational use of the television increases, and therefore result in a growing age-based knowledge gap.

\(H_{5c}\): Young people will have shallow increases in political knowledge as informational use of the newspaper increases, and therefore result in a growing age-based knowledge gap.

\(H_{5d}\): Young people will have shallow increases in political knowledge as informational use of the radio increases, and therefore result in a growing age-based knowledge gap.

5.3 Method

5.3.1 Data

All of the data used in this study comes from the 2012 ANES Time Series Study. All of the results presented here are found using the August 2012 release of the data set. For the first time in ANES history, the Time Series survey data was collected using two separate samples, one with two face-to-face (FTF) interviews (one before the 2012 general election and one after) and the other through shorter computer-based online interviews (two interviews before the election and two after). Both samples were nationally representative and for all data presented in this study, both samples received and answered the same items.

Weight variables are included in the data set and are employed in this analysis. The data set includes over 5,900 unique respondent records though some are dropped from the set due to incomplete or inapplicable responses. As incentives, Internet participants were paid $65 for completing all four waves, and FTF participants were paid $100 to $225 upon
completion of the after-election wave depending on their willingness to participate. The median lengths for the four Internet interviews were between 32 and 44 minutes, while the medians for the FTF interviews were 95 and 96 minutes.

5.3.2 Measures

**Political Knowledge** Nine political knowledge items were selected from the 2012 Time Series study. Respondents were asked to identify which party controlled the House and Senate before the 2012 election. Respondents were also asked to identify the religion of each of the 2012 presidential candidates. These items have been included in ANES Time Series Surveys in the past and were coded 0 for incorrect responses and 1 for correct responses.

In addition to the items discussed above, five additional political knowledge items were asked during the Computer Aided Self Interview (CASI) portion of the interview in order to test the respondent’s knowledge of American government. These items were: how many times an individual can be elected president; if the federal deficit was bigger, the same, or smaller since the 1990s; how many years a term in the Senate is; choosing a correct definition of medicare; and, picking on which of the following the federal government spends the least: foreign aid, medicare, national defense, or social security. All of these items were also recoded 0 for incorrect responses and 1 for correct responses. Once all items were coded to 0 or 1, a composite 10-point, 0 to 9, index was created to be used as the over-all measure of political knowledge.

In keeping with recent literature on political knowledge measurement and conceptualization in reference to gender (Stolle and Gidengil 2010; Dolan 2011), more items relating to women in office or the provision of government services and programs would have been beneficial in this analysis. As the ANES does not include these types of questions (except for the item on medicare above), the results of the gender gap model based on the items available will likely underestimate the political knowledge of women.
Media Use  Respondents were asked in pre-election interviews, “During a typical week, how many days do you watch, read, or listen to news [using media], not including sports?” for all four media types; radio, newspaper, television, and Internet. These are used to create an 8-point, 0 to 7 scale of weekly media use.

Age  Through a series of items aimed at establishing a respondent’s specific birthday, the ANES used that data to calculate respondents’ ages on the date of the pre-election interview. Those ages were then categorized into 13 age groups beginning with respondents ages 17 to 20 and then increasing by five years in each group thereafter until the final group representing respondents 75 years or older.

In the model concerned with the effects of media use on the age gap, a separate, dichotomous variable was coded where respondents ages 17-29 (groups 1-3 in the above variable) are coded as 1 for being young while all others are coded 0 for non-young.

Education  The ANES includes a group of items used to ascertain the highest level of education obtained by the respondent. Respondents are then categorized into one of five education groups spanning from “less than high school credential” to “graduate degree.”

Gender  Gender is dummy-coded as 1 for males and 0 for females. Using sample weights, the data set is 52.1% female.

Other Control Variables  These and the above control variables are added to the models because they are known to have relationships with political knowledge. They are included in the models to help reduce spuriousness. Income is measured in a 1- to 28-point scale

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2Admittedly, representing age with a categorical variable leads to a loss in data. Given the choice, we would prefer the use of exact ages on the interview date, but this data is currently restricted by the ANES as it could be used to further identify the anonymous respondents.

3Again, a better measure of education would be to use the exact number of years of education the respondent has. The ANES normally includes this variable but in the case of the 2012 Time Series, this data has been restricted also to preserve the anonymity of the respondents.
representing 28 ranges from less than $5,000 per year (coded 1) to more than $250,000 per year (coded 28).

Party identification is included as a control variable where independents were coded as 0, Democrats (including leaners) were coded as 1, and Republicans (including leaners) were coded as 2. In the models, these become dummy variables for Democrats and Republicans, leaving Independents as the baseline group. Additionally, partisan intensity is included as a control where those that identified as pure independents were coded as 0, independent-leaners were coded as 1, not very strong Democrats/Republicans were coded as 2, and strong Democrats/Republicans were coded as 3. Separation of partisanship and intensity is discussed in Chapter 3 and the inclusion of the two as separate controls follows in the footsteps of Kenski and Stroud (2006).

In the 2012 ANES survey, respondents are asked “How often do you pay attention to what’s going on in government and politics?” and are given five respondents increasing increments from Never to Always. This item is used as a measure of interest in politics. Like in the previous chapters, controlling for interest in politics allows the analyses to separate a respondent’s interest from the actual effect increased media use has on political knowledge.

The Race dummy variables are based off the summary variable developed by the ANES combining race and ethnicity where white non-Hispanics are the baseline group and black non-Hispanics, Hispanics, and other non-Hispanics are each assigned a dummy variable.

5.3.3 Statistical Procedures

A multivariate regression was performed with informational use of each of the four media types as the dependent variable and the other variables as predictors and controls. Following the lead of Wei and Hindman (2011), these regressions provide an initial look at the use of the four media types by different demographic groups. Specifically, these
regression models show which groups are more likely to make informational use of the media types.

To examine the effects of media use on knowledge gaps, multiple regression will be used to specify models with interaction effects. Each of the three knowledge gaps (education, gender, age) will be analyzed in a separate model. Wei and Hindman (2011)\(^4\) perform a similar test, though only for the education-based knowledge gap and with preliminary 2008 ANES Panel Study data. Their interaction model, however, violates one of the key suggestions made by Brambor, Clark, and Golder (2006, 66) which is that, "Analysts should include all constitutive terms when specifying multiplicative models except in rare circumstances." Brambor et al. (2006) go on further to specify these rare circumstances (a strong theoretical expectation that an omitted term has no effect on the dependent variable, or finding that a constitutive term’s coefficient is zero), none of which apply to Wei and Hindman (2011) or the present analysis. Therefore, in all of the following models involving interaction effects, all constitutive terms are included in the models and reported in the results.

All statistical analyses are completed using STATA 12. Proper weights, provided by the ANES, are employed in all analyses using the survey command. The figures below are produced using STATA’s margins command and margins plot features.

5.4 Findings

5.4.1 Media Use Models

Table 5.1 shows the results of the multivariate regressions predicting informational use of the four media types in question. Focusing on traditional media first, we find that age is a significant and positive predictor of the use of all three traditional media. We may

\(^4\)This study is based on Tichenor et al. (1970) which analyzes television and newspaper use on the education-based knowledge gap.
therefore accept \( H_{1a} \), that age has a positive association with increased informational use of traditional media types, as true.

Table 5.1: Multivariate Regression Predicting Informational Media Use

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Internet b(SE)</th>
<th>Television b(SE)</th>
<th>Newspaper b(SE)</th>
<th>Radio b(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.061***</td>
<td>0.279***</td>
<td>0.249***</td>
<td>0.035**</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.012)</td>
<td>(0.013)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>Education</td>
<td>0.294***</td>
<td>-0.282***</td>
<td>-0.004</td>
<td>0.223***</td>
</tr>
<tr>
<td></td>
<td>(0.046)</td>
<td>(0.038)</td>
<td>(0.042)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>Males</td>
<td>0.333***</td>
<td>-0.261***</td>
<td>-0.008</td>
<td>0.305***</td>
</tr>
<tr>
<td></td>
<td>(0.095)</td>
<td>(0.084)</td>
<td>(0.083)</td>
<td>(0.087)</td>
</tr>
<tr>
<td>Income</td>
<td>0.025***</td>
<td>0.003</td>
<td>0.010</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.005)</td>
<td>(0.006)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Partisan Intensity</td>
<td>-0.046</td>
<td>-0.063</td>
<td>0.097</td>
<td>0.019</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
<td>(0.052)</td>
<td>(0.057)</td>
<td>(0.059)</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.827***</td>
<td>0.852***</td>
<td>0.364***</td>
<td>0.493***</td>
</tr>
<tr>
<td></td>
<td>(0.045)</td>
<td>(0.038)</td>
<td>(0.040)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>Party (Ind.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democrat</td>
<td>0.023</td>
<td>0.241</td>
<td>0.084</td>
<td>0.100</td>
</tr>
<tr>
<td></td>
<td>(0.192)</td>
<td>(0.181)</td>
<td>(0.165)</td>
<td>(0.177)</td>
</tr>
<tr>
<td>Republican</td>
<td>-0.132</td>
<td>0.393*</td>
<td>0.072</td>
<td>0.295</td>
</tr>
<tr>
<td></td>
<td>(0.194)</td>
<td>(0.173)</td>
<td>(0.169)</td>
<td>(0.176)</td>
</tr>
<tr>
<td>Race (White)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.126</td>
<td>0.793***</td>
<td>-0.293*</td>
<td>0.140</td>
</tr>
<tr>
<td></td>
<td>(0.147)</td>
<td>(0.128)</td>
<td>(0.132)</td>
<td>(0.143)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.141</td>
<td>0.515***</td>
<td>-0.349**</td>
<td>0.054</td>
</tr>
<tr>
<td></td>
<td>(0.138)</td>
<td>(0.114)</td>
<td>(0.123)</td>
<td>(0.128)</td>
</tr>
<tr>
<td>Other</td>
<td>-0.148</td>
<td>0.275</td>
<td>-0.350*</td>
<td>0.157</td>
</tr>
<tr>
<td></td>
<td>(0.195)</td>
<td>(0.179)</td>
<td>(0.164)</td>
<td>(0.174)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.053</td>
<td>-0.341*</td>
<td>-1.084**</td>
<td>-0.582</td>
</tr>
<tr>
<td></td>
<td>(0.224)</td>
<td>(0.181)</td>
<td>(0.175)</td>
<td>(0.193)</td>
</tr>
<tr>
<td>Observations</td>
<td>5332</td>
<td>5590</td>
<td>5589</td>
<td>5587</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.164</td>
<td>0.328</td>
<td>0.179</td>
<td>0.093</td>
</tr>
</tbody>
</table>

\*
\( p < 0.05 \), ** \( p < 0.01 \), *** \( p < 0.001 \), One-tailed Tests

Looking to the coefficients for education and income, we find that we can only partly accept \( H_{1b} \), that education and income have positive associations with traditional media use, for informational use of radio, and only with respect to rising education. In
fact, we see a significant negative effect for rising education in the informational use of television model. These findings are especially peculiar given the long-standing notion that informational use of traditional media was highly associated with rising levels of education and income. Instead, we now find that the less education a respondent has, the more likely they are to make informational use of television. We are also unable to accept $H_{1c}$, that males have a positive association with traditional media use, due to the fact that the gender (dummy coded 1 for male) coefficient is only positive and significant for radio use.

Partisan and race categorical variables are also included in the table 5.1 models. Here we find coefficients that are comparisons to baseline groups (Independents and whites, respectively). Republicans (including leaners) are found to be more likely than Independents to use television in an informational manner, though this is the only significant difference among the partisan groups. Among the racial groups, we find significant positive coefficients for Blacks and Hispanics in the television model suggesting these groups are more likely to make informational use of television than the baseline white group. We find Blacks, Hispanics, and Others significantly less likely to use newspapers for news information than the baseline white group as well.

Shifting focus to the model predicting informational use of the Internet, we find statistically significant coefficients for all four variables of interest, and in the expected directions. We are able to accept $H_{2a}$, that age is negatively associated with informational use of the Internet, as the coefficient is both negative and significant.

As expected, increases in education and income are both positive and significantly associated with increases in informational use of the Internet. We are able to readily accept $H_{2b}$, that education and income have a positive association with informational use of the Internet. We also find that the coefficient for males is positive and significantly associated with more informational use of the Internet. We are also able to accept $H_{2c}$ as males are more likely to make informational use of the Internet than females.
Interestingly, none of the coefficients for the racial groups included in the informational use of the Internet model are significant, suggesting no significant differences among these groups in terms of informational use of the Internet. Judging by the model, the same is also true for partisan groups.

Across all four models, Interest in Politics is a positive and significant predictor of informational use of media. It is unsurprising that those with greater interest in politics also tend to use media to gain information about politics and campaigns at a higher rate than those less interested.

5.4.2 Interaction Effect Models

The analysis now moves from predicting the use of media types to predicting knowledge levels based on increases in the use of these media. With established patterns of which groups are more likely to consult each media type for political information, all further analysis in the chapter focuses on which groups are benefiting the most from increased informational use.

Table 5.2 shows the interaction effects of media use on the education gap. As in prior models from the literature, positive and significant effects are found for education, Internet use, and even television use alone. None of the coefficients, however, are statistically significant in the expected direction when interacted with education levels. Without significant results we are unable to accept $H_{3a-d}$, that increases in education would result in further increases in political knowledge as each of the four media types were used.

Figure 5.1 shows a graphical representation of the interaction effects found in table 5.2. These provide a graphical representation of how interacting each type of media with education affects the predicted value of political knowledge with 95% confidence intervals. The results in table 5.2 signify that informational use of the Internet, television, newspaper, and radio have no recognizable effect on the impact of education on political

---

5 All figures showing 95% confidence intervals are based on two-tailed tests, rather than the one-tailed tests found in the tables.
Table 5.2: Predicting Political Knowledge - Education Gap

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$b$(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>0.522***</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
</tr>
<tr>
<td>Internet</td>
<td>0.108***</td>
</tr>
<tr>
<td></td>
<td>(0.032)</td>
</tr>
<tr>
<td>Television</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>(0.037)</td>
</tr>
<tr>
<td>Newspaper</td>
<td>-0.031</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
</tr>
<tr>
<td>Radio</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td>Internet x Education</td>
<td>-0.007</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
</tr>
<tr>
<td>Television x Education</td>
<td>-0.019</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
</tr>
<tr>
<td>Newspaper x Education</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
</tr>
<tr>
<td>Radio x Education</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
</tr>
<tr>
<td>Age</td>
<td>0.124***</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
</tr>
<tr>
<td>Male</td>
<td>0.354***</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
</tr>
<tr>
<td>Income</td>
<td>0.037***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
</tr>
<tr>
<td>Partisan Intensity</td>
<td>-0.006</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.393***</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
</tr>
<tr>
<td>Party ID (Ind.)</td>
<td></td>
</tr>
<tr>
<td>Democrat</td>
<td>0.409**</td>
</tr>
<tr>
<td></td>
<td>(0.132)</td>
</tr>
<tr>
<td>Republican</td>
<td>0.273*</td>
</tr>
<tr>
<td></td>
<td>(0.132)</td>
</tr>
<tr>
<td>Race (White)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.546***</td>
</tr>
<tr>
<td></td>
<td>(0.111)</td>
</tr>
<tr>
<td>Other</td>
<td>-0.631***</td>
</tr>
<tr>
<td></td>
<td>(0.126)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.571***</td>
</tr>
<tr>
<td></td>
<td>(0.113)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.752***</td>
</tr>
<tr>
<td></td>
<td>(0.221)</td>
</tr>
<tr>
<td>Observations</td>
<td>4988</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.371</td>
</tr>
</tbody>
</table>

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, One-tailed Tests
knowledge. Figure 5.1(a), (c), and (d) show us how as we move from lower levels of education to higher levels, the slope of the linear prediction of political knowledge remains largely the same, especially when taking the 95% confidence intervals into consideration. In all, the relatively parallel lines in these three graphs indicate that these media types have little to no effect on the education-based knowledge gap.

(a) Internet  
(b) Television  

(c) Newspaper  
(d) Radio  

Figure 5.1: Predictive Values of Political Knowledge - Education Gap

Figure 5.1(b), however, gives a visual representation of the negative and significant coefficient found for the interaction between education and informational television use. The knowledge gap is much smaller on the right-hand side of the graph, when television
use is at its highest, than it is on the left-hand side when television use is at its lowest. Interestingly, the top line of the graph, representing those with the highest education, has a negative slope suggesting that despite high education, increased television use might actually decrease the amount of knowledge a respondent has. The two groups are still around two full knowledge items apart at the highest use of television, but this graphical representation suggests a possible shrink in the education-based knowledge gap. In the future, models of political knowledge should take into account the “dumbing-down” effect increased television use might have on those with already high political knowledge.

Table 5.3 shows the interaction effects of gender, in this case being male, and the four media types. Again, the results are not as strong as expected. None of the interactions of the traditional media types with gender result in statistically significant results. Two of the traditional media interactions, television and newspaper, are negative, but not statistically significant. Graphing these results may still give us a picture of what effects media can have on the gender-based knowledge gap. Regardless, we are unable to accept $H_{4b}$, $H_{4c}$, or $H_{4d}$, regarding steep increases in political knowledge for males as they use traditional media, due to the lack of significance of the coefficients.

We are, however, able to accept $H_{4a}$, that being male will result in steeper increases in political knowledge as informational use of the Internet increases, because the coefficient of the interaction for informational use of the Internet and being male is positive and significant. This means that the gender-based knowledge gap should widen as we increase the amount of informational Internet use. This is an important finding as it confirms the suspicion that informational Internet use exacerbates the already existing gender-based knowledge gap.

Figure 5.2 shows the graphical representation of the findings from table 5.3. Here we are able to see the predicted knowledge values for each gender across media types. In all four cases, the lower line represents females and the upper line represents males. Judging

\footnote{Notice the difference in scale between Figures 5.1 and 5.2. The education-based knowledge gaps seem to be much wider than the gender-based gap.}
Table 5.3: Predicting Political Knowledge - Gender Gap

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$b$(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.253*</td>
</tr>
<tr>
<td></td>
<td>(0.137)</td>
</tr>
<tr>
<td>Internet</td>
<td>0.069***</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
</tr>
<tr>
<td>Television</td>
<td>-0.023</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>(0.017)</td>
</tr>
<tr>
<td>Radio</td>
<td>-0.016</td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
</tr>
<tr>
<td>Internet x Male</td>
<td>0.039*</td>
</tr>
<tr>
<td></td>
<td>(0.023)</td>
</tr>
<tr>
<td>Television x Male</td>
<td>-0.019</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
</tr>
<tr>
<td>Newspaper x Male</td>
<td>-0.031</td>
</tr>
<tr>
<td></td>
<td>(.023)</td>
</tr>
<tr>
<td>Radio x Male</td>
<td>0.039</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
</tr>
<tr>
<td>Age</td>
<td>0.124***</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
</tr>
<tr>
<td>Education</td>
<td>0.442***</td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
</tr>
<tr>
<td>Income</td>
<td>0.037***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
</tr>
<tr>
<td>Partisan Intensity</td>
<td>- 0.002</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.388***</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
</tr>
<tr>
<td>Party ID (Ind.)</td>
<td></td>
</tr>
<tr>
<td>Democrat</td>
<td>0.421**</td>
</tr>
<tr>
<td></td>
<td>(0.132)</td>
</tr>
<tr>
<td>Republican</td>
<td>0.283*</td>
</tr>
<tr>
<td></td>
<td>(0.137)</td>
</tr>
<tr>
<td>Race (White)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.544***</td>
</tr>
<tr>
<td></td>
<td>(0.112)</td>
</tr>
<tr>
<td>Other</td>
<td>-0.633***</td>
</tr>
<tr>
<td></td>
<td>(0.126)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.573***</td>
</tr>
<tr>
<td></td>
<td>(0.112)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.021***</td>
</tr>
<tr>
<td></td>
<td>(0.161)</td>
</tr>
</tbody>
</table>

Observations 4988

$R^2$ 0.372

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, One-tailed Tests
by the slopes of the predicted value lines, we see in Figure 5.2(a) that increased Internet use seems to benefit males (gender=1) more than females. This result is evident in table 5.3 where the interaction coefficient for informational Internet use and male is positive and significant.

We are able to see a bit more of the story in Figures 5.2(b), (c), and (d) than the coefficients show us by looking at the visual representations of the interactions. In Figures 5.2(b) and (c) we see females (gender=0) seem to benefit more from increased television and newspaper use than males do. The coefficients in table 5.3 lack statistical significance for increased use of television and newspaper by females helping to shorten the gender-based political knowledge gap.

Additionally, Figure 5.2(d) shows a relatively stable predicted knowledge value for females across radio use but rising levels of political knowledge for males as radio use increases. This could mean radio use, like informational Internet use, leads to a widening of the gender-based knowledge gap. The results in table 5.3 are not significant, so no statistically significant conclusions can be drawn at this point, though it is also possible that men tend to learn more from radio use than women under similar circumstances. This could be due to the types of information covered on radio programs and the way the two genders process and store those types of information differently.

Before viewing Table 5.4’s results it is important to remember the way the age variable is coded specifically in this model. Here, those that fall into the young category (ages 18-29, or categories 1-3) are coded as 1, and all others are coded as 0.

The findings in Table 5.4 show that we can confidently accept at least one of the relevant hypotheses, $H_{5a}$, regarding young people’s steeper increase in political knowledge as Internet use increases, since the coefficient for the interaction between informational Internet use and being young is significant and positive. This suggests that young people’s knowledge grows at a higher rate as Internet use increases than the non-young’s political
Figure 5.2: Predictive Values of Political Knowledge - Gender Gap
Table 5.4: Predicting Political Knowledge - Age Gap

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$b$(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>-0.390**</td>
</tr>
<tr>
<td></td>
<td>(0.162)</td>
</tr>
<tr>
<td>Internet</td>
<td>0.064***</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
</tr>
<tr>
<td>Television</td>
<td>0.024*</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.051***</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
</tr>
<tr>
<td>Radio</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
</tr>
<tr>
<td>Internet x Young</td>
<td>0.145***</td>
</tr>
<tr>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td>Television x Young</td>
<td>-0.165</td>
</tr>
<tr>
<td></td>
<td>(0.038)</td>
</tr>
<tr>
<td>Newspaper x Young</td>
<td>-0.120</td>
</tr>
<tr>
<td></td>
<td>(0.053)</td>
</tr>
<tr>
<td>Radio x Young</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
</tr>
<tr>
<td>Male</td>
<td>0.338***</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
</tr>
<tr>
<td>Education</td>
<td>0.427***</td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
</tr>
<tr>
<td>Income</td>
<td>0.036***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
</tr>
<tr>
<td>Partisan Intensity</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.401***</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
</tr>
<tr>
<td>Party ID (Ind.)</td>
<td>0.384**</td>
</tr>
<tr>
<td>Democrat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.133)</td>
</tr>
<tr>
<td>Republican</td>
<td>0.270*</td>
</tr>
<tr>
<td></td>
<td>(0.133)</td>
</tr>
<tr>
<td>Race (White)</td>
<td>-0.605***</td>
</tr>
<tr>
<td>Black</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.112)</td>
</tr>
<tr>
<td>Other</td>
<td>-0.646***</td>
</tr>
<tr>
<td></td>
<td>(0.127)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.684***</td>
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<td></td>
<td>(0.110)</td>
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<tr>
<td>Constant</td>
<td>1.753***</td>
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<tr>
<td></td>
<td>(0.143)</td>
</tr>
<tr>
<td>Observations</td>
<td>5022</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.358</td>
</tr>
</tbody>
</table>

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, One-tailed Tests
knowledge increases. This is a significant finding as it provides an avenue (informational Internet use) of young people to actively shrink the age-based political knowledge gap.

The interactions of age with television and newspaper, on the other hand, are not statistically significant. The relevant hypotheses, $H_{5b}$ and $H_{5c}$, concerning young people’s use of television and newspaper, cannot be accepted. Not only are the results not significant, the coefficients are not in the expected direction. The tables presented in this chapter all include one-tailed tests of significance because the hypotheses are all directional. Had 5.4 used two-tailed tests, allowing for measures of significance in the opposite-than-expected directions, both of these interaction coefficients would have been negative and significant. These results present an interesting puzzle.

Why might young people’s political knowledge levels drop as they increase their consumption of television and newspaper news? Addressed in the following discussion of the graphical representations, it is possible there are too few young people that reported using these traditional media at high levels. These low sample sizes could lead to unreliable or inaccurate findings. Another explanation is the media use item wording. Respondents were asked how many days they watched on the television or read news in newspapers. It is possible some of these young respondents misunderstood the survey item and reported using the traditional media for news, but a type of news unintended for this analysis like sports or entertainment news. While not the focus of this analysis, these negative findings are interesting and demand further investigation in the future.

Finally, the coefficient for the interaction between age and informational radio use is positive but not significant and so $H_{5d}$ must also be rejected.

Figure 5.3 shows the linear predictions of political knowledge for the young and non-young groups with respect to their informational media use. This graphical representation of Table 5.4 shows how increased media use affects the age-based knowledge gaps. We can see in Figure 5.3(a) informational use of the Internet has a large and significant effect on the age-based knowledge gap. Without any Internet use whatsoever,
the predicted knowledge mean for young people is more than a full knowledge item below non-young people. This gap, however, shrinks as Internet use increases. In fact, at the highest level of Internet use, one cannot be completely confident that the mean predicted knowledge level for young people is not the same or higher than the predicted mean for non-young.

Figure 5.3: Predictive Values of Political Knowledge - Age Gap

As expected from the discussion of the coefficients in Table 5.4, Figures 5.3(b) and (c) show increases in knowledge as non-young people increase their television and newspaper use, but decreases in knowledge as young people increase their use of the same
media. While the coefficients for these interactions signify negative slopes for young people’s knowledge, the 95% confidence intervals for Figures 5.3(b) and (c) suggest that the slope of the change in young people’s political knowledge might be close to 0 or just slightly negative.

As for informational radio use and young people’s political knowledge, we see parallel lines between the two groups, echoing the positive but not statistically significant coefficient found in Table 5.4. Another interesting pattern found in Figures 5.3(c) and (d) are the widening 95% confidence intervals for young people as informational use of newspaper and radio increase. We see this probably because the frequency of young people’s usage of these media at these high levels is so low. It is certainly difficult to show that reading newspapers or listening to radio raise the political knowledge of young people when they use so little of those media in the first place.

5.5 Conclusion

This study contributes to the existing literature by examining the effects of four prominent types of media on three of the most prominent knowledge gaps from political science literature: education, gender, and age. Using regression models with correctly specified interaction terms this study is able to determine which forms of media have the potential to help close the existing knowledge gaps and allow those with disproportionately lower political knowledge the chance to more effectively participate in American politics.

While increased television use seems to boost the political knowledge of those with lower education, those with the highest levels of education seem to be hurt by increased television use. This is possibly because television news has an upper limit to the amount of information available in a given broadcast and those with the highest levels of education receive more generalized facts than those they are already familiar with. In this case, there may be a “use it or lose it” effect for those with the most education. Unless they actively
exercise what political knowledge they have, increased television use could erode specific
political knowledge stored in their memory.

Interestingly, we find that predicted knowledge levels rise almost uniformly across
education levels as Internet use increases. This suggests that increased Internet use would
be a boon for all involved, but not in a way that would level the political knowledge
playing field.

In regard to the gender-based knowledge gap, the analysis shows no significant effect
of gender on the amount of political knowledge gained by television or newspaper use.
Internet use, on the other hand, disproportionately benefits men, thus widening the
gender-based political knowledge gap.

Finally, we find a large and positive effect on young people’s political knowledge as
their informational use of the Internet increases. That increased Internet use so
significantly closes the age-based knowledge gap is the most substantively important
finding of this study. Political science and communication scholars have, in the past, found
this knowledge gap to be large and worrisome. Now, it would seem, those concerned with
young people’s ability to participate in American political process can rest easier so long as
young people continue to go to the Internet for their political information and do so with
increasing frequency.

It is important to also remember the results of increased use of traditional media in
regard to the age-based knowledge gap. These results, however, must be viewed with the
knowledge that young people seem to be leaving these traditional forms of media behind.
Still, the results above suggest little association between increased traditional media use
and political knowledge for young people.

In all, the results of this study lend credence to the idea that increased media
consumption can, in certain circumstances, help to shrink political knowledge gaps
long-held to be enduring and alarming. None of these findings suggest complete erasure of
these political knowledge gaps. Instead, one can see an opportunity for those with less
political knowledge to endeavor toward a more even distribution of knowledge, thus potentially assisting them in having their interests heard and better represented in the American political process.
6.1 Chapter Summaries

Chapter 3 began the project’s substantive portion by contributing to the literature on the first digital divide, that of Internet access. The Chapter’s analysis uses ANES data from 1988-2004 to show that among young respondents (ages 18-29), political knowledge trends tend to mirror those of the larger population. Males tend to have more political knowledge than females and whites more knowledge than nonwhites. In addition, concerns about young people having less political knowledge than older cohorts are indeed founded in this data analysis.

The main piece of Chapter 3’s analysis, however, is the changes that take place once Internet use is introduced to the model of political knowledge. Among young people, Internet users enjoy a higher average levels of political knowledge across all three election years studied (1996, 2000, and 2004). Using an interaction effect, this Chapter also points to the possibility that Internet access could be a way to close the long-suspected political knowledge gap between the young and older cohorts.

When the interaction effect is graphed, we see that Internet access raises the predicted level of political knowledge for both young and older groups. However, the slope of the predicted political knowledge for young people is decidedly steeper and shows the gap between the two groups’ predicted values to shrink to less than half. Like other studies of the first digital divide (Kenski and Stroud 2006; Katz and Rice 2002) the evidence of the Internet equalizing political knowledge across groups is weak at best. Still, the findings
from this Chapter help establish the first digital divide both within this project and in the greater political science literature.

In addition to the findings on political knowledge levels, Chapter 3 makes another contribution in terms of the development of a political knowledge measure. Specific knowledge items are selected from the ANES Time-Series studies and merged with the Cumulative Data file to produce a five-item knowledge measure. Given the problems associated with the ANES Open Response Office Recognition items discovered by Gibson and Caldeira (2009), measures like the one developed here are the first step in salvaging analyses of political knowledge in this valuable data. While the coding of the open response items remain suspect, reliable knowledge scales can still be built using other political knowledge-based items.

Chapter 4 moves to the second digital divide. Internet use, specifically the frequency of informational use, and its effect on political knowledge is the independent variable of interest. In this Chapter, the Internet use measure focuses specifically on the frequency of using the internet to follow the 2008 Presidential campaign.

The four Open Response Office Recognition items are combined and an interaction effect is used to determine if the effects of Internet use are strong enough to reverse the political knowledge gap experienced by young people. These 2008 office recognition items are selected because they provide the opportunity for respondents to earn multiple “points” for a given answer. Unlike typical correct or incorrect knowledge items, the release of the 2008 open ended responses allows for further categorization of each response as incorrect, partially correct, or fully correct.

The regression model in Chapter 4 shows that young people are more likely to have less political knowledge, as expected. The model also shows the interaction between young people and high Internet use reverses the political knowledge trend. Young people that report no Internet use have significantly lower levels of political knowledge. Young people that report little or some Internet are found to not have significant higher political
knowledge levels from older cohorts that do not use the Internet at all. But young people that report high Internet use for information of the 2008 Presidential campaign have a significantly higher level of political knowledge than the baseline group of older non-users. This positive and significant finding suggests that heavy use of the Internet for political information could be one way young people might narrow the age-based knowledge gap.

While an exciting finding, the caveat remains that young people must engage in high Internet use to reverse this knowledge trend. Little and some Internet use for political information do not buck the trend as expected. Young people have a chance to catch up to the political knowledge of older cohorts but they must do so in a dedicated and intentional way. Paradoxically, this type of Internet use is only likely from young people that are already engaged in politics, the same young people that likely already have high levels of political knowledge.

Chapter 5 continues the investigation of the second digital divide and political knowledge but adds side-by-side comparisons of the effects of the Internet to more traditional media. Further, in addition to the traditional age-based knowledge gap, this Chapter looks at media effects for the education- and gender-based knowledge gaps.

The Chapter’s results show that each type of media affects political knowledge gaps differently. For example, the results indicate that increased Internet use is actually widening the gender-based knowledge gap. On the other hand, increased use of the Internet seems to be shrinking the age-based knowledge gap.

The results show that none of the media types (traditional or the Internet) are affecting the education-based knowledge gap. It is no surprise that those individuals that tend to have more knowledge have more political knowledge as well. Further, no amount of weekly media use significantly changes the amount of knowledge these education-based groups have.
In the Chapter 5 results the gender-based knowledge gap is only affected by Internet use. Women do not benefit more from traditional media use than men do, but men do benefit more from Internet use. As stated in the Chapter, there is no real way to keep males from using the Internet, and thus the gender-based knowledge gap is likely to remain. It could also be the case that the measures used in this Chapter are tainted by the type of political knowledge items used. As they are not gender-focused, it is possible that the model in Chapter 5 vastly underestimates the amount of knowledge women have, or further, the ways in which media use affects their political knowledge.

The largest contribution of this Chapter is the effects on young people’s political knowledge as Internet use increases. Like with Internet access in Chapter 3, increased use of the Internet increases the expected political knowledge levels of both the young and older cohorts. In this instance, however, the effect is much stronger and graphical representations of this effect suggest the highest levels of Internet use could have young people surpassing the political knowledge of the older cohorts. As young people leave traditional media behind and flock to the Internet for their political information, this analysis suggests that given enough time, the age-based knowledge gap could be significantly more narrow in the future.

6.2 Themes Revisited

*Political Knowledge* Throughout the dissertation we focus on political knowledge, an important part of the cognitive political process. Current literature (see Chapter 2) tells us that while overall levels of political knowledge are low, they are not so low as to cause a breakdown in American democracy. The findings of this project are in line with much of the rest of the discipline’s estimates on political knowledge. Specific political knowledge gaps that historically exist in the American populace are found to still be present today.

Political science, and, to a lesser extent, communication studies literature has struggled with developing a common measure of political knowledge. This project
contributes three possibilities that could be used in conjunction with their related data files. Scholars like DeBell (2013); Pietryka and MacIntosh (2013) have begun to bring these political knowledge measurement issues to the forefront of the literature on political behavior and socialization. As future studies are developed, the recommendations of this and other projects must be addressed and taken into account. As for already completed surveys, establishing repeatable and reliable measures is a necessity for the discipline.

Throughout the dissertation, measurement of political knowledge has also been a recurring theme. The previous Chapters all use data gathered by the American National Election Survey. Problems with this data source have been discussed across the Chapters here, but it is important to remember that social science is often a discipline where scholars must do the best with what they have.

As others have stated (DeBell 2013), not all is lost when it comes to the issues discovered in the political knowledge items of the past ANES surveys. The ANES is still one of the most widely used and respected surveys of nationally representative respondents. Instead of dwelling on the limitations of these surveys, perhaps more focus on increasing the accuracy and reliability of the items in the future would better serve the discipline.

Young People  In the third Chapter, the Internet access model shows that young people have typically low levels of political knowledge. It also shows that simple access to the Internet provides a weak but positive effect on average political knowledge levels. In the Fourth and Fifth Chapters we continue to see lower average levels for young respondents, but opportunities for increased political knowledge are present as well. In both Chapters, models predict that with intensive use of the Internet for political information purposes, young people could greatly increase the amount of political knowledge held across their cohort.

Does the Internet spell the end of the age-based knowledge gap? Not exactly. Young people must be dedicated users of the Internet for political purposes for any large
effects be felt. Perhaps, in order to begin to close the age-based knowledge gap, the focus should be more on convincing young people to become engaged political users of the Internet rather than simply use the Internet more. Engaging young people in politics is the first step in increasing their political knowledge. Once engaged, today’s young people can use the Internet to grow and develop their political knowledge at a rate unseen by earlier generations.

This dissertation’s findings comport to typical Program Choice Theory predictions, especially with regard to young people. Those that value political information will use whatever media at their disposal to do so. Alternatively, those that have little or no desire to be politically engaged are not likely to seek out political information. Developed to explain knowledge gaps based on cable television program preferences, use of the Internet is no different. The analyses in these Chapters provides examples of how those seeking political information will find it, and those seeking to avoid that knowledge are still able to do so.

If young people are going to gain more political knowledge and thus learn when and how to make their interests heard by those in power, a cultural change throughout the cohort is likely necessary. Dedicated and intentional political Internet use are a part of this necessary change.

The Internet While few can argue the immense and rapid growth of the Internet, defining its contributions to society (thus far) remains difficult. The results of this dissertation combat the theory that access and use of the Internet could serve as a great informational equalizer in society, at least in terms of political knowledge.

As deep and as wide as content is on the Internet, users still must have access to and know how to find political content for it to seep into their political consciousness. Across the analyses here, evidence that the size and scope of the Internet contribute to
significantly higher levels of political knowledge is tainted by the realization that the
motivation for seeking out political information must also be present.

It is important to acknowledge, however, that this project and other current studies
of the Internet in no way mark the end of this wave of research. As mentioned previously
in this project, the Internet continues to grow and change in ways that are difficult to
anticipate. Just as the medium grows and changes, so does the way the public interacts
with it.

Where slow dial-up modems used to hamper users’ experiences and the availability
of information, today’s Internet users no longer need to be at an actual computer. In
addition, the rise and fall of social media sites and news empires online make almost all
findings on the Internet specific to the exact time of study. It will remain important for
political science to “check-in” with the Internet and continue to gauge its effects on the
population at large.

6.3 Closing Thoughts

Summed up, this dissertation delivers a sobering message about the possibilities of
the Internet. While there are certain opportunities for the Internet to affect Americans’
political knowledge, in general, the Internet is similar to traditional forms of media: only
those interested and intensive users gain political knowledge benefits.

However, not all is lost. These specific possibilities, regardless how small, provide a
glimmer of hope that these groups that so desperately need more political knowledge may
one day be able to attain it through dedicated Internet use. As mentioned above, a certain
cultural change may be required to really begin to shrink the knowledge gaps of the past.

Indeed, rather than the Internet be the method by which the young, the poor, the
uneducated, and gender and racial minorities begin to close these political knowledge gaps,
the Internet could be the catalyst for the cultural shift necessary to convince theses groups
to seek out political knowledge. This dissertation’s results suggest young people could be
on their way to a more equitable distribution of political knowledge. Across the political science and communication disciplines, researchers are finding the Internet to be a volatile and ever-changing part of American culture. A demographic group that is unaffected by Internet use in one election year could by vastly different four years later. Current literature on social media websites and networks is sparse, but perhaps those with less political knowledge could be persuaded to engage more in the political realm through these types of online interactions.

This project’s findings show that once young people begin to seek out information on the Internet, their knowledge levels do indeed rise at a faster rate. In the future, perhaps viewing the Internet through this interactive lens might help political science to discover what the real and lasting effects of the Internet may be.

For now, the political science and communication disciplines must view the Internet for what it seems to be: another source of media, used intensely by some but not by all. It is no great equalizer, but possible changes to the political knowledge environment based on the Internet are evident in the results presented here.

It is important to American democracy that under-represented groups work toward having their interests more present in government. These groups can make their voices and interests heard through efficient and effective political participation. All of these behaviors are tied to political knowledge. Though it may be a slow process, the evidence here suggests these groups, specifically young people, can look to the Internet as a possible solution.
REFERENCES


Gibson, R. and I. McAllister (2011, 31 August-4 September). How the Internet is driving the political knowledge gap. In *A paper prepared for delivery at the American Political Science Association meetings, Seattle*.


Levendusky, M. S. and S. D. Jackman (2003). Reconsidering the measurement of political knowledge. Unpublished manuscript, Stanford University, USA.


### Appendix A

#### VARIABLES AND CODINGS

<table>
<thead>
<tr>
<th>Variable/Name</th>
<th>Item Text/Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Young</strong></td>
<td>If age was between 18-29, = 1, otherwise 0.</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>Respondent’s age, in years.</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>Males = 1, females = 0.</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>Separate dummy variables for each racial category except white; Black: yes = 1, no = 0; Other racial group: yes = 1, no = 0.</td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>“Are you of Spanish or Hispanic origin or descent?” Yes = 1, no = 0.</td>
</tr>
<tr>
<td><strong>Year</strong></td>
<td>Chapter 3: Dummy variables derived from VCF0004: Year of study (4-digit). No dummy for 2004.</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>Chapter 3: Derived from VCF0140a: What is the highest degree that you have earned? 8 grades or less (‘grade school’) = 1; 9-12 grades (‘high school’), no diploma/equivalency = 2; 12 grades, diploma or equivalency = 3; 12 grades, diploma or equivalency plus non-academic training = 4; Some college, no degree or junior/community college level degree (AA degree) = 5; BA level degrees = 6; Advanced degrees incl. LLB = 7</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>Chapter 3: Family Income (Percentile). 0 to 16 percentile = 1; 17 to 33 percentile = 2; 34 to 67 percentile = 3; 68 to 95 percentile = 4, 96 to 100 percentile = 5</td>
</tr>
</tbody>
</table>

**Chapter 4:** 25-interval measure derived from ANES ordinal categories.

**Chapter 5:** 28-interval measure derived from ANES ordinal categories.
<table>
<thead>
<tr>
<th>Partisan Intensity</th>
<th>Independent or Apolitical = 1; Leaning Independent = 2; Weak Partisan = 3; Strong Partisan = 4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partisanship</td>
<td>Independents = 0; Democrats = 1; Republicans = 3</td>
</tr>
</tbody>
</table>
| Political Interest| **Chapter 3:** Would you say you follow what’s going on in government and public affairs most of the time, some of the time, only now and then, or hardly at all? Most of the time = 3; Some of the time = 2; Only now and then = 1; Hardly at all = 0  
**Chapter 4:** Some people don’t pay much attention to political campaigns. How about you? Very much interested = 4; Somewhat interested = 2; Not much interested = 0; How interested are you in information about what’s going on in government and politics? Extremely interested = 4; Very interested = 3; Moderately interested = 2; Slightly interested = 1; Not interested at all = 0.  
**Chapter 5:** How often do you pay attention to what’s going on in government and politics? Never = 1; Some of the time = 2; About half of the time = 3; Most of the time = 4; Always = 5. |
| Newspaper         | **Chapter 3:** Used VCF9033: How many days in the past week did you read a daily newspaper? Coded 0-7.  
**Chapter 4:** “Would you say you read information in the Newspaper about the campaign for President A GOOD MANY times, SEVERAL, or JUST ONE OR TWO?” None = 0; Just one or two = 1; Several = 2; A good many = 3.  
**Chapter 5:** How many days in the past week did you read the news in the newspaper? Coded 0-7 |
**Chapter 4:** “Would you say you watched or listened to information on the Television about the campaign for President A GOOD MANY times, SEVERAL, or JUST ONE OR TWO?” None = 0; Just one or two = 1; Several = 2; A good many = 3.  
**Chapter 5:** How many days in the past week did you watch the news on TV? Coded 0-7 |
| Radio             | **Chapter 5:** How many days in the past week did you listen to the news on the radio? Coded 0-7 |
| Internet Access   | **Chapter 3:** Yes = 1, No = 0. |
| Internet Use | **Chapter 4:** “Would you say you read, watched, or listened to information on the Internet about the campaign for President A GOOD MANY times, SEVERAL, or JUST ONE OR TWO?” None = 0; Just one or two = 1; Several = 2; A good many = 3.  
**Chapter 5:** How many days in the past week did you watch, view, or listen to the news on the Internet? Coded 0-7 |
| --- | --- |
| Political Knowledge | **Chapter 3:** 6-point scale based on correct responses to: (1988) position held by Jim Wright, Margaret Thatcher, William Rehnquist; (1992) Tom Foley, Margaret Thatcher, William Rehnquist; (1996) Newt Gingrich, Boris Yeltsin, William Rehnquist; (2000) Trent Lott, Tony Blair, William Rehnquist; (2004) Dennis Hastert, Tony Blair, William Rehnquist; which party controlled the House of Representatives before the election; and correctly placing Democrats to the left of Republicans on a seven-point ideological scale.  
**Chapter 4:** See Appendix B.  
**Chapter 5:** 9-point scale based on correct responses to: Obama’s religion; Romney’s religion; which party controlled the House of Representatives before the election; which party controlled the Senate before the election; number of times a candidate can be elected president; if the federal deficit is bigger, the same, or smaller than in the 1990s; the length of a Senator’s term; choosing the correct definition of Medicare; and which does the federal government spend the least on: foreign aid, medicare, national defense, or social security. |
Appendix B
2008 ANES OFFICE RECOGNITION CODES

<table>
<thead>
<tr>
<th>Chapter 4 Coding</th>
<th>2008 ANES MASTER CODES</th>
</tr>
</thead>
</table>
| Gordon Brown = 2 | 01: Prime Minister of the United Kingdom; Prime Minister of the UK; Prime Minister of England; Prime Minister of Great Britain; British Prime Minister  
02: Prime Minister of Parliament  
03: Prime Minister of something other than the United Kingdom, UK, England, Great Britain, and Parliament  
04: Prime Minister |
| Gordon Brown = 1 | 11: Head, Leader, Chief, Chair, Chancellor, or President of the United Kingdom; Head, Leader, Chief, Chair, Chancellor, or President of the UK; Head, Leader, Chief, Chair, Chancellor, or President of England; Head, Leader, Chief, Chair, Chancellor, or President Great Britain  
12: Head, Leader, Chief, Chair, Chancellor, or President of Parliament  
13: Head, Leader, Chief, Chair, Chancellor, or President of the majority party  
14: In Parliament; Member of Parliament  
21: Leadership activity – Runs the government of the United Kingdom; Runs the government of the UK; Runs the government of England; Runs the government of Great Britain; etc.  
22: Any activity that does not match a Leadership Activity listed above  
24: Any statement about Gordon Brown that does not match a code listed above |
| Gordon Brown = 0 | 95: Don’t Know  
96: Refuse to answer  
97: Other statement, incorrect |
| Dick Cheney = 2  | 01: Vice President of the United States; Vice President of the US  
03: Vice President of something other than the United States (America, USA) |
<table>
<thead>
<tr>
<th>Dick Cheney = 1</th>
<th>04: Vice President</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11: President of the Senate</td>
</tr>
<tr>
<td></td>
<td>12: President of Congress; President of the Legislature; President of the Legislative branch; Head, Leader, Chief, Chair, Chancellor, or President of Legislators</td>
</tr>
<tr>
<td></td>
<td>21: Leadership activity: Advises the President; Presides over the Senate; Breaks ties in the Senate; Balances the Presidential ticket; Tries to get the President elected</td>
</tr>
<tr>
<td></td>
<td>22: First in line to be President; Next in line to be President; In line to be President</td>
</tr>
<tr>
<td></td>
<td>23: Any activity that does not match a Leadership Activity listed above</td>
</tr>
<tr>
<td></td>
<td>24: Any statement about Dick Cheney that does not match a code listed above</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dick Cheney = 0</th>
<th>95: Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>96: Refuse to answer</td>
</tr>
<tr>
<td></td>
<td>97: Other statement, incorrect</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nancy Pelosi = 2</th>
<th>01: Speaker of the House of Representatives; Speaker of the House; Speaker of the Representatives; Presiding Officer of the House of Representatives; Presiding Officer of the House; Presiding Officer of the Representatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>02: Speaker of the Congress; Speaker of the Legislature; Speaker of the Legislative branch; Speaker of Legislators</td>
</tr>
<tr>
<td></td>
<td>03: Speaker of something other than the House of Representatives, House, Representatives, Congress, Legislature, Legislative branch, and Legislators</td>
</tr>
<tr>
<td></td>
<td>04: Speaker</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nancy Pelosi = 1</th>
<th>11: Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the House of Representatives; Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the House; Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the Representatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12: Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the Congress; Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the Legislature; etc.</td>
</tr>
<tr>
<td></td>
<td>15: Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the Democrats; Head, Leader, Majority leader, Chief, Chair, Chancellor, or President of the Democratic Party</td>
</tr>
<tr>
<td></td>
<td>16: In Congress; Member of Congress; Congressman; Congresswoman; Congress person; Representative; Member of the House of Representatives; Member of the House; Legislator; Member of the legislature</td>
</tr>
</tbody>
</table>
| Nancy Pelosi = 0 | 95: Don’t Know  
|                 | 96: Refuse to answer  
|                 | 97: Other statement, incorrect  
| John Roberts = 2 | 01: Chief Justice of the Supreme Court; Chief Justice of the High Court; Chief Justice of the United States  
|                 | 02: Chief Justice of the Courts  
|                 | 03: Chief Justice of something other than the Supreme Court, High Court, United States, or Courts  
|                 | 04: Chief Justice  
| John Roberts = 1 | 11: Head, Leader, Chief, Chair, Chancellor, or President of the Supreme Court; Head, Leader, Chief, Chair, Chancellor, or President of the High Court  
|                 | 12: Head, Leader, Chief, Chair, Chancellor, or President of the Courts  
|                 | 13: Head, Leader, Chief, Chair, Chancellor, or President of a court other than the Supreme Court, High Court, or Courts  
|                 | 14: On the Supreme Court; On the High Court; Member of the Supreme Court; Member of the High Court; Supreme Court Justice; Supreme Court Judge; High Court Justice; High Court Judge  
|                 | 21: Leadership activity: Runs, chairs, or leads the Supreme Court; Runs, chairs, or leads the High Court; Runs, chairs, or leads impeachment trials; Runs, chairs, or leads judicial conferences; Decides who writes opinions for the Supreme Court; etc.  
|                 | 23: Any activity that does not match a Leadership Activity listed above  
|                 | 24: Any statement about Nancy Pelosi that does not match a code listed above  
| John Roberts = 0 | 95: Don’t Know  
|                 | 96: Refuse to answer  
|                 | 97: Other statement, incorrect  