

Exposure to Controversy in an Information Society

by

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For Tasi and Zain

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CHAPTER 1

INTRODUCTION

How will people use the Internet and other emerging information and communication technologies (ICTs) to shape their exposure to political information? The Internet has established itself as a significant source of news, and its users have an unprecedented ability to be selective about their political information exposure. Will Internet users be inclined to fashion an information environment that reflects their own political predispositions, or will they continue to encounter a range of perspectives online?

It has been nearly a decade since Neuman (1996: 15) first remarked on the concern that wide-scale adoption of special-interest online media—media tailored to the ideologies of small groups of citizens—could lead to dangerous social and ideological divisions. Sunstein's *Republic.com* (2001) is among the most prominent articulations of this skepticism to date. Sunstein offers a compelling narrative of how control over information exposure can translate into social fragmentation and political polarization, and asserts that these could lead to the breakdown of productive political discourse and the demise of democracy, ultimately culminating in violence.

Many scholars question, however, whether citizens will actually use technology as Sunstein predicts. The consequences of individual control over one's information environment are thus an important subject of contemporary debate (Iyengar *et al.* 2003; DiMaggio and Sato 2003; Neuman 2000; DiMaggio and Sato 2003: 321). Although this

round of controversy has been prompted by the new phenomenon of online news use, it in fact re-ignites a longstanding debate over individual preferences in political exposure.ⁱ

Ideologically-motivated selective exposure, the tendency to craft an information environment that reflects one's political beliefs, has been a topic of debate for several decades (Sears and Freedman 1967; Frey 1986). According to selective exposure theory, individuals' prefer exposure to arguments supporting their position over those supporting other positions (e.g., Lazarsfeld, Berelson, and Gaudet 1944; Sweeney and Gruber 1984). Scholars argue that this preference also leads individuals to prefer information *sources* that are more supportive of their opinions over less supportive alternatives (Mutz and Martin 2001; Lowin 1967). For example, recent empirical investigations indicate that

ⁱ This debate occurs within the context of a much larger controversy regarding political polarization within the United States, the “culture war” first articulated by James Davison Hunter (1991). On one side of the culture war debate, scholars decry the increasing polarization which they say has characterized the political landscape of the U.S. over the last few decades. They claim that Democrats/liberals and Republicans/conservatives, are diverging in terms of their social and political attitudes. The Pew Research Center for the People and the Press has been a prominent advocate of these ideas, offering a substantial body of survey data in support of these claims (Kohut et al. 2005b; Kohut et al. 2005a; Kohut et al. 2003). The polarization claim has been amplified by the mainstream news media, becoming one of the defining narratives for describing the 2000 and 2004 presidential elections (e.g., see Anonymous 2002b; Anonymous 2002a; Dionne Jr. 2003; Fineman 2003).

On the other side of the culture war debate, scholars such as Fiorina (2005) and Baker (2005) argue that the evidence for polarization among U.S. citizens is weak. To the contrary, Baker argues that Americans' views are converging (108). Fiorina claims that to the extent that polarization is occurring, it is among political elites. If citizens are supporting more polarized candidates, Fiorina argues that this is only because less-partisan alternatives are unavailable.

The claims I make in this dissertation are relevant to the culture war debate: how people shape their exposure to political information has the potential to influence their political attitudes, either exacerbating or defusing political polarization. High levels of exposure to others' views, however, could coexist with strong political positions. My concern is primarily with people's exposure to viewpoints, especially those with which they disagree, and not with the extent of political polarization in society.

readers of conservative political books rarely read liberal books (Krebs 2004b; Krebs 2004a; Krebs 2003), and that popular political blogs tend to interlink with other blogs expressing similar viewpoints (Adamic and Glance 2005).

Critics of the theory of ideological selective exposure question the existence of an underlying psychological tendency to seek support and avoid challenge. According to these scholars, the data do not support the claim that citizens are disproportionately aware of viewpoint-supporting information (Sears and Freedman 1967; Chaffee *et al.* 2001). Furthermore, they offer evidence that individual exposure choices are largely uninfluenced by ideology: when asked to choose among political information options, citizens do not systematically avoid challenge (DiMaggio and Sato 2003; Iyengar *et al.* 2003). The theory's detractors also argue that choices that do yield exposure to mostly viewpoint-reinforcing information are not necessarily motivated by viewpoint selectivity *per se*, but may instead be secondary consequences of decisions unrelated to ideology (Sears and Freedman 1967).

Scholars on both sides of the debate have tended to treat a preference for support and an aversion to challenge as linked aspects of a single psychological preference. I argue that by conceiving of these preferences as *separate* phenomena we can reconcile seemingly contradictory evidence regarding citizens' political information acquisition practices. Most prior research results can be explained in terms of a systematic preference for viewpoint reinforcement paired with a weaker and less consistent attitude toward viewpoint challenge. I therefore suggest that most individuals will be drawn to viewpoint-reinforcing information, while their use of viewpoint-challenging information will fluctuate. Depending on the context of the information search and the ideological characteristics of the individual, some will exhibit a slight aversion to challenge, while others will remain largely indifferent toward it. In a few circumstances, individuals may even seek out novel arguments with which they disagree.

These hypothesized preferences have important implications for citizens' use of new ICTs for political information acquisition. Technologies such as the Internet play a potentially important role because they augment people's ability to selectively acquire political information, allowing them to more effectively find information on either side of a controversy (DiMaggio *et al.* 2001; Bimber and Davis 2003: 152). Two characteristics of the technology are particularly important. First, the range of viewpoints accessible online is wider than with traditional news media, such as television or newspapers. Groups representing the full range of the political spectrum have a significant online presence (e.g., Zook 1996; Cleaver 1999), whereas mainstream sources tend to represent a narrower band of interests toward the middle of the spectrum. Second, the mechanisms for controlling which viewpoints one encounters, though imperfect, are increasingly effective. Search engines, news aggregations services (such as Google News), and partisan news sites each afford opportunities for searching and filtering information that are unparalleled in traditional news media.

New technologies afford users unprecedented control over their information exposure, but even if people do adopt these capabilities the political information preferences suggested here cast doubt on the claim that citizens will consistently filter out all other viewpoints. I argue that individuals who rely on the Internet for political information will be better informed about their own opinions, but they will also continue to encounter arguments justifying other positions. This is an important distinction, because continued exposure to other viewpoints makes a crucial difference in whether or not we realize the future suggested by Sunstein and others (e.g., Sunstein 2001; Mutz and Martin 2001).

Exposure to political difference is a defining element of effective deliberation and it has important consequences for society at large. The presence of other political viewpoints can stimulate groups to engage in more thorough information searches and more careful scrutiny of alternatives (Mendelberg 2002; Nemeth 1986; Nemeth and

Rogers 1996; Delli Carpini *et al.* 2004). Exposure to other perspectives also increases people's familiarity with the rationales that motivate opposing views, which can in turn foster political tolerance (Mutz 2002; Price *et al.* 2002). Conversely, if individuals effectively avoid opinion-challenging information, the society to which they belong is likely to become more politically fragmented (Sunstein 2002). Absent contact with other viewpoints, groups of citizens will become more polarized, and their ability to find common ground and to reach political agreement will dwindle. In light of the important stakes for political deliberation and democratic society, it is critical that we understand what choices people will make in the changing landscape of political news.

This dissertation is composed of two interconnected research projects. Taken together, these projects clarify the contemporary dynamic of selective political exposure, providing evidence about individuals' underlying preferences regarding political information.

The first project uses nationally representative survey data to examine how contemporary use of the Internet is influencing citizens' overall exposure to political information. Although information services do not allow automatic filtering based on ideology, users of these services do have more control than those who rely on the more traditional media for their news and information. Changes in overall exposure that correlate to the use of these technologies are suggestive of what citizens' ideal news diet might look like.

The second project focuses on individual choices regarding exposure to news items. I examined factors that influence the decision to look at, and the time spent reading, news items in an online environment that affords enhanced, albeit imperfect, control over viewpoint exposure. This environment makes it easier for subjects to review a politically diverse set of news items, and provides cues about the items' political biases, but subjects are responsible for assessing them and deciding which items to examine.

The relationship between readers' perceptions and use of news items in such an environment is indicative of the preferences shaping individual exposure decisions.

Background

Both projects of this dissertation regard the significance of online news; hence, this section provides important background about individuals whose political information universe includes online sources. Internet users, though increasingly representative of the American population, still differ in a number of ways from those who have not embraced the technology. Online news users, especially those who consider the medium a prominent source of political information, are an even more distinct subpopulation.

Americans Online

The number of Americans who use the Internet crossed the 50% mark around the year 2000, and the number continues to grow steadily (Table 1). Research has also shown that Internet users with high-speed access are a particularly active segment of the online population. These individuals are more likely to have integrated their use of the communication network into their daily lives, and are more likely to rely on it for a wide range of informational needs (Horrigan and Rainie 2002). (The relationship between high-speed access and online news use is discussed in more detail in the next section.) Though high-speed Internet users are still in the minority, their numbers are growing as well: broadband access at home has increased several-fold in the past four years, more than doubling in the last year alone. The numbers are even larger when you include those who have high-speed Internet access from work. By 2004, more than half of all Internet users went online using high-speed connections either at home or at work.

Table 1. Percentage of adult Americans who use the Internet, have broadband

	2000	2001	2002	2003	2004
Internet user	49%	59%	59%	63%	67%
Broadband at home	3	6	12	16	25

Source: Pew Internet & American Life survey data 2000-2004

These percentages represent many millions of users in the continental U.S., but Internet users are a distinct subpopulation in terms of several key demographics (see Table 2). Compared to non-users, they are disproportionately male, and they tend to be younger, wealthier, and more educated. They are also less likely to live in a rural area. Groups of Internet users with different levels of access also differ from one another significantly. The patterns described above are even more pronounced when we differentiate between broadband users and those with slower access. More than half of all broadband users are male; fully a third report an income of over \$75,000; slightly less than half hold a college degree; and only about one in six live in rural America.

Table 2. Internet user demographics

	All Respondents	Broadband users	Dial-up users	Non-Internet users
Unweighted base (n)	1510 1510	581 552	382 385	474 493
Sex				
Male	47%	52%	50	42
Female	53	48	50	58
Community type				
Urban	29	34	27	25
Suburban	48	53	46	43
Rural	24	13	28	33
Age				
18-27	18	21	21	10
28-39	22	26	23	16
40-49	22	26	23	15
50-58	14	17	13	11
59-68	11	7	10	16
69+	13	2	7	31
Education				
High school or less	46	25	48	68
Some college	27	31	26	23
College grad or more	27	44	25	9
Race/ethnicity				
White	72	73	75	72
Black	10	7	10	13
Hispanic	11	11	10	10
Other	6	8	4	5
Income				
Less than \$30K	28	13	23	49
Between \$30-\$50K	22	19	26	22
Between \$50-\$75K	14	20	18	6
More than \$75K	18	33	16	5
Internet experience				
Online in last 6 months	1	1	2	*
Online for about 1 year	3	1	7	*
Online for 2-3 years	9	8	19	*
Online for 4-5 years	17	20	32	*
Online for 6+ years	37	69	39	*
Openness mindedness				
High	26	34	27	16
Medium	53	54	54	49
Low	21	12	18	35

Source: Pew Internet & American Life Project survey 2004

Note: Sum of (n) for different access types is not equal to total because some respondents did not answer the access type questions. Non-responses account for response categories not summing to 100%

News media usage

Internet users have access to a unique new medium for acquiring news, and many are using it. In 2000 Pew estimated that about 30 million Americans were getting news online on a typical day. By the year 2004 that number had more than doubled to 64 million, or about 34% of adult Americans. Use of traditional media does not differ much between Internet users and the population at large: in all groups similarly high percentages of individuals use television, newspapers, radio, and magazines as news sources. Among those who do use the Internet, however, broadband users are more likely to get news online than those with slower Internet access (Table 3). Use of online news by these individuals is quite high—nearly 90%—surpassing every other news medium except television news.

Table 3. Percentage who ever use news media online and off

	All Respondents	Broadband users	Dial-up users	Non-Internet users
Unweighted base (n)	1510 1510	581 552	382 385	474 493
Television	92%	92%	92%	91%
Newspaper	85	84	89	84
Radio	73	79	78	61
Magazines	56	65	62	42
Email or the Web	54	89	71	*

Source: Pew Internet & American Life Project survey 2004

There are some early indications that users may be substituting online news for more traditional news media. Though television is one of the most popular sources of campaign information for Internet users and non-users alike, the number of individuals who rank it among the most important sources of information drops as Internet access speeds increase (Table 4). Broadband users, the group most likely to get their news online, are also least likely to use older media.

Table 4. Percentage for whom specified medium is one of top two sources of campaign information

	All Respondents	Broadband users	Dial-up users	Non-Internet users
Unweighted base (n)	1510 1510	581 552	382 385	474 493
Television	78%	71%	74%	88
Newspaper	38	35	40	40
Radio	16	15	18	12
Email or the Web	15	29	13	1**
Magazines	4	5	6	2

Source: Pew Internet & American Life Project survey 2004

In terms of demographics, those who use online news as a supplemental source of campaign information are almost indistinguishable from Internet users as a whole. Those for whom the Internet is a primary source of campaign information, however, have a few unique characteristics (Table 5 and Table 6). Compared to Internet users in general, this group is disproportionately male, Republican, and college educated. These individuals also tend to be younger, and to have the most Internet experience.

Table 5. Demographics of online news users – Non-political

	Internet users	Online news a primary source	Online news a supplement
Unweighted base (n)	1036 1036	223 214	619 603
Sex			
Male	50%	61%	46%
Female	50	39	54
Community type			
Urban	31	33	32
Suburban	50	51	49
Rural	19	16	19
Age			
18-27	21	24	20
28-39	25	29	24
40-49	25	20	26
50-58	15	13	16
59-68	8	10	8
69+	4	2	4
Education			
High school or less	35	31	32
Some college	29	24	32
College grad or more	35	44	36
Race/ethnicity			
White	73	70	74
Black	9	10	7
Hispanic	11	10	12
Other	6	7	6
Income			
Less than \$30K	18	17	20
Between \$30-\$50K	22	22	22
Between \$50-\$75K	18	20	19
More than \$75K	25	25	38
Internet experience			
Online in last 6 months	2	*	1
Online for about 1 year	4	1	4
Online for 2-3 years	13	7	13
Online for 4-5 years	25	22	26
Online for 6+ years	55	69	55

Source: Pew Internet & American Life Project survey 2004

Note: Response categories do not sum to 100% because of non-responses.

* denotes less than 1%.

Table 6. Demographics of online news users – Political

	Internet users	Online news a primary source	Online news a supplement
Unweighted base (n)	1036	223	619
	1036	214	603
Party Affiliation			
Democrat	29	26	31
Independent	32	30	32
Republican	32	38	31
Other/no party	4	1	*
Political Ideology			
Very liberal	7	9	7
Somewhat liberal	21	23	21
Moderate	31	27	33
Somewhat conservative	26	24	25
Very conservative	12	13	11

Source: Pew Internet & American Life Project survey 2004
Note: Response categories do not sum to 100% because of non-responses.
* denotes less than 1%.

Outline

In the context of the large and growing number of Americans getting their news through the Internet and the resulting potential for more purposeful choices about the news they read, this dissertation encompasses two studies that contribute to our understanding of people's propensity to engage in selective exposure. Chapter 2 reviews the relevant research on ideologically-motivated selective exposure and the online political information environment, and outlines a series of related hypotheses. Broadly speaking, I claim that individuals are drawn to viewpoint-reinforcing information, but that they do not seek to exclude all exposure to viewpoint-challenging information. There are, however, certain ideological and social attributes that make avoiding other perspectives more likely. Chapter 3 describes the two methodologies I use to test these claims. First, I employ a national telephone survey of 1,510 adult Americans designed to assess the significance of the Internet for both the types of information sources individuals report using and their familiarity with arguments that either reinforce or

challenge their views. Second, I describe the experimental design employed to study individuals' preferences regarding political information, as well as the recruitment strategy and data analyses techniques for this experiment.

Chapters 4 and 5 describe the analyses and findings of these studies. I find that Web sites featuring partisan political information are an important complement to the news products of major news organizations, not a substitute. I also show that as a source of political information, the Internet is enhancing individuals' familiarity with consonant *and* dissonant information. In other words, people who use online sources of political news are exposed to both more information that supports their views and more information that challenges these pre-existing opinions. When operating in an online environment that facilitates ideological selectivity, however, people demonstrate a tendency to seek viewpoint-reinforcing information and to avoid viewpoint-challenging information, though the effect of the latter is substantially smaller. Finally, Chapter 6 makes sense of the findings in the two related projects and ties this research back to the core theoretical debate about political communication. The key to this resolution lies in distinguishing between a desire to exclude *all contact* with other viewpoints, and a tendency to avoid *repeated contact*. This understanding sets the stage for a discussion of the design and implications of future news acquisition systems. I end by examining the limitations of the study and suggesting a number of future research opportunities.

Over the course of this dissertation, I make four major contributions to the academic theorizing and empirical study of selective exposure. I make two related arguments about ideologically-motivated selectivity. First, I assert that it is necessary to distinguish between seeking out viewpoint-reinforcing information and avoiding viewpoint-challenging information. This distinction allows us to reconcile several contradictory conclusions evident in prior research. Second, based on the results of these studies, I argue that it is useful to distinguish between avoiding *all contact* with

viewpoint-challenging information, and avoiding *repeated* exposure with such information. This research suggests that individuals value awareness of other perspectives, while simultaneously wanting to limit their contact with them. Our understanding of these preferences has profound implications for the choices individuals are likely to make about their use of political news in the future. As technology evolves, further augmenting the ability to be selective, citizens' preferences will have an increasingly important influence on their political information environment.

The dissertation makes two additional methodological contributions. First, it offers a unique approach to studying individuals' selective exposure preferences. The survey measures exposure to viewpoint-reinforcement and viewpoint-challenge separately by focusing on concrete questions about readily recalled argument exposure and information source use. Answers to these questions are easy for respondents to generate, and can be unambiguously interpreted. This provides a technique for assessing individuals' overall political exposure that is practical and reliable. Second, the experiment takes data collection out of the lab and into the field. By conducting an online experiment, I am able to observe the behavior of individuals who regularly use online news in the process of engaging with real, current news stories. Data collected in this way is more likely to reflect individuals' typical news consumption behavior than data collected in a traditional lab setting.

CHAPTER 2

THEORETICAL MOTIVATIONS AND BACKGROUND

The subject of this research project is the relationship between new information and communication technologies (ICTs) and citizens' exposure to political information. The concern motivating the work is that users of these technologies will engage in ideologically-motivated selective exposure, creating a personalized information environment that reinforces their political attitudes. Such behavior, it has been argued, would undermine the democratic process, fostering political polarization, radicalization, and intolerance (Sunstein 2001).

This chapter sets the stage for the research that follows, describing prior work on the subject and highlighting important unanswered questions. The review of literature is divided into four parts. First, I consider the consequences of selective exposure. I begin this section by reviewing the significant evidence that citizens' attitudes are informed by the information they encounter. Next I turn to the literature on political tolerance and minority influence in order to demonstrate that different types of selectivity—namely, seeking viewpoint reinforcement and avoiding viewpoint challenge—carry different implications for mass opinion and political discourse.

Second, I examine available empirical evidence on the selective exposure phenomenon. Though this topic has been extensively researched, the empirical results are inconclusive. Some contemporary scholars are convinced that ideological selectivity is a powerful factor shaping citizens' experience of the political world (e.g., Mutz and Martin 2001; Sunstein 2001), while others are equally certain that selective exposure does not occur (e.g., Iyengar *et al.* 2003; Knobloch *et al.* 2003). I propose to reconcile

these findings by treating separately the preference for consonant information, information that supports one's viewpoint, and the aversion to dissonant information, information that challenges one's viewpoint. Available data are consistent with the hypothesis that citizens engage in behaviors to realize the former, but not the latter.

Third, I consider the relationship between new ICTs and citizens' ability to engage in ideological selectivity. Though online news tools have augmented citizens' control of their political information exposure, this capacity for control is limited both technically and socially. Technologies for automatically filtering information based on political viewpoints do not yet exist, and, furthermore, online information seekers are not consistently effective users of available capabilities. Thus, citizens' use of the Internet today is an imperfect predictor of their behavior in the future. As new technologies that make ideological selectivity more feasible continue to emerge, users will have new opportunities to realize their political exposure preferences.

I conclude the chapter by summarizing my hypotheses regarding selective exposure and new ICTs. These hypotheses are divided into two groups. One regards the influence of online news today on political information exposure. The other set concerns individual behavior in an environment suggestive of the kinds of control that might be taken for granted in the future.

Consequences of selective exposure

Concern about the consequences of new ICTs for the body politic stems from the belief that citizens will, if given the opportunity, create an information environment mirroring their own beliefs, and that this will have harmful political ramifications. Individuals whose viewpoints are reinforced in the absence of challenging ideas will hold more extreme views and be less capable of understanding the views of others, while

groups of like-minded people are more likely to become socially fragmented and politically polarized (Sunstein 2001; Sunstein 2002: 186).

This section begins with an overview of two important theoretical models of opinion formation, RAS and the on-line information-processing model. Both models demonstrate that altering the flow of political information such that it reflects a particular viewpoint will have a polarizing effect. Neither model, however, distinguishes between the potentially different consequences of support seeking and challenge avoidance. To demonstrate the significance of this distinction, I turn to the literatures on political tolerance and minority influences. According to research in these areas, the benefits of exposure to other viewpoints include increased political tolerance and more thorough consideration of political alternatives, which ultimately lead to better deliberative decision-making. Thus, maintaining some exposure to challenging viewpoints while seeking out viewpoint-reinforcing information significantly undermines the polarizing influence of ideological selective exposure.

Opinion formation

Individuals do not have well-established, clearly-defined opinions about every political issue. Such a mental state would require immense time and effort, as well as mastery of a volume of information beyond the grasp of an individual human being. This is the premise of Zaller's (1992) work on mass opinion. Instead, he posits that individuals dynamically construct opinions based on the information at hand.

Zaller describes a model that explains how various competing considerations come to inform the decision-making process. Named for its three stages, Zaller's RAS model predicts that statements of opinion are the product of a process in which individuals *receive* new information, evaluate it in order to decide whether to *accept* it as a valid consideration in future decision-making, and *sample* from the universe of

legitimate considerations when asked to make a decision. This process is guided by the model's four axioms regarding how people respond when exposed to new political information.

The first axiom is that the greater an individual's interest in a topic, the more information on the topic that individual will seek out and comprehend. Thus, an individual who cares deeply about gay marriage, whether in support or opposition, will tend to encounter more information about this issue than someone who does not. Second, Zaller asserts that individuals resist arguments that run contrary to their political predilections to the extent that they are able to recognize the discrepancy. For example, someone who generally believes that the state already exerts too much influence over individual rights would resist the argument that gay marriage is a social ill that should be prohibited by law. On the other hand, a person who firmly believes that citizens deserve equal treatment under the law might be inclined to accept the argument that banning gay marriage would unfairly discriminate against people who are gay. Third, the more recently an individual's experiences have evoked a consideration, the more quickly that information will come to mind. Thus, having just read the aforementioned arguments regarding gay marriage, the reader will be more likely to think of them if asked about this issue in the near future. Fourth, and finally, faced with a question of attitude, an individual forms an opinion statement by weighing the considerations that come to mind readily against one another.ⁱⁱ In the example used here, an individual would decide

ⁱⁱ The fourth axiom of RAS, that individuals form attitudes by weighing argument readily at hand, closely resembles an informational-process-based explanation of group polarization. Group polarization occurs when an individual's initial tendencies are reinforced through group discussion. According to persuasive argument theory (PAT), this shift occurs because individuals encounter novel arguments supporting their viewpoint during group deliberation (Burnstein and Vinokur 1977). The other mechanism that contributes to group polarization is based on social comparison processes, and is unrelated to argument exposure (Isenberg 1986).

whether to support or oppose gay marriage by weighing arguments they have already accepted in favor of gay marriage against those they have accepted which oppose it.

Though Zaller readily accepts that individuals are resistant to ideas that run counter to their political predispositions, he explicitly discounts the role of selectivity in the reception stage based on the evidence available in 1992 (139). He argues that news practices have historically made selective exposure, the act of intentionally constraining exposure to political information based on one's political viewpoint, unlikely for two reasons. First, most people have tended to use a variety of news outlets, especially mainstream news media. Second, being selective about news content has required more vigilance than most people are willing to exert. New information and communication technologies, however, make selectivity based on political predispositions more feasible. Individuals who get news online today have more outlets to choose from, including many that have clear ideological orientations, and more control over what content they are exposed to from their chosen sources.

In the context of Zaller's model, different forms of selectivity carry similar implications for opinion formation. Consider, first, reinforcement seeking. Seeking out viewpoint-reinforcing information translates to increased exposure to position-supporting arguments and ways of framing these arguments that connect them to political predispositions. This combination leads to increasing acceptance and internalization of viewpoint-consistent arguments. Reinforcement seeking, compared to information seeking that ignores political predispositions, will also result in more frequent encounters with situations that evoke the accepted arguments, increasing their salience. Ultimately, individuals who enact this behavior will tend to develop more stable positions that are more consistent with their other opinions than those who do not. Their attitudes will be stable because overcoming accepted supportive considerations will be more difficult. For example, an individual who regularly seeks out information that supports his current views on gay marriage will know more arguments favoring this position, and these

arguments will come to mind more immediately. Consistency across attitudes will occur because individuals will have more contextual cues about how various opinions align with their political predispositions. For example, if an individual accepts the argument that gay marriage is a civil rights issue, his position on gay marriage is more likely to be ideologically consistent with his views on other issues related to civil rights.

The effects of viewpoint-challenge avoidance will be similar to those of seeking out viewpoint-reinforcing information, although the interim steps differ. Individuals engaging in this behavior will encounter fewer challenging arguments and will encounter them with lower frequency. The consequence will again be the emergence of more stable positions. The gay marriage advocate in this hypothetical example will hear fewer arguments opposing his position, and will hear them less often. When asked to give an opinion, the individual will simply have fewer opposing arguments to consider.

A second prominent model of opinion formation is the on-line information-processing model (Hastie and Park 1986; McGraw *et al.* 1990; Lodge *et al.* 1989). The fundamental difference between the on-line and RAS models regards the nature of opinion. Contrary to RAS, which asserts that citizens do not have “true” opinions, citizens in the on-line model hold well-formed opinions about political issues. When asked for an opinion, an individual simply recalls the judgment he has already made, rather than surveying all the relevant arguments to create a new opinion statement. As a consequence, the mechanisms of opinion change are necessarily different. According to the on-line model, a person faced with a new argument retrieves the previously held opinion from memory, adjusts it “on-line” to reflect the new information, and then stores the resulting opinion for future use. Individuals do not exert significant effort to remember individual arguments. On this view, attitudes are immediately available, but the underlying justifications are harder to produce. For example, when asked to recall a candidate’s issue positions, individuals will tend to indicate that favored candidates share their views, while that those they oppose do not. Finally, in the on-line model, initial

impressions carry extra weight. Individuals do revise their attitudes based on new information, but their opinions are relatively stable compared to the predictions of RAS.

Despite these differences between RAS and the on-line models, the consequences of selective exposure are similar. Whether seeking viewpoint reinforcement or filtering out viewpoint challenges, the information that individuals encounter is more likely to justify their prior judgment than to undercut it. In either case, selective-exposure induced changes to a citizen's information environment will reinforce his or her existing attitudes.

It is also possible for the two models to coexist. Though the on-line model is generally portrayed as a competing alternative to RAS, scholars on both sides acknowledge that the models can function in complementary ways (Zaller 1992: 279; Hastie and Park 1986: 262; Lodge *et al.* 1989: 415; McGraw *et al.* 1990: 42). RAS is generally a more effective predictor of opinions when citizens are unconcerned about an issue and have not anticipated needing a well-formed opinion. For example, respondents' are unlikely to be interested in all political topics covered in an opinion survey, and in these cases attitude statements are likely to be generated in the moment based on the readily available considerations. On-line processing, on the other hand, is probably a more accurate model when citizens are actively interested in an issue, and want to be able to articulate a stable opinion. For example, an individual with a keen interest in the debate over gay marriage will be more likely to behave in a manner consistent with the on-line model, forming an initial opinion and updating it as new information comes to light.

In some situations, both models may interact to shape opinion. For example, when current events raise a previously obscure issue to national prominence, citizens may wish to develop an opinion about it. They would likely form this impression by surveying relevant considerations, as predicted by RAS; however, since the issue is highly salient they might then remember this assessment so that they can re-access it without needing to review the relevant evidence every time the issue resurfaces.

Whichever view of opinion formation we take, whether based on RAS, on-line, or a combination of the two, the consequences of selective exposure are the same. If individuals use new technologies to shape their political information exposure so that it is more consistent with their political predispositions, their attitudes will become more stable and ideologically consistent.

Political tolerance and minority influences

Both RAS and on-line information processing models lead to the conclusion that selective exposure makes a difference in how opinions are formed at the level of individual psychology. Although neither distinguishes between the effects of different types of selectivity for any one person, other research suggests that seeking support and avoiding challenge may lead to distinct results at the group or societal level. In particular, two areas of scholarship point to exposure to viewpoint-challenging information as particularly important for facilitating political tolerance and improving group deliberation processes.

The first of these bodies of work finds that individuals who engage in selective avoidance have lower levels of political tolerance. The mechanism underlying this relationship is that avoiding viewpoint-challenging information makes individuals (a) less aware of the rationales behind other opinions and therefore (b) less likely to recognize those opinions as legitimate. Price, Cappella, and Nir's (2002) research demonstrates that the more people encounter disagreement in political conversation, the better they are able to identify justifications for their own opinions, and for the opinions of others. Using survey data collected in the lead up to the 2000 U.S. presidential election, Price and his colleagues examined the relationship between the frequency and intensity of political disagreement in respondents' political conversations and respondents' ability to describe rationales favoring the two major parties. They found that citizens who more

frequently encountered other viewpoints in their political conversations were better able to explain why others might prefer the Democratic or Republican Party.

Mutz's (2002) work offers additional evidence that exposure to dissonant viewpoints enhances people's familiarity with arguments that support those views. Furthermore, her analysis shows that such familiarity is positively correlated with political tolerance. Using survey data collected before the 1996 presidential election, Mutz shows that the frequency and intensity of exposure to dissonant views is positively related to awareness of rationales for other opinions. She goes on to show that individuals who are more aware of these arguments are more willing to extend civil liberties to groups with which they disagree. Employing a three-step experimental design to confirm these tolerance effects, Mutz found that subjects exposed to dissonant political views exhibited statistically higher levels of political tolerance than those exposed to consonant information or to no information.

The second body of research identifies a positive relationship between exposure to viewpoint-challenging information and group deliberation through the mechanism of minority influence. In a group setting, the presence of minority views stimulates attention to more diverse set of considerations, leading group members to more carefully consider a wider range of options. As a consequence, participants in groups in which minority views are expressed tend to identify a larger number of legitimate alternative solutions to problems.

A study by Nemeth (1986) demonstrates this effect. In the experiment, subjects were asked to assess whether a simple figure composed of straight lines was embedded within any of several more complex figures. Subjects were allowed to deliberate in groups in order to reach a conclusion, but several members of each group were paid confederates. In the experimental condition where researchers used confederates to create a *minority* subgroup arguing for a solution not identified by the majority, subjects identified significantly more correct responses. Research has also shown that when

members of a group encounter a minority viewpoint that differs from their own, they tend to engage in a more thorough information search (Nemeth 1986; Nemeth and Rogers 1996). These studies demonstrate that opinion-challenging information, especially when it represents a minority view within the context of a group, has significant benefits for the deliberative process.

A parallel, independent stream of research on group problem solving reaches a similar conclusion. Hong and Page (1998; 2001) describe a formal model of problem solvers' behavior, and implement a series of computational models based on it. In their mathematical representation, individuals are differentiated in terms of their perspective and the heuristics they use for finding a solution. In these models, heterogeneous groups of actors with limited capabilities consistently outperform homogeneous groups composed entirely of highly-effective actors. This reaffirms the conclusion that diversity is highly beneficial when searching for solutions to difficult problems.

In addition to their direct influence on current group decisions, minority influences can also be indirect, leading group members to think more divergently about a topic in the future. In another experimental study (Nemeth 1986), subjects were shown a series of blue slides and then asked to complete a word association exercise. Prior to viewing the slides, subjects were told that either 80% or 20% of others who view the slides judge them to be green. Subjects who heard that a sizable *minority* of people tended to disagree with their own assessment of the color subsequently generated less common word associations than subjects in the other condition. For example, these subjects would be more likely to think of “jeans”, or “jazz”, which are both statistically less common responses in the context of this experiment than “sky” or “green”. Thus, the presence of a minority opinion during a period of deliberation influenced subjects’ subsequent thought processes. Indirect effects such as these appear to be even more common than direct effects (Wood *et al.* 1994).

Though the research on minority influence has not yet focused on political deliberation, they may indeed have important implications for democratic processes. The phenomenon suggests that exposure to opinions held by a minority may lead to the recognition of novel alternative perspectives and indirect attitude changes, ultimately enhancing the deliberative process (Mendelberg 2002: 164).

Seeking viewpoint-reinforcing information and filtering out viewpoint-contrary information have similar effects on individual opinion formation. When these individuals come together in groups, however, their selective exposure behaviors have profoundly different implications for the well-being of the political process. Individuals who use new ICTs to effectively reduce their familiarity with attitudes different from their own are likely to be more certain of their position and less tolerant of those with whom they disagree. Groups devoid of disagreement are less able to generate multiple or creative problem solutions. Given the broad importance of selective exposure to individual opinions and the specific impact of exposure to viewpoint-challenging information on the political process, it is crucial that we understand the choices individuals make about exposure to political information.

Selective exposure theory and research

The first theoretical predictions that selective exposure occurs were based on dissonance theory, which asserts that people who seek post-decision information prefer consonant information, which supports their viewpoint, over dissonant information, which challenges it (Festinger 1957). As suggested above, preferences may be manifest in the form of greater attention to consonant content, avoidance of dissonant content, or both. Selectivity occurs when people exercise a capacity to shape their information exposure to match these preferences.

Research on ideologically-motivated selectivity dates back to the 1940s. One of the most striking features of this literature is the inconsistency of the results. In the more than half century since the topic was first considered, support for selective exposure has shifted radically, swinging from near-universal acceptance to outright dismissal and finally settling in a still-contested middle ground. I review these contradictory findings in this section, and argue that they can be reconciled if we accept that political information seekers are drawn to viewpoint-reinforcing information but do not exhibit a corresponding aversion to political difference.

Conflicting claims regarding ideologically-motivated selective exposure

Among the most influential and well-known studies related to the topic is Lazarsfeld, Berelson and Gaudet's (1944) Erie County study. The study used survey panel data to capture changes in the attitudes and behavior of 600 voters in Erie county, Ohio during the seven months leading up to the 1940 presidential election. One of the most striking findings in terms of selective exposure was that about two-thirds of those who consistently expressed an intention to vote encountered more information that supported their viewpoint than challenged it.

Several experimental studies helped the theory of selective exposure gain acceptance over the next two decades. For example, Brock and Balloun (1967) asked subjects to listen to an audio recording containing arguments for and against their opinion. During playback the recording was mixed with noise. Subjects could indicate their desire for clarification, thereby removing the noise, by pressing a button. The study was conducted twice, once on the topic of religion, and the second on smoking. The results showed that subjects were more likely to clarify messages that supported their viewpoint. Returning to political information, Sears and Freedman (1963) found that given a choice, citizens opt to examine viewpoint supporting information prior to

viewpoint-challenging information. Subjects were presented with a collection of pamphlets about the candidates in the 1962 California gubernatorial race. Fifty-eight percent of the subjects choose a pamphlet supporting their favored candidate first.

In 1967, however, Sears and Freedman published a comprehensive review of the literature which suggests that empirical evidence for intentional ideological selectivity was weak. For example, they observe that the evidence presented by Lazarsfeld *et al.* could be reinterpreted in light of the availability of partisan information in Erie County. Given that nearly 70% of the available political material supported the Republican candidate, “[i]t is...hardly surprising that 69.7% of those with Republican predispositions were exposed primarily to pro-Republican information... The exposure of those with Republican predispositions almost exactly matched the partisan division of available information” (199). On this view, the disproportionate exposure to Republican information was not a product of selectivity, but a reflection of the political information environment.

In addition to this reinterpretation, Sears and Freedman identify several subsequent studies that further undermine claims regarding a general psychological preference for supportive information. Two of these studies compare smokers’ and non-smokers’ use of information on the relationship between smoking and lung cancer. In these studies, subjects were asked to rank thirteen articles, including one that either supported or denied this relationship, according to their interest in reading them. Feather (1962; 1963) found that smokers were generally more interested in reading about smoking and lung cancer, but they did not demonstrate a consistent preference for one type of information over the other. In another frequently used scenario for testing whether individuals tend to prefer viewpoint consonant information, subjects read transcript excerpts from a fictitious murder trial. Participants were asked to assess the evidence and reach a verdict. Once they had committed themselves to a position, subjects were presented with a collection of articles about the case, some favoring

acquittal and others, conviction. The results from three of these studies suggest that subjects had no preference with regard to the relationship between the position espoused by the article and their decision: they were equally likely to read viewpoint-supporting and viewpoint-challenging articles (Sears 1966; Freedman and Sears 1963; Sears and Freedman 1965). In a fourth study, about a third of the subjects exhibited a preference for articles supporting their verdict (Sears 1965). Taken as a whole, these experimental results, like the reinterpretation of the Erie County study data, lead Sears and Freedman to question the claim that individuals favor supportive information over challenging information.

Sears and Freedman conclude that there is little consistent support for a general psychological preference for supportive information. Of the 18 studies reviewed, five suggested a preference for supportive information, five a preference for nonsupportive information, and eight showed no evidence of preference. They argued that to the extent that people do encounter less viewpoint-challenging information than viewpoint-supporting information, the phenomenon is limited to *de facto* selectivity, whereby relatively greater exposure to consonant information is a byproduct of decisions unrelated to ideology. For example, financial analysts may prefer to read the *Wall Street Journal* because of its coverage of financial news. Their tendency to agree with the paper's political views is not motivated by an effort to find support or avoid challenge; instead, it is a reflection of their political similarity with those who write about financial news.

Though research dropped off significantly in the wake of Sears and Freedman's (1965; 1967) work, new research supporting the selective exposure phenomenon continued to emerge. In a variation of Feather's smoker studies (1962, 1963), Brock (1965) presented subjects with articles supportive, unsupportive, or unrelated to the smoking-lung-cancer link, but told subjects they would be required to read their top-ranked item. Under these conditions, smokers *were* more likely to read information denying the relationship, though they exhibited no aversion to information supporting it.

There were also a few results supporting the influence of partisan selectivity in the acquisition of political information. Lowin (1967) mailed letters to supporters of each of the two major candidates in the 1964 presidential election offering to send either of two brochures. Some subjects were asked to choose between a brochure that strongly supported their preferred candidate and one that strongly supported the opponent, while others were asked to choose between a brochure that strongly criticized the opponent and one that strongly criticized their preferred candidate. In both cases, subjects were much more likely to choose the brochure that positively reinforced their existing preferences. Another survey, which provided one of the few examples of dissonance avoidance, focused on people's attention to the Watergate scandal. In this study, Sweeney and Grubin (1984) found that committed Nixon supporters reported being less interested in and less attentive to Watergate news than respondents who were undecided or who supported McGovern.

In a second major review of literature on selective exposure, Frey (1986) sought to reestablish the legitimacy of the phenomenon. He argued that the lack of support for selectivity prior to 1967 could be explained by Festinger's (1964) later articulations of dissonance theory. In his revised version, Festinger specified that selective exposure only occurs if an individual's position is a product of choice and if the individual is personally committed to this position. Festinger also identified several conditions under which dissonant information would be *desirable*, such as when dissonant information might be useful for future decisions. Frey argued that earlier experiments failed to account for these important considerations. Reviewing research that attended to these factors, he concluded that when individuals are selecting information about decisions reached on their own accord and to which they are committed, they exhibit a consistently strong preference for viewpoint-reinforcement. Frey also argued that individuals engage in selective avoidance, though he found its effect to be much weaker than that of selective seeking.

In addition to emphasizing support-seeking behavior, recent selective exposure research demonstrates that in many cases the same factors predict attention to consonant and dissonant information. Cross-sectional survey data collected during the 1998 gubernatorial race in California demonstrated that political knowledge, political curiosity, political activity, and education are all correlated with increased exposure to both types of information (Chaffee *et al.* 2001). These results are similar to Feather's (1962; Feather 1963) finding, suggesting that interest in an issue can lead to increased exposure to the topic irrelevant of the position held.

In terms of political information seeking, this review suggests that when seeking news about an issue of personal importance, an individual will be drawn to information supporting his or her viewpoint while remaining largely indifferent to, and sometimes desiring, exposure to other perspectives. The important theoretical contribution here is disaggregating reinforcement seeking and challenge avoidance, treating the two phenomena as distinct. This approach allows me to reconcile the contradictory claims in contemporary research regarding selective exposure media effects. On this view, an imbalance in exposure would result from differential investment in seeking activity, whereby an individual exerts relatively greater effort to find support, not from significant challenge avoidance. This perspective also has important implications for the consequences of selective exposure on political tolerance and deliberation.

Other factors influencing ideologically-motivated selective exposure

There is some evidence that political ideology is related to an individual's tendency to engage in selective exposure. Data from the Erie County Study, when broken down in terms of political affiliation, show that only Republicans exhibited behaviors that could be described as selective avoidance: Democrats were exposed equally to pro-Democratic and pro-Republican information (Sears and Freedman 1967).

Recent scholarship affirms this trend. Data collected in the 2000 General Social Survey suggests that conservatives are more likely to engage in challenge avoidance than any other group (DiMaggio and Sato 2003; Baruh 2004).

Though not historically connected to selective exposure practices, there is some reason to expect religious activity to have an influence as well. Religious attendance has been shown to influence voting behavior (Peterson 1992; Harris 1994; Verba, Schlozman, and Brady 1995), and political activity more broadly (Wuthnow 1999). Particularly relevant, research has also shown that religious attendance is correlated with political intolerance (Stouffer 1955; Reimer and Park 2001). It seems reasonable to suggest that individuals who are less tolerant of other opinions might also be more inclined to avoid them. Thus, religious attendance could be linked to selective avoidance.

Data also suggest that individuals who regularly engage in issue-related activity could be more likely to engage in ideological selectivity. On the whole, these political activists are more committed to their position than most Americans, and would therefore be expected to experience more cognitive dissonance upon encountering viewpoint-challenging information (Festinger 1964). Furthermore, group polarization effects could reinforce member's perceptions that other viewpoints do not merit consideration, increasing pressure to avoid other viewpoints (Sunstein 2002). As a result, we might anticipate that individuals who frequently participate in political activity might be more likely to avoid viewpoint-challenging information.

Selective exposure media effects

Online news is unique in its ability to facilitate an individual's search for information in accord with his own political preferences if he chooses to do so. As Bimber and Davis observe (2003: 152), the web affords access to a greater volume of political information, more diversity of sources, and a higher level of control than any of

the other major media. The significance of this capacity on the selective exposure phenomenon is again a subject of debate.

There are conflicting results regarding the relationship between media-enabled capacities to control information exposure and viewpoint selectivity. Some scholars argue that increasing control will be associated with a significant drop in exposure to political difference, while others hold that the data do not support such an assertion.

On one hand, Mutz and Martin (2001) argue that control and exposure to challenge are inversely correlated. They found that among traditional media sources, those offering the most partisan content are associated with reduced exposure to dissonant information. For example, people are less likely to encounter viewpoints that differ from their own when listening to talk radio than when reading a newspaper or watching television. Similarly, they found that individuals who can choose among competing local sources of partisan news tend to have less contact with dissonant information than those living in areas served by a single (less-partisan) local news source.

On the other hand, research examining people's use of campaign information sources offering a balanced mix of viewpoints and high levels of control found no evidence of one candidate's supporters avoiding information about the other (Iyengar *et al.* 2003). The study was based on subjects' use of a multimedia CD containing extensive information about the two candidates in the 2000 presidential election. The CD included texts of major speeches, video of televised ads, and texts of the party platforms.

Similarly, analyses of 2000 and 2002 General Social Survey (GSS) data provide little evidence that people are using the Internet to avoid political difference. Strong partisanship is associated with the use of viewpoint-reinforcing sites, but not with a reduction in the use of viewpoint-contrary sites (Baruh 2004). Overall, 2000 GSS respondents used sites that are neutral or that challenge their viewpoint as often as they use those that reinforce it (DiMaggio and Sato 2003). Furthermore, they frequently report that their use of these sites helped them shape their opinion, not just reinforce it.

Another survey conducted in 2000 examining knowledge of the presidential campaign offers evidence that the Internet could potentially reduce the effects of partisan selectivity. In her study of this data, Stroud (2004) found that seeking political information online was associated with comparable increases in knowledge about *both* presidential candidates, especially among individuals with the lowest levels of political knowledge.

It is, however, possible to reconcile evidence that people engage in selective exposure with the evidence that they do not avoid viewpoint-challenging information. Mutz and Martin take their findings as evidence that people prefer congruent partisan sources to those that include other viewpoints, but there are alternate interpretations. First, exposure differences may be another expression of the different purposes motivating the use of these news outlets. For example, individuals may use television or newspapers in order to learn about both sides of an issue, and then turn to talk radio to obtain more detailed or more thorough viewpoint-reinforcing information. It may also be that for some individuals, highly partisan sources such as talk radio are valued as a source of entertainment, not of complete or balanced information. In either case, individual's media use will vary depending on their purposes. Second, the difference could reflect the fact that the comparisons focus on individuals selecting among partisan sources, not between partisan sources and those that are less partisan. An individual who chooses a source in which he can find support for his own viewpoint over one in which his viewpoint is absent might most strongly prefer a source representing both perspectives. In other words, the data could reflect a form of *de facto* selective avoidance, motivated by something other than an aversion to viewpoint-challenging information. In this case, we would expect that an individual who chooses a viewpoint-consistent partisan publication would, given the option, actually prefer a source in which his views are represented alongside information about other perspectives. Mutz and Martin's analyses do not contradict these alternative explanations.

Most data on the relationship between media-enabled exposure control and selectivity are consistent with the hypothesis that citizens seek viewpoint reinforcement without avoiding challenge. The widespread adoption of online news provides an exceptional opportunity to test this assertion. As noted above, people who get their news online have the opportunity to seek viewpoint support, to avoid viewpoint challenge, both, or neither. What they choose to do in this environment provides evidence of their underlying preferences.

Limitations of the Internet for viewpoint selectivity

I have argued that citizens do engage in selective exposure practices, and that these practices have significant implications for opinion formation and political tolerance. I have also suggested that the ways that users get news online can tell us something about their underlying preferences. Nevertheless, it is important not to overstate the significance of contemporary online news use. Citizens who get political information online have more opportunities to shape the ideological composition of their news environment than ever before, but this capacity has limits. In practice, contemporary information technologies, including online news, afford imperfect control. Thus, the political information exposure practices of online news users are suggestive, but they are far from definitive. In this section I describe two types of limitations on the selectivity afforded by new ICTs, and discuss what they mean for our understanding of the *future* of selective exposure and technology.

Imperfect searching and filtering

Despite the obvious sophistication of contemporary capabilities, information technologies today have clear limitations with regard to their ability to facilitate viewpoint selectivity. As noted, online news users have easy access to an immense

universe of political sources representing a wider range of viewpoints than found in a typical local news market, but the mechanisms by which search engines discover and rank pages prevent sources from realizing equal visibility.

The number of people visiting the most popular web sites is orders of magnitude greater than those visiting the less popular sites. Link structure and search-engine mechanisms have resulted in this power-law distribution of web site audiences in general (Albert *et al.* 1999; Huberman and Adamic 1999; Barabasi and Albert 1999) and among political news users in particular (Hindman *et al.* 2003). Well-known sites have many more inlinks (links to it from other sites) and are therefore much more likely to be found, whether the user follows links or uses a search engine, such as Google, that ranks pages based on incoming links (Page *et al.* 1998). So while the Web does offer a variety of ideologically-oriented alternative news sites, these sites have nowhere near the visibility of the sites of major news organizations or high-profile web portals, such as Yahoo or AOL.

While this does not diminish the claim that radical content exists and can be accessed via the web, it draws attention to the fact that finding viewpoint-consistent sources, especially those representing views outside of the political mainstream, takes time, energy, and skill. Seeking these sources requires either prior knowledge of the news product itself, or a willingness to engage in what can be an effortful search process. If a search is undertaken, it requires appropriately articulated search terms or link-following strategies, an assessment of search results, and, in many cases, repeated failures in order to identify a desirable source.

Seeking out information that a self-described conservative Republican would find supportive is not difficult because there are numerous news sources explicitly espousing this ideology; however, many people's political beliefs are more ambiguous. Imagine an individual whose political identity is defined by a constellation of issue positions: he opposes big government, supports abortion rights, is unsure about gay marriage, is

worried about the environment, and has not thought much about social security. It is likely that there is a source—be it a formal news organization, an issue-oriented news site, or a blog—that this hypothetical reader would agree with most of the time. There are, however, no tools that allow news seekers to easily identify sources based on their unique constellation of political predispositions. As a result, the sources used by the hypothetical semi-libertarian pro-environment hesitant-on-gay-marriage pro-choicer for social security reform are more profoundly shaped by the contingencies of the search process than his news preferences.

Automated search technologies further enable individuals to exert control over their news diet. Many news sites allow users to perform keyword searches of the current content and archives. News aggregation services, including those offered by Google, Yahoo, and Microsoft, allow users to search across thousands of news sites simultaneously. The results of these searches frequently include content representing a diverse range of ideologies. Contemporary search tools do not, however, allow individuals to narrow results based on ideology explicitly. Though one can search for news containing terms that reflect a particular position, this is an imperfect strategy for shaping exposure, simultaneously omitting relevant content and including viewpoint-challenging information. For example, consider someone seeking abortion news consistent with her own political opinion. Using “pro-choice” as a search term might yield results including both pro-choice arguments and pro-life arguments critiquing the concept of “choice”, while excluding an extensive amount of relevant news on “abortion rights”. Other topics are even more problematic. There are no well-established terms representing the debate over gay marriage, making it difficult for someone searching for information on this topic to easily filter out other views through their choice of search terms.

It should also be noted that such limitations may yet be overcome. Two research areas appear particularly promising with regard to the automatic creation of

ideologically-derived indices and filtering. First, collaborative filtering has been successfully deployed in a number of environments. These systems use the preferences of large groups of people to make recommendations for specific individuals (Resnick *et al.* 1994). The recommendations offered to consumers by the online merchant Amazon are a particularly well-known example. This system attempts to impute customers' book preferences based on their prior purchases and on explicit evaluations of items read (if the customer volunteers this information). Using this model of preferences, Amazon can offer recommendations by identifying items that other customers with similar interests have purchased.

In another variation on collaborative information filtering, the online technology news site Slashdot uses a distributed moderation system to assess news items (Lampe and Resnick 2004). In this system, thousands of users participate in the rating of news and commentary, and aggregate ratings can be used to sort and filter results as users browse or search the site. The system does not, however, afford user-level personalization, so selectivity only occurs to the extent that all users agree.

Research on the topic of collaborative filtering continues apace (e.g., the work of the GroupLens project, <http://www.grouplens.org/>), and the deployment of these technologies in the political news market seems likely. A system that encourages users to rate their agreement with news items, and uses the aggregate assessment information to recommend news stories that are most closely aligned with an individual's own ideological proclivities is a small variation on what has already been done.

A second approach is tailored specifically to the task of identifying partisanship. Research has shown that political sites tend to be embedded in ideologically-consistent networks (Hindman *et al.* 2003; Adamic and Glance 2005). Though still preliminary, early efforts to construct indices of partisanship based on the networks of links between political documents found on the web have been quite effective (Efron 2004). This technique was used to correctly identify whether a document represented liberal or

conservative views with 94% accuracy; political blogs were correctly classified with 99% accuracy. Assessing ideology requires more than distinguishing between liberal and conservative leaning, but this research provides a powerful proof of concept. Examining political information in the context of other information resources provides an effective indicator of ideology.

The limitations identified here clearly impinge on users' ability to practice ideologically-motivated selectivity online. There are a variety of technologies on the horizon that could enable users to more easily and effectively take political attitudes into account when retrieving or filtering political information. In light of these developments, we must be careful not to read too much into contemporary uses of the Internet.

Technology in practice

In spite of the limitations described, new ICTs are powerful enough to enable heightened selectivity. By combining existing capabilities, individuals can theoretically filter out political content with which they disagree. How people actually use new information technologies, however, may be an even more powerful limiting factor: there is significant evidence that individuals are fairly unsophisticated in their use of online search tools. Though most Internet users have used search engines and feel confident in their ability to acquire information online, they do not use these tools frequently and often fail to understand important distinctions in search results, such as the difference between sponsored results and those ranked based on user-supplied criteria (Fallows 2005). Furthermore, most search engine users rely on fairly simple search strategies, and ignore the more sophisticated alternatives available (Hargittai 2004).

Technologies only matter to the extent that they are integrated into practice (Orlikowski 2000). Many factors, including individual skills, habits, and routines, fundamentally shape how new capacities are used. If people are unaware of the filtering

capabilities described, or if they choose not to use them for any reason, then new technologies have not significantly altered their exposure practices.

With time, existing and new capacities may become more widely understood and used. “Search engine” and “Google” have become household words, and the technologies are routinely used by most Americans for a wide variety of tasks (Fallows 2005). Online news is also rapidly becoming more popular (Kohut *et al.* 2004). As online news filtering is integrated into individual and organizational routines, people are likely to realize a political news environment that more closely matches their preferences.

Social practices, as much as technical capabilities, constrain how new ICTs are used. If existing or new technologies facilitating ideologically-motivated selective exposure become more widely used in the future, citizens’ exposure to political information could be dramatically different than it is today.

Hypotheses

The literature suggests that when seeking political information about issues that matter to them, citizens engage in ideological selective exposure. These practices have important consequences, shaping public opinion and potentially altering political tolerance levels and the quality of deliberation. I argue that this selectivity is primarily enacted in the form of seeking viewpoint-reinforcing information, and not as challenge avoidance. I propose to test the following five hypotheses:

H1. Individuals like being exposed to viewpoint-reinforcing information.

That is, the more viewpoint-reinforcing information a news item contains, the more likely an individual will be to look at it and the more time he will spend reading. This also means that individuals who have more control over their news diet will have greater familiarity with the arguments supporting their viewpoint than those with less control.

H2. Nonconservatives are indifferent about exposure to viewpoint-challenging information.

That is, the presence of viewpoint-challenging information does not influence the likelihood that a moderate or liberal subject will read a news item or how long the subject will spend reading. This also means that moderates and liberals who have more control over their news diet will have the same level of familiarity with the arguments challenging their viewpoint as those with less control.

H3. Conservatives mildly dislike being exposed to viewpoint-challenging information.

That is, the presence of viewpoint-challenging information negatively influences the likelihood that a conservative subject will read a news item or how long the subject will spend reading. This also means that conservatives who have more control over their news diet will have the less familiarity with the arguments challenging their viewpoint than those with less control.

H4. Individuals who are more involved in ideologically-oriented activity, such as political and religious activity, also mildly dislike being exposed to viewpoint-challenging information.

Individuals active in issue-based activism or religious social networks will pay less attention to information with which they disagree. Their overall familiarity with opposing opinions will be lower than those who are less active.

H5. Individuals like viewpoint-challenging information if and only if they have exposure to viewpoint-reinforcing information.

Individuals have little or no aversion to viewpoint-challenging information, and recognize that contact with such information can be useful in some circumstances; however, they prefer their exposure to viewpoint challenges to occur when viewpoint-

supporting information is readily accessible. As a consequence, nonpartisan sources in the online news market will be used more frequently than otherwise comparable partisan sources. Individuals who use partisan sources prefer those that support their viewpoint and will generally use nonpartisan sources as well.

Prior research also suggests that many variables affect consonant and dissonant information exposure similarly. Factors such as increasing open mindedness, political interest, education, and age are all associated with increased exposure to both types of information. When testing the hypotheses above it is necessary to control for these potentially confounding factors.

New ICTs, which afford users unprecedented control of the kinds of political information they encounter, make it more feasible for individuals to realize these preferences. This affords two opportunities for testing the hypotheses listed above. First, I can compare the political information exposure of online news users to those who do not get their news online. To the extent that technology augments users' ability to control their information environment, an individual's overall information exposure in this environment is likely to better reflect his or her exposure preferences. Second, I can observe decisions that individuals make in an environment that affords significant control over political information exposure. Choices made in such an environment provide another source of insight into individual preferences.

Conclusion

The goal of this project is to enhance our understanding of how new ICT-based news seeking will affect individual exposure to political information, and to suggest what consequences these practices might have for political discourse around controversial

issues. If these hypotheses are correct, they should allay some of the most pessimistic fears regarding the future of political disagreement. They suggest that citizen users of selectivity-enhancing technology will realize a shift in their exposure to political information. It will likely be a shift toward stronger, less arbitrary attitudes that are more consistently aligned with a particular ideology. It will not, however, be a shift toward a more polarized or intolerant society.

In the next chapter I describe two studies designed to assess these hypotheses. The first is a survey intended to test the claims regarding the influence of the Internet on political information exposure today. The second is an experiment created to examine how people use political information when seeking news in an environment that offers enhanced control over information exposure.

CHAPTER 3

METHODS

This research project addresses two related sets of questions. The first regards the Internet's influence on individuals' overall exposure to political information, while the second concerns the decisions they make about their use of specific news items. The two groups of questions are best addressed with different methodologies. In order to examine Americans' news diet overall, I use data collected via a representative national telephone survey. To gain insight into their choices on a story-by-story basis, data were collected using a web-administered experiment, with respondents recruited from several well-known partisan news sites. This chapter describes each methodology in turn.

Survey Design

I collaborated with a team of researchers to design a survey to assess my first set of research questions.ⁱⁱⁱ The national telephone survey was sponsored by the Pew Internet and American Life Project and administered by Princeton Survey Research Associates (PSRA) between June 14 and July 3 2004, shortly before the party conventions. A pretest of the instrument conducted a few weeks prior to full deployment helped ensure that the questions and instructions were clear.

ⁱⁱⁱ Other major contributors included Paul Resnick at the University of Michigan, John Horrigan and Lee Rainie at the Pew Internet and American Life Project, and Kristen Purcell at Princeton Survey Research Associates.

Sampling and administration

Respondents were contacted via a random digit sample of telephone numbers. Following standard PSRA protocol, interviewers asked to speak with the youngest adult male at home at the time of the call. If no males were present, the interview was conducted with the oldest adult female present. This is a standard randomization technique used in the survey industry, and has been shown to produce samples very close to the actual distribution of the general public (Keeter *et al.* 2000). Young males and older females are the hardest subsamples of the population to get in a telephone survey; asking for them first helps to balance out this known nonresponse bias. The overall response rate was 31.2% (77% contact, 43% cooperation, and 94% completion). The result is a representative sample of English-speaking non-incarcerated adults Americans. The final sample included 1,510 adults from across the continental United States.

Variables: measurement and scale construction

The survey included several types of questions relevant to this research (see Table 7; the complete survey is included in Appendix A). A battery of questions assessed respondents' Internet use, including the speed of their Internet access at home and at work, their use of online news sources, and their Internet experience in years. These items were used as measures of individuals' ability to shape their information environment. This is based on the fact that those who use online news more frequently have greater opportunity to utilize the selectivity-enhancing capabilities of the Internet, while more experienced Internet users are also likely to be familiar with some of the more sophisticated tools for navigating news online. From familiar technologies, such as web search engines and portals featuring top headlines, to newer and more complex services, such as the multi-source news aggregation provided by Google News, knowledgeable users have a variety of resources that can help them control their

information exposure. Given these capacities, online news users ought to be able to realize a news environment that more closely reflects their preferences. For example, if individuals are systematically avoiding viewpoint-challenging information, then online news users should have less contact with such content.

In reference to the campaign, the survey included a series of items about respondents' candidate preferences for the 2004 presidential election, and their level of campaign news surveillance.

The survey also included five questions designed to assess respondents' open mindedness, which were based on selections from the 36-item California Psychological Inventory - Openness scale (CPI-Op) (Hakstian and Farrell 2001). These items were crafted to reflect the study's focus on politics, decision-making, and information exposure. Though the CPI-Op scale has been tested as a whole, the set of questions created for this study are new and their validity as a scale was untested. In the analysis stage it was determined that these items had very low scale reliability (Cronbach alpha = 0.28). Principal component analysis provided additional evidence that these items measured different phenomena: two components explained only 52% of the variance, and four components were required to explain more than 75% of the variance. For this reason, these items are treated separately in all analyses.

Finally, the survey included a collection of demographic questions, including questions about education, gender, age, sex, religious preference and activity, and race/ethnicity.

Table 7. Survey questions – Internet access, candidate preferences, campaign activity, open-mindedness

Internet access

Do you ever go online to access the Internet or World Wide Web or to send and receive email?

About how many years have you had access to the Internet?

IF ONLINE UNDER A YEAR:

About how many months is that?

ASK IF GO ONLINE AT HOME:

Does the computer you use at home connect to the Internet through a dial-up telephone line, or do you have some other type of connection, such as a DSL-enabled phone line, a cable TV modem, a wireless connection, or a T-1 or fiber optic connection?

ASK IF GO ONLINE FROM WORK:

Do you happen to know what kind of Internet connection you have at WORK, a high-speed connection or dial-up connection through a modem?

IF HAVE BROADBAND AT HOME:

About how many years have you had high-speed Internet service at home?

IF HAVE BROADBAND LESS THAN A YEAR:

About how many months is that?

Campaign surveillance

How closely have you been following news about the upcoming Presidential election? Very closely, somewhat closely, not too closely, or not at all closely?

Candidate preferences

Suppose the election for president were being held TODAY and the candidates were... Who would you vote for? George W. Bush, the Republican; John Kerry, the Democrat; and Ralph Nader, an Independent candidate

As of today, do you lean more toward... Bush, the Republican; Kerry, the Democrat; or Nader, the Independent

Suppose there were only two presidential candidates on the ballot and you had to choose between... (INSERT CHOICES). If the election were held today, who would you vote for?

FORM A

George W. Bush, the Republican; and John Kerry, the Democrat

FORM B

John Kerry, the Democrat; and George W. Bush, the Republican

Open mindedness

I'm going to read you a few statements. For each one, please tell me if this describes you very well, somewhat well, not too well, or not at all.

After I gather all the facts about something, I make up my mind pretty quickly

I like to read about a lot of different things

I find it difficult to make up my mind when I have too much information about something

Once I have my mind made up about something, I seldom change it

I enjoy hearing about politics and world affairs

Note: For analysis, open-mindedness responses have been coded such that larger numbers correspond to greater openness.

The instrument used two distinct mechanisms to assess information exposure, corresponding to the two opportunities that online information seekers have to influence their exposure to political information. Before reviewing the specific measures, consider the two forms of influence. The first is source selectivity. Once online, individuals have access to a range of sources, from those that offer a relatively balanced view to those that explicitly reject balance in favor of political bias. The online publications of news organizations such as CNN, the Washington Post, and the New York Times provide a ready example of the former, while CNSNews.com (“The Right News. Right Now.”) and the left-leaning AlterNet exemplify the latter. The second is content selectivity. There are a variety of tools for searching and filtering online content. From familiar technologies, such as web search engines and portals featuring top headlines, to newer and more complex services, such as the multi-source news search and aggregation services provided by Google News, knowledgeable users have a variety of resources that can help them control their information exposure. Capitalizing on these capacities, an individual could create a homogeneous media environment out of a collection of relatively heterogeneous sources.

The exposure measures reflected the two modes of online selectivity. In order to identify sources of political information, interviewers asked all respondents to indicate which of several types of media they used, and asked Internet users about their use of online political news generally and several types of political web sites in particular (See Table 8).

Table 8. Survey questions – Online political information exposure

Do you ever get news or information about the candidates and the campaign on the Internet or through email?
How often do you get news or information about the candidates and the campaign on the Internet or through email – everyday or almost everyday, several times a week, several times a month, or less often?
Where have you gotten MOST of your news and information about the presidential election campaigns? From television, from newspapers, from radio, from magazines, or from the Internet and email? (ACCEPT TWO RESPONSES)
In the past 12 months, did you happen to visit any of the following websites?
The website of a major news organization, such as cnn.com or msnbc.com
The website of an INTERNATIONAL news organization, such as the BBC or Aljazeera
The website of an ALTERNATIVE news organization, such as AlterNet.org or NewsMax.com
The website of a politically LIBERAL organization, such as People for the American Way or Moveon.org
The website of a politically CONSERVATIVE organization, such as the Christian Coalition or the American Enterprise Institute
Form A
GeorgeWBush.com, the President's official reelection website
JohnKerry.com, the official website of the Kerry campaign
Form B:
RNC.com, the official website of the Republican National Committee
DNC.com, the official website of the Democratic National Committee

The survey also included measures of the number of opinion-reinforcing and opinion-challenging arguments individuals had encountered. Interviewers asked respondents about their familiarity with a series of arguments about the candidates in the 2004 presidential election. The research team identified two arguments supporting and two challenging each candidate, for a total of eight arguments in all (See Table 9). The viewpoint-reinforcement score was a summative measure based on individuals' familiarity with the statements favoring their preferred candidate or criticizing the opponent, with respondents receiving one point for each argument they heard at least once in a while. The viewpoint-challenge score was computed using the other four items. The resultant scores are summarized in Table 10.

The summary of exposure scores demonstrates that the distributions of exposure are different for Bush and Kerry supporters. This reflects the fact that the opinion statements were interpreted differently for the two types of voters—an argument that was

treated as reinforcing for Bush supporters was said to be challenging for Kerry supporters and vice versa—and that Bush arguments were better known overall ($t=2.042$, $df=1369$, $p<.05$). Given the difference in the interpretation and distribution of the dependent variables for Bush and Kerry supporters, the two groups are treated separately in all analyses.

Table 9. Survey questions – Exposure to opinion statements

I'm going to read different arguments people make about the Presidential candidates and their policies. Please tell me how often you have heard or read each argument – frequently, just once in a while, or never. Here's the (first/next) one...
IF R SUPPORTS BUSH, ASK BLOCK 1 FIRST, OTHERWISE ASK BLOCK 2 FIRST.
BLOCK 1
The Bush administration's policies have helped the country's economy begin to recover
George Bush is a stronger leader than John Kerry in the war against terrorism
John Kerry changes his positions on the issues when he thinks it will help him win an election
John Kerry has a history of accepting money from special interest groups
BLOCK 2
John Kerry will end special treatment for corporations and wealthy Americans
The Bush administration misled the American public about the reasons for going to war with Iraq
John Kerry has a better strategy than George Bush for creating peace in Iraq
Some Bush administration policies are a threat to basic civil rights and civil liberties

Creating the list of arguments on which to base the exposure measures was a multistage process. A preliminary list of statements was selected from items used in other recent political surveys. Next I identified two high-profile campaign-oriented web sites for each side of each debate using Google's directory service. I selected sites with the highest PageRank score, a relevance measure based on a variety of factors including how many other sites link to it, and found arguments by seeking out relevant sections. These sections were listed under heading such as “information about candidate”, “talking points”, “advertisements”, “action alerts”, and so forth. I then coded this text and video using open-ended codes, placing no limit on the number of codes assigned to an item. As coding progressed, codes were grouped into conceptual clusters and labeled, and these clusters were iteratively revised as new codes were added. Finally, the list of statements was modified to more closely match the concepts identified in the coding process. In the

final list, we intentionally selected a mix of high- and low-prominence statements to help ensure that some arguments would be unfamiliar even to those who regularly followed the campaign.

Table 10. Exposure scores

Exposure scores	N	Min	Max	Mean	SD
Bush supporters					
Opinion-reinforcing	694	0	4	3.04	1.07
Opinion-challenging	694	0	4	2.41	1.19
Kerry supporters					
Opinion-reinforcing	676	0	4	2.83	1.06
Opinion-challenging	676	0	4	2.33	1.36
Bush and Kerry supporters overall					
Favoring Bush	1370	0	4	2.69	1.27
Favoring Kerry	1370	0	4	2.62	1.15

Source: Pew Internet & American Life Project survey, June 2004.

Focusing on respondents' exposure to arguments has advantages over asking them to describe the mental processes influencing their exposure decisions. Individuals are notoriously bad at identifying the mental processes that influence their behavior based on introspection. Research suggests that people are incapable of such insight (Nisbett and Wilson 1977): they can report what they know but not how they know it.

Asking about exposure to particular arguments also has advantages over relying on respondents' impressions of their aggregate political information exposure. It is easier for individuals to assess whether a particular argument is familiar than their overall exposure levels to a class of arguments. I sum respondents' familiarity with specific arguments for both sides in order to assign aggregate scores for consonant and dissonant exposure.

This approach differs somewhat from those used in the studies reviewed in Chapter 2, meriting a brief comparison. Mutz and Martin (2001) asked respondents to assess the extent to which they agree with the political leanings of their preferred news outlets. Their survey focused on attitudes related to the 1996 presidential election and to

political news more generally. Like the approach taken in this study, their technique relies on respondents' ability to recall contact with political information. There are, however, a few important differences. Their instrument asked respondents to broadly characterize a source as providing predominantly consonant or dissonant information. This technique offers no detailed information about the relative level of exposure to consonant and dissonant information. As a consequence, a news outlet providing high levels of exposure to consonant *and* dissonant information, with only slightly more consonant exposure, is treated as equivalent to one that provides consonant information to the exclusion of dissonant information. The survey instrument used here provides separate consonant and dissonant exposure measures.

Stroud's (2004) analysis employs another interesting alternative to the approach used here. She focuses on respondents' knowledge about the positions held by the two leading candidates in the 2000 election. Knowledge about the supported candidate is treated as evidence of consonant information exposure, while knowledge about the opponent is a measure of dissonant information exposure. An advantage of this technique is that it greatly reduces the risk that respondents are attempting to provide responses that reflect normative social values; it is more difficult to guess the correct answer to a factual question than to falsely claim to have heard a statement. On the other hand, notions of consonance and dissonance are more complicated in the context of candidate positions than in the context of opinion statements. For example, in Stroud's study knowing that George W. Bush supports the death penalty was treated as evidence of exposure to dissonant information for a respondent supporting Al Gore because it reflected contact with information about the opposing candidate. If the individual also opposed the death penalty, however, knowledge of Bush's position could be construed as *consonant* because it helps justify the individual's opposition to Bush. In this study questions about argument familiarity were unambiguously supportive of a single candidate. For example, the statement, "Bush administration's policies have helped the

country's economy begin to recover" would in no way reinforce a Kerry supporter's position.

A few prior studies have, however, used measures similar to those used in this study to assess respondents' argument repertoires both for and against their position. In at least two surveys examining the causes and consequences of cross-cutting information exposure, researchers asked open-ended questions about respondents' awareness of opinion rationales (Price *et al.* 2002: 99; Mutz 2002: 115). As with Stroud's study, this open-ended approach reduces the likelihood that social desirability will influence individual responses. At the same time, however, this approach has at least two disadvantages. It is much more burdensome, requiring more time for data collection and subsequent coding, and it increases the risk that respondents will fail to recall the full range of arguments heard.

Memory is fallible, and any technique that relies on respondent-provided accounts of information exposure risks introducing error. There is evidence that people are selective with regard to what information they retain, and are more likely to remember encountering information that runs counter to their *expectations* (Stangor and McMillan 1992; Koriat *et al.* 2000). *Attitude*, however, does not consistently influence memory. Individuals exhibit no bias toward either attitude-consistent or attitude-inconsistent information (Eagly *et al.* 1999; Holbrook *et al.* 2005: 750). Even if individuals did engage in attitude-based selective retention, there is no reason to expect that this would affect those who get news online more than those who get news offline, and it would not make a correlation between online news use and a change in exposure to disagreement any more likely. Thus, this measurement inaccuracy should not affect my ability to assess the main hypotheses of the study.

Survey hypotheses

The hypotheses described in Chapter 2 describe individual preferences and behaviors in broad terms. This chapter spells out the specific methods employed to test these assertions. In light of the methods described in this section, I propose the following adaptations of the five high-level hypotheses. These more specific claims reflect the survey's focus on overall information exposure.

- H1a. Individuals who have more control over their news diet will have greater familiarity with the arguments supporting their viewpoint than those with less control.**
- H1b. Individuals who use online partisan sources will prefer those that support their viewpoint to those that do not.**
- H2a. Nonconservatives who have more control over their news diet will have the same level of familiarity with the arguments challenging their viewpoint as those with less control.**
- H3a. Conservatives who have more control over their news diet will have slightly less familiarity with the arguments challenging their viewpoint than those with less control.**
- H4a. Individuals active in religious social networks will have slightly less familiarity with opposing opinions than those who are less active.**
- H5a. Online news users will prefer nonpartisan sources to otherwise comparable partisan sources.**
- H5b. Individuals who use online partisan sources will generally also use sources that provide more balance.**
- H5c. Individuals who use online partisan sources will only use viewpoint-challenging information if they also use viewpoint-supporting information.**

Analysis

A variety of statistical techniques are used in the analysis of the survey, including confidence interval comparisons, chi-square tests, and linear regression. In all cases, analyses were conducted using population weights to correct for known sampling biases in random digit dial telephone surveys. PSRA explains their procedure for calculating these weights as follows: “The demographic weighting parameters are derived from a special analysis of the Census Bureau’s March 2003 Annual Social and Economic Supplement Survey. This analysis produced population parameters for the demographic characteristics of adults age 18 or older, living in households that contain a telephone. These parameters were then compared with the sample characteristics to construct sample weights. The weights were derived using an iterative technique that simultaneously balances the distribution of all weighting parameters.”

Experimental Design

I conducted a web-based experiment to test whether making ideologically-motivated selectivity easier influences people’s political information exposure. The experimental environment afforded subjects a significant level of control over their news exposure. Participants were presented with a politically diverse collection of news items, they had a variety of cues to help them identify the ideological orientation of each item (a headline, source, and synopsis), and they had complete control over which items they used, in what order they looked at them, and how long they spent reading.

There were two stages to the experiment. First, I presented subjects with a heterogeneous set of news items representing a range of political viewpoints, asking them to assess the extent to which the content was supportive of and/or challenging to their viewpoint on the basis of a brief description of each item. I then observed subjects’ use of the items, recording which they chose to read and how long they spent reading them. In

my analysis I use linear and logistic regression to examine the factors influencing variations in use across the pool of subjects.

This methodology was developed in the context of a long history of experimental research on selective exposure. Between-subjects experimental designs, which compare different subjects under different conditions (as opposed to comparing behaviors of a single subject under a variety of conditions), have often been employed to study how individuals use political information (Cook and Campbell 1979). Computer-administered studies of news use also have precedent. For example, several researcher have invited subjects into a lab to use a custom-built online newspapers or newsmagazines that automatically manipulate and/or log use of the news content (Althaus and Tewksbury 2000; Althaus and Tewksbury 2002; Knobloch *et al.* 2003a Knobloch *et al.* 2003b Knobloch 2004; Sundar 1998; Sundar and Nass 2001; Valentino *et al.* 2004). Other researchers have provided subjects with computer-based resources in their homes and recorded information about their use of these information tools (Iyengar *et al.* 2003; Lupia and Baird 2003; Neuman *et al.* 1996).

The study described here, however, is unique in two regards. First, the experiment was conducted online, which afforded a number of valuable opportunities. It allowed me to recruit online news users from across the country rather than relying on locally accessible subjects to obtain data. It also meant that subjects could participate using the same computer they would normally use to access online news, meaning that the environment in which the experiment was conducted was quite similar to the one in which the behavior of interest normally occurs. The second unique attribute of the study is that its administration was fully automated, further expanding the benefits of conducting it online. Subjects could complete the study at any time, day or night, just as they might use any other online news. Automation also greatly reduced the burden on the researcher, which translated into many more completions than would otherwise be possible. Nearly 1,000 people participated in the 30-minute experiment. Finally, the

experiment used actual news items selected in real-time from the online news media. There was no need to ask subjects to imagine that stories were timely or to select topics were timeliness was unimportant. This was the content that subjects would choose among *if* they used contemporary news-search tools. Though none of these attributes is entirely unique in itself, taken together they represent a novel methodology for studying how real online news users make decisions about current news.

Sampling

I recruited subjects from two distinct populations: (1) English-speaking adult Americans who use partisan online news services, and, more broadly, (2) the general population of English speaking adults living in the continental United States. I selected the first group because I anticipated that these individuals, who were already using the online news environment to shape their exposure to political information, would be particularly likely to engage in ideological selective exposure. The second group, on the other hand, was intended to be more representative of the U.S. population at large. As explained below, however, the response rate for the second group was very low and I ultimately chose to omit them from the analyses.

I had several partners for subject recruitment. To recruit online newsreaders, I collaborated with four high-profile partisan news services. Two of the organizations, AlterNet—A Project of the Independent Media Institute—and MovingIdeas, align themselves with the political left, while the other two, WorldNetDaily and The Washington Dispatch, tend toward the political right. I worked with staff members to select a recruitment strategy appropriate to each community. All four organizations included a brief (75 word) recruitment statement in their weekly newsletter distributed via email (see Appendix C). These materials were sent out between February 5 and February 16, 2005. One group, WorldNetDaily, also included the statement in the news

headlines listed on its web site on February 15. The exact number of individuals encountering the recruitment material is unknown because the author did not have direct access to information about the email list size or web site traffic. Conversations with news service staff suggest that as many 20,000 people may have seen the material sent by AlterNet, and that material posted to the WorldNetDaily site and sent via its email list could have been seen by 100,000 people.

For the more representative sample, the Pew Internet & American Life Project included a request for volunteers at the end of a random-digit-dial telephone survey administered in November 2004. A total of 416 respondents were willing to hear more about the project, and voluntarily provided their email address; however about 15% of the addresses were invalid. I assume that most of the remaining 357 recruitment messages reached the intended recipient.

I sent all volunteers from both the online newssreader and general population groups an email briefly describing the purpose of the study, the time required to participate, and the incentive—entry into a \$100 gift certificate lottery—and explaining how to participate (Appendix C). Volunteers who had not completed the study after two weeks were sent an email reminder. As shown in Table 11, the overall completion rate was high, with more than half those who volunteered to participate completing the study (55%).

Table 11. Experiment response rates

Recruitment site	Volunteers	Valid emails	Completions	% Completions
AlterNet	704	700	358	51%
WorldNetDaily	774	762	369	48%
<i>Included in study</i>	1478	1462	727	50%
Washington Dispatch ^a	10	10	8	80%
Moving Ideas ^a	2	2	8 ^d	N/A
Pew survey follow-up ^b	416	357	24	7%
Unknown referrer – Skipped recruitment question ^c			21	
Unknown referrer –			222	

Skipped demographic section^c

<i>Overall</i>	1906	1831	1010	55%
a. Omitted on account of low volunteer rate				
b. Omitted on account of low response rate				
c. Omitted on account of missing referrer information				
d. Some subjects incorrectly identified the referring site				

There were some problems identifying how subjects learned of the study. Due to an oversight in my design for software used to administer the experiment, referring sites were not automatically recorded when subjects volunteered; instead, participants were asked to identify where they learned of the project as a part of the demographic survey at the end of the experiment. This resulted in a number of errors. First, about 22% of the subjects skipped the demographic section entirely, and another 2% declined to specify where they had learned of the project. Overall, there were 243 subjects who completed the study but could not be linked with any of the recruitment sites, and are omitted from the analyses that follow.^{iv} As a consequence, the number of individuals successfully recruited to complete the study via each site is a conservative estimate. Second, a few individuals may have incorrectly identified the referrer. For example, more subjects indicated that they had learned of the experiment through the Moving Ideas Network than responded to the recruitment materials sent through this organization.

Looking at those for whom recruitment information is available, we see that the completion rate was highest (about 50%) among those recruited via partisan news sites. Two factors may help explain this fact. First, only individuals who were interested in learning more about the project would be expected to volunteer. Second, users of these news services have an unusually high level of interest in the news, which may have

^{iv} I suspect that the unknown-referrer group includes individuals from each of the recruitment sites. That the distribution of responses to questions about political ideology and political affiliation for this group did not match any of the three groups with known recruitment provides some evidence for this.

enhanced the project's appeal. That I received several unsolicited emails from participants detailing their news reading practices supports this belief. In contrast, the response rate among those recruited via the telephone survey follow-up was surprisingly low. Only 7% of those who volunteered a valid email address actually completed the study.^v One probable explanation is that, in contrast to the other recruitment strategy, volunteers had no knowledge about the project when they agreed to be contacted. As previously mentioned, because of the low response rate individuals recruited via the telephone survey are also omitted from the analyses that follow.

The effectiveness of the web-based strategy for soliciting volunteers varied significantly across the four sites. AlterNet and the WorldNetDaily generated the most responses, with 700 and 762 volunteers respectively. In contrast, the efforts to recruit Moving Ideas Network and Washington Dispatch readers were almost completely unsuccessful. There were a total of twelve volunteers from these two groups, only a few of whom completed the study. I do not have systematic data for analyzing the reasons for the different volunteer rates, but I suspect that they reflect differences in readers' use of the news products. Though all four sites send newsletters on a weekly basis, AlterNet and WorldNetDaily are unique in several regards. They are among the most linked-to partisan news sites according to Google, their mission is to produce and distribute online news, and their emails tend to highlight site-specific content. Moving Ideas, in contrast, focuses on providing easy access to policy information, not necessarily news, and its emails include pointers to many other sources. Though focused on news, the Washington Dispatch has a much lower profile than the other three sites according to its ranking in the Google directory, and its email subscriber base is significantly smaller. Given the small

^v As noted above, some of these individuals may not have identified the referrer, which could make the actual number slightly higher.

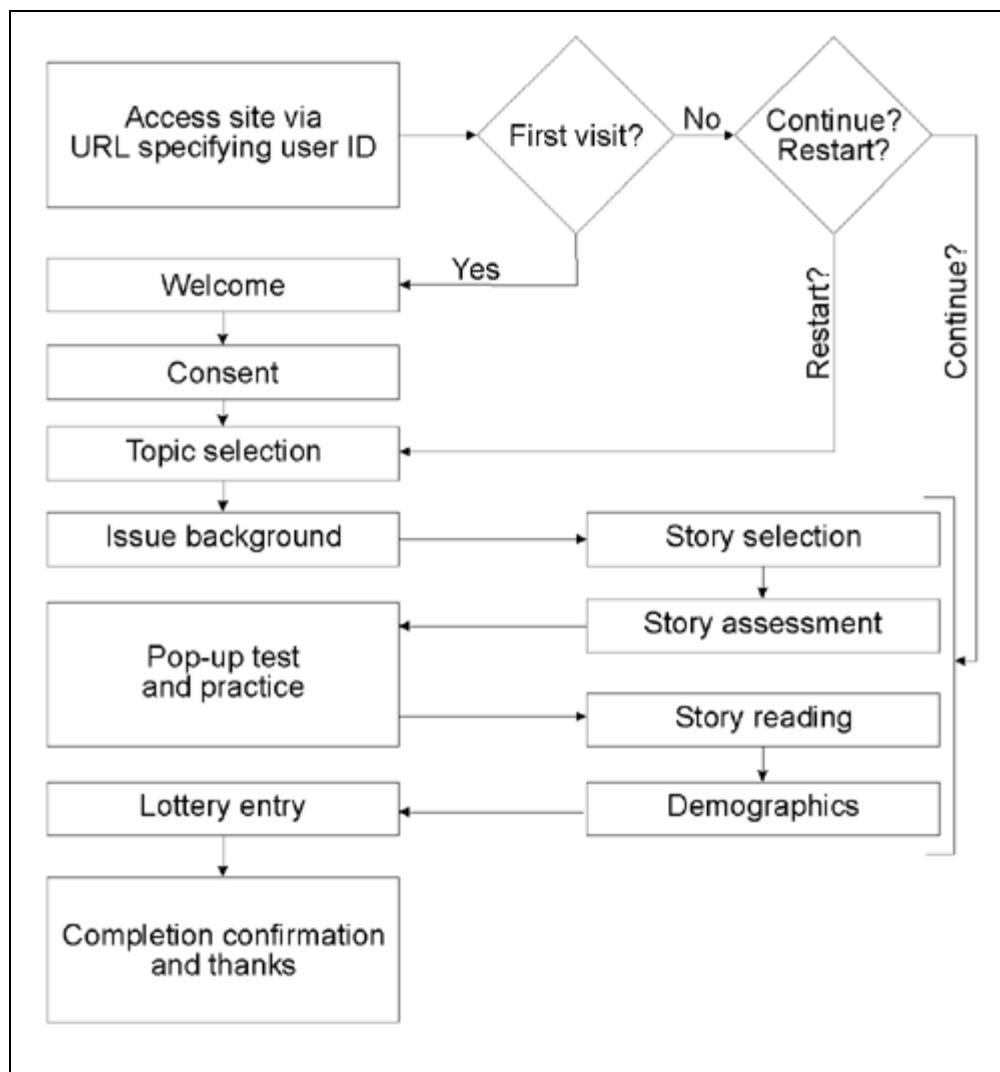
number of respondents recruited from these sites and the uncertainty regarding the reasons for this, I have also omitted these individuals from the analysis.

Administration

Subjects participated in the experiment over a six week period between February 9 and March 20, 2005. As previously indicated, the experiment was automatically administered over the web. Participants accessed the site through a user-specific URL included in their email invitation. Once a subject completed the study, that URL was disabled. As a result, only one individual was allowed to complete the study for each invitation. If a subject left the site before completing the study, that individual could use the URL provided to return to the site at any time, choosing either to continue from where s/he left off or to start over.

The site software used a web interface to guide subjects through the experiment, presenting them with a series of web pages, tracking their actions, and recording their responses. The overall organization of the site is presented in Figure 1. Navigation between these pages was accomplished using buttons located at the bottom of the screen (see Appendix D for sample screenshots). When a subject opted to continue to the next page, the software automatically checked for unanswered questions. If a question was left blank, the subject was given the opportunity to complete it before proceeding. Subjects were also allowed to return to the previous page (although there were two exceptions, described below).

Figure 1: Experiment – site organization



Upon arriving, subjects first indicated which of three political issues—gay marriage, social security reform, or civil liberties—was of the greatest personal interest, and provided information about their familiarity with the topic, including how much they had heard about it, how often had they participated in related political activity, and whether their position had changed over time (a complete list of questions is included in Appendix E). Next the system presented users with a web page describing five relevant news items automatically selected from a diverse collection of recently published online

news.^{vi} Each item listing included a headline, source, and two-line excerpt. Subjects were asked to use checkboxes to indicate which, if any, of the items they were interested in reading. Subjects were allowed to select as many as they desired, and were informed that they would be given an opportunity to read the stories later in the experiment. Having submitted their answers to this page, subjects were not allowed to go back. This was intended to minimize the possibility that subject choices would be influenced by the assessment questions that followed.

In the next section, subjects answered a series of questions about each of the five news items based on the brief synopses provided. The automated story selection was not perfect, so the first few questions were designed to identify duplicate or irrelevant news stories. The remaining questions, which are described in more detail below, addressed subjects' perceptions of the news item. After submitting these responses, subjects were again prevented from returning to prior sections of the study. Having completed this assessment, subjects were given the opportunity to read any of the stories in which they had expressed interest. (Items left unchecked in the initial evaluation were not relisted.) The instructions informed subjects that they had fifteen minutes to read, that they could stop reading at any time, and that they were not required to read all the items. The system allowed subjects unlimited time to read individual news items, but prevented them from starting new items after 15 minutes had passed. The limit was implemented because prior research suggests that increased costs—opportunity costs in this case, since spending time on one story reduces the opportunity to spend time on another—would motivate subjects to place relatively greater weight on the information they prefer (Frey 1981a). Stories that a subject chose to view were presented in a new window. The subject could not select another story or continue to the next stage of the experiment without closing the

^{vi} The mechanism by which they were selected is described in the implementation section, below.

window. After reading each item, a few follow-up questions were presented. This allowed subjects to indicate whether they had been able to access the content, and to revise their assessment based on what they read. After responding, subjects were allowed to view another news item or to continue to the next section of the study. In the last section, subjects were presented with a series of demographic questions.

Variables: measurement and scale construction

The phenomenon of interest in this study is people's use of issue-related news. I examined factors influencing both the use of particular news items, and subjects' overall news use. Item-level use was measured in two ways. First, subjects were asked to indicate which of five news items they were interested in reading. Story selection was used to measure interest in the items because subjects made this decision prior to encountering the assessment questions, which could conceivably influence their interest level. Second, the system automatically recorded how much time a subject spent accessing each item (in seconds). Read time for a news item was measured from when a subject opened it in a new browser window to when the window was closed.

Subject-level use was assessed with two comparable measures. The system automatically calculated (1) the total number of stories the subject read and (2) the total time the subject spent reading. I chose to use the total number of stories read, rather than the number selected. Reading is more burdensome, and should therefore be a more accurate expression of people's preferences. Although the assessment questions the users answered after selecting items of interest might have influenced the decision to read individual stories, there is no reason to think that they would create a systematic bias with regard to the total number of stories read. Though calling attention to the views represented in a set of stories is expected to influence which items subjects attend to, it is

not predicted to influence overall levels of readership. Analyses based on these two measures, items selected and items read, yielded comparable results.

A variety of factors are potentially associated with news item use. The variable of primary theoretical interest was the perceived level of viewpoint-reinforcing and viewpoint-challenging information included in a news item. These perceptions were measured twice during the study: immediately following the initial selection decision (anticipated or prospective perception), and after viewing the full news item (experienced or retrospective perception). Subjects based their decision to select a news item on the *anticipated* information content, while both *anticipated and experienced* content could influence how long subjects spent looking at a news item. I considered combining the before and after measures, but decided against it based on the low inter-item reliability scores (Cronbach alpha of .52 for consonant information; .49 for dissonant information.)

To assess the presence of viewpoint-reinforcing information, subjects were asked about the extent to which the news item (1) describes arguments supporting their position, and (2) provides evidence that other people agree with them based on the brief synopsis provided (see Table 12). Expectations regarding viewpoint-challenging information were measured in a similar fashion. Responses were summed to create reinforcement and challenge scores that fell between two and ten (Cronbach alpha of .88 and .87 respectively).

Table 12. Measures of perceived viewpoint

<u>Anticipated viewpoint information</u>
I expect the news report to describe arguments supporting my political viewpoint
I expect it to demonstrate that others support my political viewpoint
I expect it to describe arguments opposing my political viewpoint
I expect it to demonstrate that others oppose my political viewpoint
<u>Experienced viewpoint information</u>
The news report described arguments supporting my political viewpoint.
It demonstrated that others support my political viewpoint.
It described arguments opposing my political viewpoint.
It demonstrated that others oppose my political viewpoint.

As suggested by the hypotheses, the instrument also included several factors predicted to interact with viewpoint perceptions, including political ideology, and socialization in the form of political or religious activity (see Table 13).

Table 13. Measures of factors expected to interact with perceived viewpoint

Would you say your views in most political matters are very liberal, somewhat liberal, moderate, somewhat conservative, or very conservative?
In the past 12 months, how often have you participated in meetings, demonstrations, or other activities related to the issue?
How often do you go to church, synagogue, or some other place of worship?

The instrument also measured several variables that were expected to influence people's news use but were not the central focus of this study. These included prior issue-related news exposure, changes in the subject's position on the issue, familiarity with the news events being reported, and personal salience of the news (Table 14). Finally, the experiment included a collection of demographic items that mirror those used in the survey, including education, gender, age, sex, and race/ethnicity.

Table 14. Control variables

Have you always held the same position regarding this issue, or has your opinion changed over time?
In the past 12 months, how much have you heard or read about the issue?
I have heard about this news before/I learned something from this news report
I expect the news in this report could affect me personally

Experiment hypotheses

The experiment complements the survey, providing another opportunity to test the hypotheses described in Chapter 2. The hypotheses that follow are, like those identified in the previous section, derived from my initial claims, but are more narrowly-defined to reflect the information about individual exposure decisions collected in the experiment.

- H1c. The more viewpoint-reinforcing information a news item contains, the more likely an individual will be to look at it.**
- H1d. The more viewpoint-reinforcing information a news item contains, the more time an individual will spend reading.**
- H2b. The presence of viewpoint-challenging information does not influence the likelihood that a nonconservative subject will read a news item.**
- H2c. The presence of viewpoint-challenging information does not influence the time that a nonconservative subject will spend reading.**
- H3b. The presence of viewpoint-challenging information reduces the likelihood that a conservative subject will read a news item.**
- H3c. The presence of viewpoint-challenging information reduces the time that a conservative subject will spend reading.**
- H4b. Individuals active in issue-based activism will be less likely to examine a news item with which they disagree.**

- H4c. Individuals active in issue-based activism will spend less time reading a news item with which they disagree.**
- H4d. Individuals active in religious social networks will be less likely to examine a news item with which they disagree.**
- H4e. Individuals active in religious social networks will spend less time reading a news item with which they disagree**

Hypothesis H5 does not have any implications for the experiment.

Implementation

I collaborated with a programmer, a graduate student in computer science named Sam King, to create this software, which was written using a combination of PHP, Perl and JavaScript, with a MySQL database for storage. The system included several key components (see Table 15). I specified what operations the software would perform, the inputs it would accept, and the output it would generate. The programmer was responsible for creating code that would function to these specifications. The programmer and I shared responsibility for crafting the user interface and navigation tools, and for identifying and correcting errors in the software. Initial coding was completed over a two-month period, with testing and minor revisions taking an additional month.

Table 15. Software component overview

Email collection: Web page to which volunteers would submit their email address, linked to a Perl script used to record the addresses and send notifications regarding the number of registered volunteers.
Database set-up: Perl scripts used to initialize databases for storing questions and responses.
Registration: Perl script used to add users to the database, and to email access information to subjects.
Reminders: Perl script used to send email reminders to subjects who had not completed the experiment after a specified amount of time. Email addresses could be automatically purged from database after sending reminder.
Experiment administration: Web pages using PHP and JavaScript to present questions and news links, and record answers and usage information.
Google News screenscraper: Perl script that would extract individual news items and produce an RSS feed based on a Google News query. Note that this was done with permission from Google News.
Report generation: Perl script used to generate a text file containing data collected for all subjects.

There were a few technical restrictions constraining use of the system.

Participants were required to enable cookies so that the site software could keep track of their progress through the experiment, and their web browser had to allow pop-up windows from the site. As a consequence, some volunteers could not, or would not, participate. For example, WebTV users could not complete the experiment because the browser does not provide industry-standard pop-up support. A few volunteers indicated that they were unwilling to allow the system to place cookies on their computer, and so they declined to participate.

As indicated in the administration section above, the system automatically selected relevant news results recently published on the web. To accomplish this, the system used Google News, a real-time news aggregation service that provides results from an estimated 4,500 sources.^{vii} A second programmer, Soo-yeong Hwang, built an application, called a screenscraper, to retrieve information about the relevant stories from the Google News web site. The screenscraper presented itself to the Google servers like

^{vii} This was done with Google's permission.

any other browser. It would request data from the server using a URL with query parameters containing the search string. For purposes of this study, the screenscraper used one of three query strings that corresponded to the three topics from which subjects could choose and that restricted results to sources publishing in the United States. Upon receiving the results, the software parsed the page, isolating the individual stories and generating RSS-format output that could be presented to subjects.

Testing and validation

The online experiment underwent four rounds of testing. In the first round I focused on how people responded to the system and the questions with an eye toward reducing ambiguity and confusion. In this stage, I had a dozen friends and family complete the study using a talk-aloud protocol, followed by brief interviews. This lead to numerous changes in the system's interface and the question wording. The second and third rounds provided additional usability testing and preliminary validation of the instrument. These tests were conducted with the assistance of graduate students in the School of Information, 16 in the doctoral program and 18 in the Master's degree program. These tests led to further refinements in the software, and the data were used to test the viability of the analytic techniques and the magnitude of the effect. The fourth and final round was a large-scale pilot, administered to 197 subjects recruited via an email sent to a separate AlterNet email list. I used this data to finalize the selection of topics, choosing the three most popular of several high-profile issues. Analyses of pilot data yielded significant model coefficients despite the small sample size, confirming that the sample size would be adequate.

After stripping identifying information from registration data I discovered that four subjects signed up for both the pilot and the final study, and that at least two of these individuals completed the study twice. Since the identifying information had been

removed from the results data, I was unable to remove these subjects from the analyses. I have assumed that this small number of repeat participants will not significantly influence the results

Conclusion

The methodologies described in this chapter provide a means of testing the hypotheses regarding selective exposure to political information posited in Chapter 2. The resultant data provide evidence that individuals seek viewpoint-reinforcement more commonly and more actively than they avoid viewpoint-challenging information. The next two chapters describe these results in more detail. Chapter 4 deals with the analysis of the survey data, and Chapter 5 reviews the results of the experiment.

CHAPTER 4

SURVEY ANALYSIS

This chapter describes the analyses and findings of a 2004 nationally-representative telephone survey of 1510 adult Americans on the topic of online news use. First, I briefly examine respondents' stated preferences regarding news bias. The data suggest that most individuals prefer sources that are neutral, but a substantial number say they prefer viewpoint-challenging sources. The minority who state a preference for biased sources are demographically distinct in several regards. Next, I look at the types of sources online news users are turning to for political information. I examine whether these individuals, who have easy access to a range of ideologically-biased sources, are using online alternatives as frequently as they use more balanced mainstream news sources, and consider whether those who do make use of alternatives are abandoning mainstream sources. The data show that individuals, even those who are actively aware of partisan news sites, are not abandoning the mainstream news media for online alternatives. Next, I consider whether, when selecting among strictly biased sources, individuals use viewpoint-reinforcing sites exclusively. The data suggest that though people with strong political viewpoints are motivated to seek out support, a significant number of partisans also seek exposure to challenging information. I conclude with a series of regression analyses examining the factors associated with exposure to consonant and dissonant arguments. These analyses suggest that use of the Internet and online news is associated with increasing familiarity with consonant *and* dissonant information.

Selectivity preferences

Before examining people's use of political information, it is useful to understand how they perceive their preferences. Do people consciously value exposure to other opinions, or is homogeneity their stated preference? If it is the latter, this may help explain why it is so widely accepted that people are actively filtering out challenging viewpoints on the Internet and elsewhere, despite the lack of consistent empirical evidence. Whether people act on the preference they espouse is a separate question, which I address in subsequent analyses.

The survey asked individuals to indicate whether they preferred sources that shared their point of view, challenged their point of view, or had no point of view. The sample was split so that we could ask this question in two different ways. In one version, respondents chose between sources that shared their point of view and those that did not have a particular point of view. In the other, respondents had a third choice: sources that challenged their point of view.

In both versions of the question most respondents reported that they prefer unbiased sources (Table 16). When allowed to state a preference for challenging information fewer subjects indicated a preference for shared or neutral sources, and as a result the percentage preferring shared and challenging sources was almost equal.

Table 16. Respondents' preferences regarding news source bias

	Battery 1	Battery 2
SHARE my political point of view	27%	22%
DON'T HAVE a political point of view	61	50
CHALLENGE my political point of view	N/A	18
Don't know/refused	12	10

Source: Pew Internet & American Life Project survey, June 2004

In terms of demographic characteristics, individuals who preferred challenging sources and those who preferred supportive sources were similar, and both differed from those who preferred neutral sources (Table 17). Individuals who preferred biased sources

were more likely to live in an urban area, to have less education, to attend religious services more frequently, and to have lower incomes. They were also more likely to be Black, and tended to be less politically moderate. Those preferring viewpoint-reinforcement, the most troubling group from the perspective of political information exposure, were disproportionately Republican, conservative, and less educated compared to the population at large (Table 18). These results suggest that while most people prefer nonpartisan news sources, a significant minority want to consider their own viewpoint when choosing where they get their news.

Table 17. Demographics of respondents with different preferences regarding news bias

	Battery 1 – Prefer...			Battery 2 – Prefer...	
	Unbiased source	Shared viewpoint	Challenging viewpoint	Unbiased source	Shared viewpoint
SOURCE					
Unweighted base	378	161	133	483	193
(n)	371	166	134	466	205
Sex					
Male	49	20	17	61	26
Female	50	24	19	62	28
Community type					
Urban	43	27	23	57	30
Suburban	54	18	17	63	26
Rural	48	25	14	64	26
Age					
18-27	47	22	26	55	37
28-39	53	26	14	66	25
40-49	53	17	17	58	29
50-58	58	21	11	73	21
59-68	47	21	18	63	28
69+	39	27	19	54	23
Education					
High school or less	42	25	21	54	33
Some college	57	20	14	65	26
College grad or more	56	19	16	70	19
Race/ethnicity					
White	52	21	16	66	24
Black	32	34	24	42	43
Hispanic	46	25	30	47	37
Other	48	24	12	61	30
Income					
Less than \$30K	42	26	23	54	33
Between \$30-\$50K	49	22	16	60	30
Between \$50-\$75K	56	18	20	71	18
More than \$75K	61	19	10	72	19
Internet experience					
Not online	42	29	19	53	32
Online in last 6 months	33	0	0	46	9
Online for about 1 year	56	12	20	29	57
Online for 2-3 years	48	20	23	55	34
Online for 4-5 years	48	22	18	63	28
Online for >6 years	57	18	16	71	20

Source: Pew Internet & American Life Project survey, June 2004

Note: Rows do not sum to 100% because some respondent refused to answer.

Table 18. Ideology and religious practices of respondents with different preferences

	Battery 1 – Prefer...			Battery 2 – Prefer...	
	Unbiased source	Shared viewpoint	Challenging viewpoint	Unbiased source	Shared viewpoint
Party Affiliation					
Democrat	50%	22%	19%	59%	29%
Independent	55	19	19	67	21
Republican	44	28	16	59	33
Other/no party	46	10	26	60	16
Political Ideology					
Very liberal	5	11	9	5	9
Somewhat liberal	23	16	20	22	19
Moderate	33	19	32	34	18
Somewhat conservative	26	27	19	25	27
Very conservative	9	20	13	9	24
Religious activity					
Don't attend worship service	55	21	16	68	25
Attend several times a year	49	23	19	65	23
Attend once a week	47	22	18	56	30
Attend daily	39	18	21	36	52

Source: Pew Internet & American Life Project survey, June 2004

Note: Rows do not sum to 100% because some respondent refused to answer.

Source selectivity

Hypothesis five asserts that individuals prefer sources that include both viewpoint-reinforcing and viewpoint-challenging information. Specifically, I claim (a) that individuals use nonpartisan sources more than they use comparable partisan alternates; (b) that when used, partisan sources are only part of a more balanced set of sources; (c) that individuals prefer viewpoint-reinforcing ideologically-oriented sources to those that lack supporting information; and (d) that individuals only seek viewpoint-challenging information when viewpoint-supporting information is also available. To test these claims I examine the sources used by those who get news online.

Though online news use appears to be growing at the expense of older news media, there is no evidence that people are abandoning mainstream news products. Among sources of online news, the sites of the major news organizations are by far the

most popular (Table 19). Fully 81% of those who count the Internet as one of their top sources of campaign news indicate that they use these sites; only 28% report using the partisan alternatives available online. Including those who consider online news a less prominent source of information, the difference is even more pronounced: 68% get news from major news organizations online versus only 13% who use the partisan alternatives.

Table 19. Percentage using each type of online news outlet for campaign information

	All Respondents	Online news users	Online news a primary source
Unweighted base (n)	1510 1510	842 817	223 214
Web site of major news organizations, such as CNN.com or MSNBC.com	40%	68%	81%
Web site of an international news site such as the BBC or al Jazeera	12	21	33
Web site of alternative news site like AlterNet.org or NewsMax.com	7	13	28
Web site of politically liberal group such as People for the American Way or MoveOn.org	7	12	25
Web site of a politically conservative group such as the American Enterprise Institute or the Christian Coalition	7	12	21
JohnKerry.com, the Democratic nominee's official site	4	6	25
GeorgeWBush.com, the president's official re-election site	3	5	24
RNC.com, the official site of the Republican National Committee	2	4	20
DNC.com, the official site of the Democratic National Committee	2	3	15

Source: Pew Internet & American Life Project survey 2004

Figure 2 presents this web-usage data visually, and shows how usage of online news compares to more traditional media. The figure includes mainstream sources,

including television, newspapers, and major new organization web sites, and the more partisan news media, including alternative news organizations' sites, political party-affiliated sites, and the ideologically-oriented sites of liberal or conservative-leaning organizations. The bars represent the percentage of respondents who indicated using the specified source at least occasionally.

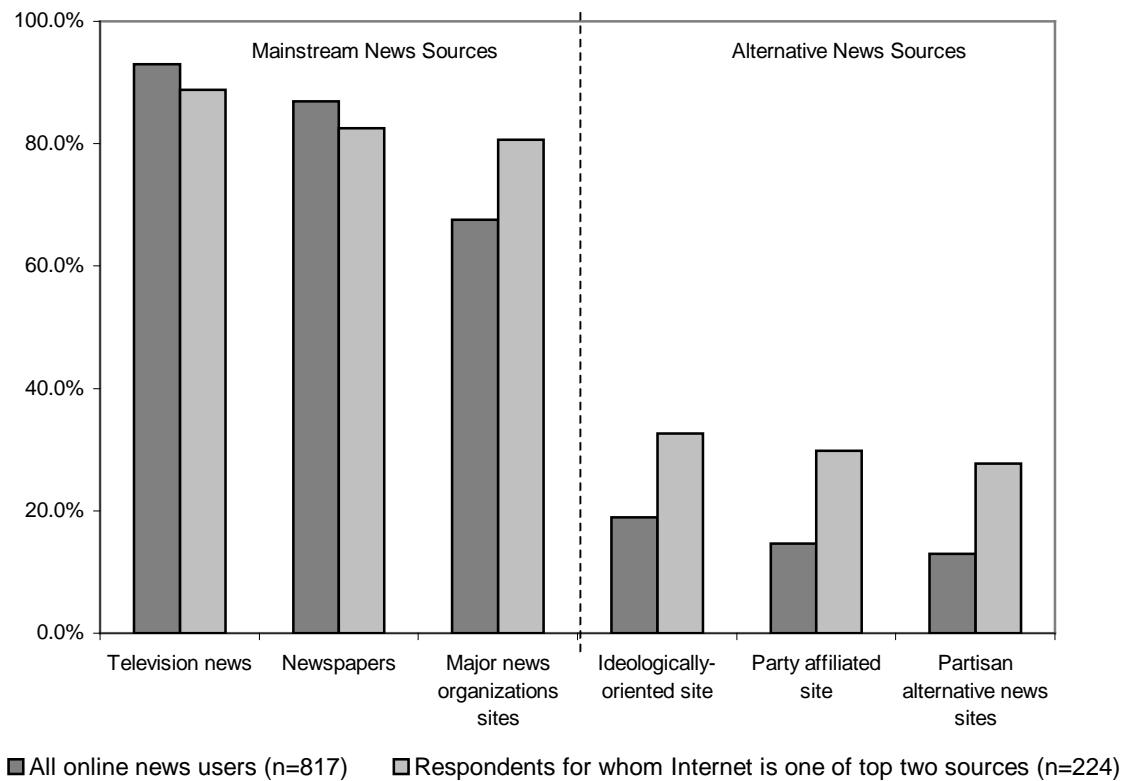
As above, results for two groups of individuals are shown. The first group includes those who answered in the affirmative when asked if they ever got political information online. The second group is defined by a more stringent requirement for inclusion; these individuals reported that the Internet was one of their top two sources of news. The usage trends are the same for the two groups, although, unsurprisingly, Internet-based news sources are more popular among members of the second group.

As predicted by the first source-related hypothesis (H5a), we can see from this figure that more online news users get their news from nonpartisan sources than from partisan alternatives available online. For example, about 93% of those who get news online watch television news and 87% read newspapers. In contrast, only 19% use ideologically-oriented sites, the most popular of the partisan information sources. Though use of offline sources is lower among those who say the Internet is a primary news source, the shift online is not a shift away from the mainstream news products. Eighty-one percent of these individuals say that they get news online from the sites of the major news organizations, up from 68% among online news users, while only 33% of these respondents reported using the sites of partisan organizations.

I performed a series of logistic regressions examining the influence of news source type on news use in order to test whether the differences in usage levels between pairs of news sources were statistically significant. (Detailed information about the procedure for doing this is included in Appendix B.) The results of these tests are shown in the table immediately following Figure 2. The overall Wald test ($\chi^2=1222.94$, $p<.001$) demonstrates that the various news sources have different usage levels. The

coefficients listed in the table show whether usage levels of the media pair indicated by the row and column are significantly different. For example, the proportion of respondents who use television news is significantly different than the proportion that use partisan news sites, as shown by the last number in the left-most column of coefficients. On the other hand, usage levels for party-affiliated and partisan news sites are not significantly different, as shown by the last coefficient on the right. Speaking broadly, the important result here is that mainstream news sources are used significantly more frequently than their alternative counterparts. Thus, I conclude that even among those with relatively easy access to partisan information, the most commonly used sources of news are the more balanced news outlets. These results provide evidence that most individuals prefer nonpartisan sources over partisan alternatives (H5a), and do not intentionally exclude other viewpoints through their choice of news outlets.

Figure 2. Comparing use of mainstream and alternative news outlets



	TV News	Newspaper	News Site	Ideo. Site	Party Site
Newspaper	-0.69***				
News Site	-1.85***	-1.16***			
Ideological	-4.05***	-3.35***	-2.20***		
Party site	-4.36***	-3.66***	-2.50***	-.31	
Partisan news site	-4.49***	-3.80***	-2.64***	-.44***	-.13

Source: Pew Internet & American Life Project survey, June 2004.

Note: Significance denotes probability that the proportion of online news users using the specified source type is different than the proportion using the reference category, indicated by the column heading. Statistical tests are based on GEE analysis to control for repeated subject measures, using Bonferroni adjustment for multiple comparisons.

* p<.05 ** p<.01 *** p<.001

Though comparatively small, the number of individuals using partisan sources is nontrivial. About one third of respondents for whom the Internet was a primary news source reported using each of the three sources about which we asked. The question, then, is whether individuals are substituting these more partisan outlets for the mainstream news media, or if the two types of sources are complementary. To assess this

question, I examine the extent to which partisan news users also reported obtaining news from mainstream news media. These individuals have successfully identified a source of partisan political information, and could therefore more easily abandon use of the more balanced mainstream.

The results are shown in Table 20. Proportions are reported using 95% confidence intervals instead of sample statistics in order to estimate the prevalence of use within the overall population of American adults. The data are consistent with the hypothesis that those who use partisan sources also use mainstream sources; this holds true in almost every case. The vast majority of individuals who use online partisan news sources also use less partisan sources such as newspapers, television, or web sites of the major news organizations, confirming hypothesis H5b. Nearly every one of these individuals had used at least one of these three sources.

Table 20. Use of mainstream news outlets by alternative news users

Source used	(n)	Newspaper	Television	Web site of a major news organization	At least one mainstream source
Alternative news site	(109)	78% – 92%	78% – 92%	85% – 96%	97% – 100%
Ideologically-oriented site	(164)	80 – 91	85 – 94	78 – 90	96 – 100
Party-affiliated site	(128)	85 – 96	85 – 96	74 – 88	95 – 100

Source: Pew Internet & American Life Project survey, June 2004.
Note: 95% confidence interval shown.

Table 21 compares individuals' use of partisan web sites with their levels of partisanship. This allows me to examine the extent to which supporters of each candidate use sites that support and challenge their viewpoint. Hypothesis H1b predicts that when selecting among one-sided partisan sources, individuals' will tend to use sources that support their viewpoint more than those that do not.

The support for this hypothesis is mixed. First, note that undecided voters' use of candidate web sites provides a useful baseline, showing relatively uniform usage levels across the different site types. In terms of support-seeking behavior, the data show that

the stronger an individual's preference for a candidate, the more likely s/he is to have visited a site supporting this candidate. For example, strong Bush supporters were more likely to have visited a Republican site than their less partisan counterparts ($p < .05$).^{viii} Similarly, strong Kerry supporters used sites of the Democratic Party more often than weaker supporters ($p < .05$). On the other hand, the data suggest that strength of partisanship may be *positively* related to use of viewpoint-challenging sites. The percent of strong Bush supporters who reported using a democratic site was larger than the percent of weak Bush supporters, though the difference was not significant. Strong Kerry supporters were even more likely to have used viewpoint-challenging sites. They reported using a conservative site more often than weak supporters (though again the difference was not significant after adjusting for the multiple comparisons), and were about as likely as *strong Bush supporters* to use these conservative sites.

Table 21. Partisanship and partisan site use among Internet users

	(n)	Use Liberal site	Use Democratic site	Use Conservative site	Use Republican site
Strong Bush	304	4.9%	4.3%	14.7%	15.1%
Weak Bush	142	6.4	2.1	9.9	4.9
Other	96	10.5	6.3	7.4	3.2
Weak Kerry	263	12.9	10.2	7.6	6.1
Strong Kerry	138	20.9	20.9	13.0	5.8
Undecideds	59	5.2	4.6	5.2	2.9

Source: Pew Internet & American Life Project survey, June 2004.

The tendency of strong democrats to look at conservative sites provides evidence for another hypothesis. Hypothesis H5c asserts that individuals only use dissonant information sources if they also use sources of consonant information. To assess this hypothesis, I consider the relationship between the use of viewpoint-supporting and

^{viii} Significance level of proportion difference after employing Bonferroni adjustment for multiple comparisons.

viewpoint-challenging party-affiliated sites. As shown in Table 22, almost no one visited the site of a candidate they opposed without visiting their favored candidate's site as well.

Table 22. Use of viewpoint-challenging sites by users of viewpoint-supporting site

	(n)	Percent of those who used preferred candidate's site who also used opposing candidate's site	Percent of those who did <i>not</i> use preferred candidate's site but did use opposing candidate's site	Chi-square	df
Kerry Supporters	(376)	40.0	0.9	115.45***	1
Bush supporters	(376)	20.4	2.1	33.062***	1

Source: Pew Internet & American Life Project survey, June 2004.
 * p<.05 ** p<.01 *** p<.001

In terms of their source selectivity, online news users are not employing the control afforded by the medium to exclude sources representing other viewpoints. To the contrary, the vast majority of these individuals continue to rely on the less-partisan products of major news organizations for their information. Furthermore, when choosing among exclusively partisan sources, such as the sites of the major U.S. political parties, many individuals opt to view content generated by both sides.

Content selectivity

Although there is little evidence that individuals are selecting news sources that systematically screen out other perspectives, it is still possible that partisan selectivity is influencing individuals' acquisition of information online. It may be that people prefer the mainstream news media for reasons unrelated to the mix of viewpoints they represent, and that they are using technology to enhance their ability to avoid viewpoint-challenging information on a story-by-story basis. To examine this possibility, let us turn our attention from the sources people use to the arguments with which they are familiar.

The survey asked respondents to indicate their familiarity with eight opinion statements about the leading candidates in the 2004 presidential election. Table 23 shows

the percent of respondents who recalled hearing these statements either frequently or sometimes.

Table 23. Percentage of respondents who have heard arguments for and against each candidate

	Heard this argument frequently	Heard this argument sometimes
Pro-Bush arguments		
George Bush is a stronger leader than John Kerry in the war on terrorism	42%	28%
John Kerry changes his positions on the issues when he thinks it will help him win the election	42	28
The Bush administration's policies have helped the economy begin to recover	39	37
John Kerry has a history of accepting money from special interest groups	16	33
Pro-Kerry arguments		
The Bush administration misled the American public about the reasons for going to war about Iraq	74%	20%
Some Bush administration policies are a threat to basic civil rights and civil liberties	30	32
John Kerry has a better strategy than George Bush for creating peace in Iraq	20	33
John Kerry will end special treatment for corporations and wealthy Americans	18	32

Source: Pew Internet & American Life Project survey, June 2004

Table 24 shows that overall supporters of both candidates knew more on average about their preferred candidate than about the challenger. This suggests a relationship between partisan preferences and individuals' exposure to campaign information.

Table 24. Levels of consonant and dissonant information exposure for supporter of both candidates

	(n)	Number of consonant arguments heard		Number of dissonant arguments heard		t	df
		Mean	(s.d.)	Mean	(s.d.)		
Bush supporters	(694)	3.04	(1.074)	2.41	(1.193)	14.171***	693
Kerry supporters	(676)	2.83	(1.057)	2.33	(1.359)	10.537***	675

Source: Pew Internet & American Life Project survey, June 2004.
 * p<.05 ** p<.01 *** p<.001

In light of this, the question is, what mechanisms contribute to creating the gap between exposure to viewpoint-supporting information and viewpoint-challenging information? And will new technologies cause this gap to grow? I have suggested that although individuals do seek support, they do not actively screen out all dissonant information. On this view, I predict that individuals who have more control over their information diet will be familiar with more of the arguments supporting their position (H1a), but the influence on exposure to viewpoint-challenging information will be slight. Among nonconservatives, I do not expect exposure control to be correlated with the number of opinion-contrary perspectives with which an individual is aware (H2a). Conservatives, and those who frequently engage in religious activities, however, are expected to be slightly less aware of challenging arguments (H3a, H4a). There are numerous other factors that are expected to influence familiarity with political arguments, which must be controlled when testing these predictions.

To look at what accounts for difference in voters' exposure to political arguments, I constructed a series of regression models of argument familiarity. As reported in Chapter 3, the distribution of argument familiarity varied depending on which candidate a voter supported, so Bush and Kerry supporters were treated separately. For each group of supporters, there were two types of models, one predicting familiarity with viewpoint-supporting arguments, and the other predicting familiarity with viewpoint-challenging

arguments.^{ix} Each of these four models (two supporter groups by two types of exposure) was constructed in two stages. First, I regress exposure on several potentially influential variables that were unrelated to respondents' control over their information environment. Second, I add the Internet factors, which are expected to enhance information exposure control.

Factors predicting similar changes in consonant and dissonant exposure

The results of the first stage models are shown in Table 25 and Table 26. These models explained between 20% and 25% variation in respondents' argument familiarity. Consistent with prior research, I found that several factors are associated with increased exposure to both types of arguments. For Bush and Kerry supporters, education, age, political enjoyment (one of the measures of open-mindedness), and following the campaign closely all have significant positive coefficients in the models of the two kinds of exposure. There were a few instances where factors influenced consonant and dissonant information exposure differently. For example, men were more likely than women to be familiar with the arguments supporting their preferred candidate, but there was no gender effect on exposure to challenging arguments. None of the factors I examined, however, were associated with a simultaneous increase in consonant and decrease in dissonant information exposure. These results support the baseline

^{ix} Although OLS regression assumes that the dependent variable is continuous and unbounded, the exposure scores used here range from one to four. There are several reasons that linear regression is employed despite this. First, the residual diagnostics suggest that the relevant regression assumptions have been met. Second, though there is a cut off on the dependent variable, it is not right-censored data in the traditional sense. Had the scale been based on more items, individuals who did not receive the maximum score might also have scored higher. Finally, tobit analyses, which would be appropriate if the data were right-censored, yield comparable results; most importantly, the overall effect of Internet use was the same in the OLS and tobit models.

assumption that many factors influence consonant and dissonant information exposure similarly.

Religious service attendance, however, was not found to have a significant influence on exposure. The variable did not improve the overall fit of any of the models, and was dropped from the analysis. Thus, hypothesis H4a is rejected.

Table 25. Models of exposure to consonant and dissonant information – Bush supporters

	<u>Bush supporters</u>			
	Consonant Exposure Model 1		Dissonant Exposure Model 1	
	Coefficient (s.e.)	β	Coefficient (s.e.)	β
Decides quickly	-.037 (.047)	-.029	.025 (.054)	.017
Reads a lot	.104* (.046)	.084	-.008 (.053)	-.006
Information causes indecision	-.029 (.035)	-.030	.030 (.041)	.028
Seldom changes mind	.076 (.041)	.066	-.047 (.048)	-.037
Enjoys politics	.183*** (.043)	.168	.149** (.050)	.122
Education	.123** (.047)	.095	.231*** (.055)	.159
Age	.011*** (.002)	.177	.010*** (.003)	.145
Sex	.163* (.075)	.076	.162 (.087)	.068
Hispanic	-.106 (.149)	-.026	-.110 (.173)	-.024
Black, not Hispanic	-.834*** (.237)	-.123	-.251 (.276)	-.033
Number of offline news sources used	.071* (.031)	.082	.086* (.036)	.088
Following campaign closely	.342*** (.088)	.154	.554*** (.102)	.222
Strong candidate support	.202* (.080)	.092	.077 (.093)	.031
Constant	.980** (.283)		.778* (.329)	
R ²	.253		.200	
(n)			(648)	

Source: Pew Internet & American Life Project survey, June 2004.

* p<.05 ** p<.01 *** p<.001

Table 26. Models of exposure to consonant and dissonant information – Kerry supporters

	Kerry supporters			
	Consonant Exposure Model 1		Dissonant Exposure Model 1	
	Coefficient (s.e.)	β	Coefficient (s.e.)	β
Decides quickly	.028 (.046)	.023	.098 (.058)	.061
Reads a lot	.123* (.050)	.099	.089 (.063)	.055
Information causes indecision	.018 (.035)	.019	.057 (.045)	.047
Seldom changes mind	-.017 (.037)	-.017	-.073 (.047)	-.057
Enjoys politics	.061 (.042)	.063	.225*** (.053)	.178
Education	.173*** (.049)	.140	.162* (.062)	.101
Age	.009*** (.002)	.154	.019*** (.003)	.253
Sex	.219** (.080)	.104	.100 (.101)	.037
Hispanic	.307** (.117)	.102	.131 (.148)	.034
Black, not Hispanic	-.329** (.104)	-.121	-.455** (.133)	-.129
Number of offline news sources used	.053 (.030)	.067	.052 (.038)	.050
Following campaign closely	.346*** (.097)	.150	.376** (.123)	.126
Strong candidate support	.087 (.087)	.039	-.089 (.110)	-.031
Constant	1.287*** (.280)		-.023 (.356)	
R ²	.201		.236	
(n)			(632)	

Source: Pew Internet & American Life Project survey, June 2004.
 * p<.05 ** p<.01 *** p<.001

Internet access associated with increased exposure to both types of information

The online news environment affords individuals a wide array of news outlet choices, and many mechanisms for finding and filtering information for which there is no offline equivalent. To examine the influence of these capabilities, I add two measures of Internet use, online news use and experience using the Internet, to the models described above.^x I also tested the significance of high-speed access, but omitted it from the final model because it is highly correlated with Internet experience, which has greater

^x I excluded four respondents from the analysis who reported using the Internet for 30 years or more. Construction of the Internet infrastructure did not begin until 1969 (Abbate 1999: 64), and the network did not achieve widespread use until much later.

explanatory power. All variables from the first model have been retained, including education, news surveillance levels, and the five indicators of open mindedness.

The results are shown in Table 27 and Table 28. Adding the Internet factors produced a statistically significant improvement in three of the four models, with the expanded models explaining up to 27% of the variation. Only Bush supporters' exposure to dissonant information was unaffected. As the positive significant coefficients indicate, online news use is broadly associated with increasing exposure to both types of information. Among Bush supporters, the number of years a user has been online is positively correlated with familiarity with viewpoint-reinforcing arguments. For Kerry supporters, the frequency of use is the significant predictor, and it is associated with an increasing familiarity with both viewpoint-reinforcing and viewpoint-challenging arguments.

In sum, the hypothesis that individuals are using technology-afforded control to increase their exposure to consonant information is supported, confirming hypothesis H1a, but support for the predictions regarding dissonant information exposure is mixed. Contrary to hypothesis H2a, nonconservatives saw an *increase* in exposure to other viewpoints as their exposure control increased. Hypothesis H3a was also disconfirmed: conservatives saw *no change* in their exposure to opinion-contrary information. It is interesting to note, however, that the relationship between conservatives and nonconservatives is consistent with the prediction. Compared to conservatives, nonconservatives who had more control over their news diet saw a relative increase in viewpoint-challenging exposure.

Table 27. Influence of Internet use on exposure – Bush supporters

	<u>Bush supporters</u>			
	Consonant Exposure Model 2		Dissonant Exposure Model 2	
	Coefficient (s.e.)	β	Coefficient (s.e.)	β
Decides quickly	-.037 (.046)	-.029	.027 (.054)	.019
Reads a lot	.087 (.046)	.071	-.015 (.054)	-.011
Information causes indecision	-.005 (.035)	-.005	.039 (.042)	.037
Seldom changes mind	.075 (.041)	.066	-.046 (.048)	-.036
Enjoys politics	.192*** (.043)	.177	.146** (.051)	.120
Education	.056 (.050)	.043	.208*** (.059)	.143
Age	.014*** (.002)	.215	.011*** (.003)	.158
Sex	.135 (.075)	.063	.149 (.088)	.062
Hispanic	-.086 (.148)	-.021	-.110 (.173)	-.024
Black, not Hispanic	-.788** (.235)	-.116	-.234 (.276)	-.031
Number of offline news sources used	.057 (.031)	.066	.081* (.037)	.084
Following campaign closely	.311*** (.087)	.140	.536*** (.103)	.215
Strong candidate support	.178* (.079)	.081	.067 (.093)	.027
Internet experience	.032** (.010)	.133	.007 (.012)	.024
Frequency of online news use	.036 (.029)	.048	.038 (.034)	.045
Constant	.790** (.284)		.719* (.334)	
R ²		.271		.202
ΔR^2 after adding Internet factors		.017**		.003
		(F=7.523, df1=2, df2=631)		(F=1.023, df1=2, df2=631)
(n)			(648)	

Source: Pew Internet & American Life Project survey, June 2004.

* p<.05 ** p<.01 *** p<.001

Table 28. Influence of Internet use on exposure – Kerry supporters

	<u>Kerry supporters</u>			
	Consonant Exposure Model 2		Dissonant Exposure Model 2	
	Coefficient (s.e.)	β	Coefficient (s.e.)	β
Decides quickly	.042 (.046)	.034	.115*** (.058)	.072
Reads a lot	.118* (.050)	.094	.085* (.063)	.053
Information causes indecision	.020 (.035)	.021	.058 (.045)	.048
Seldom changes mind	-.013 (.037)	-.014	-.070 (.047)	-.054
Enjoys politics	.051 (.042)	-.053	.215 (.053)	.170
Education	.149** (.053)	.121	.141*** (.067)	.088
Age	.010*** (.002)	.163	.020* (.003)	.258
Sex	.202* (.079)	.096	.080*** (.101)	.029
Hispanic	.320** (.117)	.107	.140 (.149)	.036
Black, not Hispanic	-.341** (.104)	-.125	-.474 (.132)	-.134
Number of offline news sources used	.046 (.030)	.058	.043*** (.038)	.042
Following campaign closely	.311** (.097)	.135	.335 (.123)	.112
Strong candidate support	.098 (.087)	.044	-.078** (.110)	-.027
Internet experience	-.006 (.011)	-.027	-.013 (.013)	-.043
Frequency of online news use	.094** (.032)	.124	.117** (.040)	.117
Constant	1.251*** (.282)		-.048 (.358)	
R ²		.213		.246
ΔR² after adding Internet factors		.011* (F=4.477, df1=2, df2=615)		.010* (F=4.287, df1=2, df2=615)
(n)			(632)	

Source: Pew Internet & American Life Project survey, June 2004.

* p<.05 ** p<.01 *** p<.001

Discussion and conclusion

Self-reported preferences, news media use, and argument repertoires all support my assertion that people desire exposure to multiple opinions and the rationales that support them (see Table 29 for a summary of results). The findings presented here suggest that people are *not* using the unprecedented opportunity to screen out other perspectives. Individuals who get political news and information online continue to use sources that represent a diverse range of political opinions, and they are in many cases

more knowledgeable about the arguments circulating in the media on both sides of an issue. Even among conservatives, a group that has been shown to engage in selective avoidance of viewpoint-challenging information in the past, going online is uncorrelated with exposure to other opinions.

Table 29. Summary of survey results

	Hypothesis	Supported?	Page
H1a.	Individuals who have more control over their news diet will have greater familiarity with the arguments supporting their viewpoint than those with less control.	Yes	88
H1b.	Individuals who use online partisan sources will prefer those that support their viewpoint to those that do not.	Mixed	80
H2a.	Nonconservatives who have more control over their news diet will have the same level of familiarity with the arguments challenging their viewpoint as those with less control.	No (more)	81
H3a.	Conservatives who have more control over their news diet will have slightly less familiarity with the arguments challenging their viewpoint than those with less control.	No (same)	88
H4a.	Individuals active in religious social networks will have slightly less familiarity with opposing opinions than those who are less active.	No	86
H5a.	Online news users will prefer nonpartisan sources to otherwise comparable partisan sources.	Yes	78
H5b.	Individuals who use online partisan sources will generally also use sources that provide more balance.	Yes	80
H5c.	Individuals who use online partisan sources will only use viewpoint-challenging information if they also use viewpoint-supporting information.	Yes	81

I should also note that by focusing on self-reported familiarity with the arguments, I have excluded from the analysis a number of interesting and important considerations. First, I cannot differentiate between selective exposure and selective retention using these data. Though this is a limitation, it does not substantially affect the conclusions regarding the role of the Internet in shaping political debate. The Internet is not reducing people's perceived exposure to political arguments with which they disagree. Second, the data do not allow me to assess individuals' comprehension or evaluation of the political information. Recalling exposure to the arguments I asked

about does not mean that the individual has critically engaged the content. Exposure is necessary but not sufficient to ensure that an individual integrate the arguments into their broader political understanding. Finally, these data do not allow me to assess the effects of exposure on political opinion. Specifically, I am unable to determine whether the purposeful exposure to dissonant information as well as consonant information changes the strength or direction of individuals' attitudes toward the candidates.

These findings are encouraging; however, it may be that online news users simply do not have as much control over their exposure as I have suggested. Chapter 5 looks at the decisions that individuals make when choosing among articles with differing amounts of viewpoint-reinforcing and viewpoint-challenging information. These results will help us understand the extent to which individuals exhibit a ideologically-motivated bias in their selection of specific news content, and will give some insight into how they may behave in a future information environment that affords more control than is available today.

CHAPTER 5

EXPERIMENT

The online news environment has made it more feasible than ever before for people to limit their exposure to viewpoints that differ from their own. The survey data, however, shows that Americans who use the Internet to get their news are not experiencing less exposure to political ideas that differ from their own, and that for some, use of the technology is associated with increased familiarity with other viewpoints. These findings run counter to predictions that the Internet would encourage political isolation and balkanization.

It would be premature, however, to conclude that new information technologies pose no threat to political communication: they may yet be used to filter out viewpoint-challenging information. Though individuals are not using the technology to enhance their ability to engage in ideologically-motivated selective exposure today, the analyses presented in Chapter 4 do not address the reasons for this behavior. One possibility is that people have no aversion to political ideas that differ from their own. In this case, I would argue that control-enhancing technologies would not inherently be associated with a fundamental shift in exposure to political difference. On the other hand, contemporary practice may be substantially constrained by limitations, both technical and social, which make ideological filtering infeasible. Given more control, people might exhibit different exposure preferences—such as a desire to filter out other viewpoints—than are currently in evidence. Distinguishing between these two explanations for current behavior is critical to our ability to predict the future effect of online news use on political opinion and democratic deliberation.

I designed a web-based experiment in order to understand better individuals' underlying preferences regarding ideological information exposure, and what they might do under conditions of more effective exposure control. As described in Chapter 3, this experiment presents subjects with a politically diverse set of news stories, and measures their perceptions and use of the content of these items. The following section provides an overview of the demographic characteristics of the experimental subjects. Next, I examine the factors that influence individuals' overall news exposure. I find that individuals who are politically active and those who are more liberal tend to read more news items than others, even after controlling for significant demographic characteristics such as age and education. Finally, I consider subjects' perceptions regarding the political content of news stories, and use statistical techniques to examine the extent to which these perceptions influence the use of individual stories. I find that perceptions of the political viewpoints represented significantly influences usage patterns. Consistent with the survey findings, subjects exhibited a preference for examining stories that contain viewpoint-reinforcing information; however, they also exhibited a relatively weak aversion to viewpoint challenge. The slightly lower likelihood of reading news items containing challenging information is offset by increased attention to those items that were read. Nearly every subject encountered some amount of challenging information, and the more contrary the information, the more time they spent reading. I conclude with a discussion of the implications of these findings.

Data

All subjects, whether recruited through liberal or conservative sites, were similar in terms of a few key demographics. Both groups ranged in age from 18 to about 80, with average age of just under 50 years (see Table 30 for details). More than 85% were white, and less than 5% identified as Black or Hispanic. Participants in this study were

highly educated, with more than half having completed a college degree. There were, however, several demographic differences as well. Those recruited via the conservative site were disproportionately male, and those recruited via the liberal site disproportionately female, compared to the national average. Conservative-site recruits tended to be less educated: slightly more than half had completed a college degree compared to about 7 in 10 of those recruited from the liberal site. They also tended to be slightly wealthier, with about one in six reporting an income under \$30,000 while more than one-quarter of the liberal site recruits reported an income in this range.

As expected, these groups also differed significantly in terms of their political affiliation and ideology. More than half of those recruited from the liberal site identified themselves as Democrats, with very few Republicans. This pattern was reversed among conservative site recruits. A more pronounced pattern is evident when looking at political ideologies: about 9 in 10 identified with the ideology corresponding to that of the recruiting news site. It is also noteworthy that participants were more strongly committed to their particular political ideologies than most Americans. Three-fifths described themselves as strong partisans, about three times the proportion that identified as such in the telephone survey described in the previous chapter. In other words, subjects are using partisan news sites that favor their viewpoint.

Table 30. Subject demographics

(n)	Liberal site	Conservative site
Age - mean (s.d.) range	358 49 (14) 19 – 81	369 48 (13) 18 – 82
Male	39%	72%
Female	62	28
Race/ethnicity		
White	87%	85%
Black	1	1
Hispanic	4	2
Other	7	10
Education		
High school or less	5%	4%
Some college	26	41
College grad or more	70	55
Income		
Less than \$30K	28%	16%
Between \$30-\$50K	22	21
Between \$50-\$75K	19	27
More than \$75K	28	31
Party Affiliation		
Democrat	56%	1%
Independent	27	24
Republican	4	60
Other/no party	13	15
Political Ideology		
Very liberal	61%	1%
Somewhat liberal	28	2
Moderate	8	6
Somewhat conservative	2	32
Very conservative	1	60

Differences in overall attention to news

A variety of factors shaped these partisan news users' overall attention to the news. There were two measures of news attention: how many news items a subject read and subjects' total time (in seconds) reading those items. There was high variance in both measures. Subjects read between 0 and 5 articles - about 2 on average. Among the 67% who chose to read at least one news story, the total read time ranged from 10 seconds to about 87 minutes (5232 seconds). The average amount of time spent was 4 minutes 30 seconds, and the median time was 3 minutes 20 seconds. Only nine subjects

spent more than 16 minutes reading. I suspect that factors outside the context of the experiment (e.g., an interruption) influenced these subjects' read times. I exclude these individuals from the regression analyses in this chapter. Including them does not alter the magnitude or sign of the coefficients; it only reduces the overall fit of the model.

To examine which factors influenced subjects' news attention I specified two regression models, one predicting the number of stories read, and the other predicting the log of read time (see Table 31). I transformed read time using a log function in order to render the data more compatible with linear regression assumptions—particularly the assumption that the error term is normally distributed. Figure 3 shows read time distribution of residuals for the regression of overall read time before the transformation: the residuals are skewed, with a long tail on the right. Figure 4 shows a much more normal distribution for the residuals of the model for the transformed data.

Figure 3. Histogram of read time regression residuals

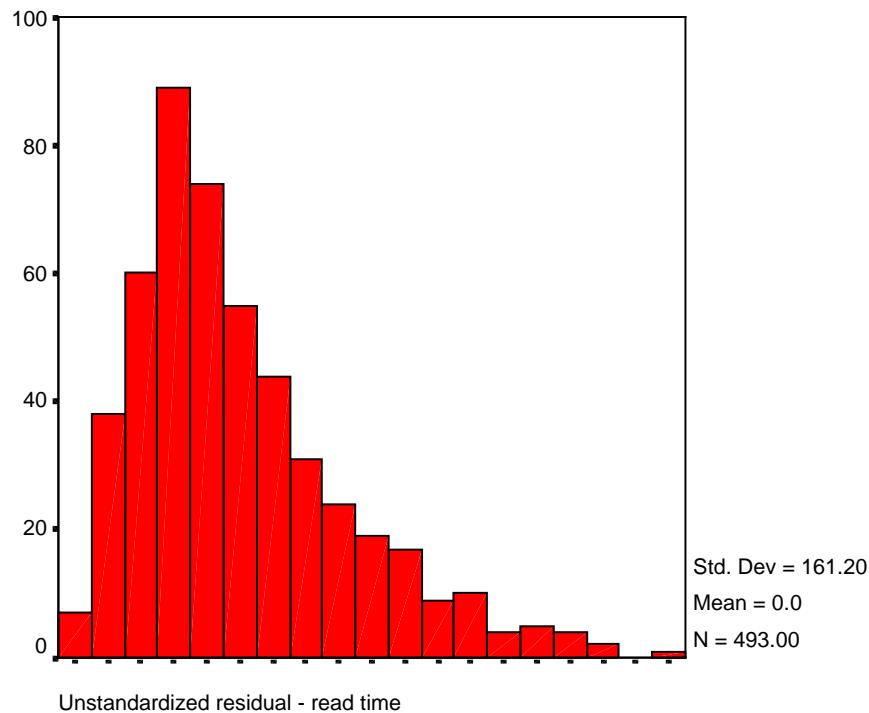
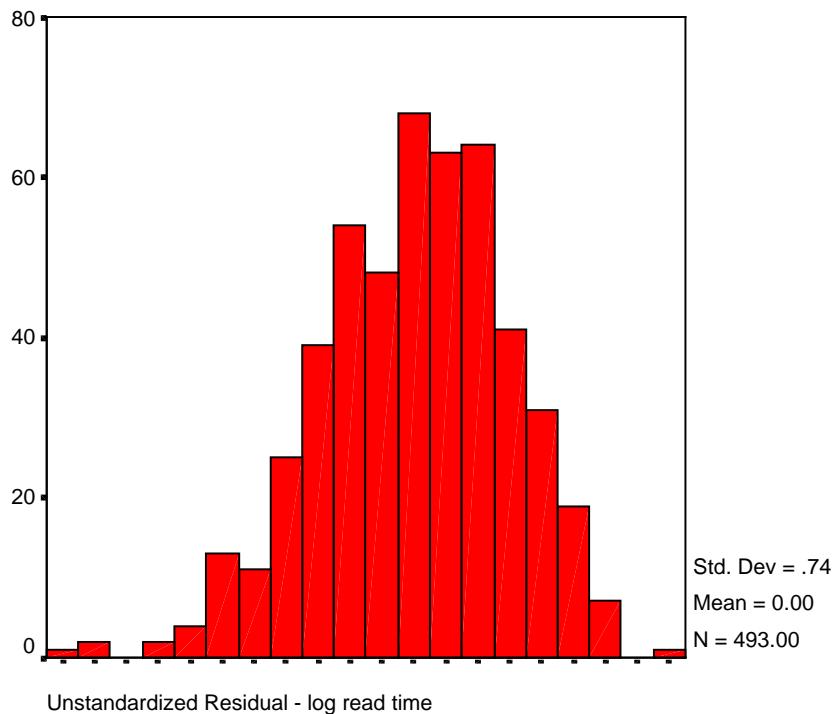


Figure 4. Histogram of log of read time regression residuals



The explanatory power of these models is limited ($R^2 = .05$ and $R^2 = .11$). This is due in part to the omission of influential variables related to the quality of the articles that were not of theoretical interest. Nevertheless, the characterization of individuals' overall news use provides context for the analyses that follow. The predictors included in the models can be divided into two categories. The first category includes demographic variables. Older Americans tended to look at fewer news items but to spend more time reading on average. For example, a typical 30-year-old would spend about 2 minutes (116 seconds) reading two stories, while an identical 50-year-old would spend about 2 and a half minutes (144 seconds) reading 1.8 stories on average. This suggests that as Americans age, their strategy for gathering political information evolves from a rapid review of many items to a more careful examination of a few. Education only influenced read time: a typical college grad typically spent three-quarters of a minute less reading than someone who only held a high school diploma (141 seconds versus 188 seconds).

The second category includes factors related to politics. Individuals who identified themselves as liberals read more stories and spent more time reading. Continuing the example, a liberal 30-year-old would spend almost three minutes reading (164 seconds for a liberal, 177 for a strong liberal)—nearly a minute longer than if he were a moderate or a conservative.

The models also included several factors pertaining to issue activity. The more news about the issue the subject had read in the past, the more news items he read, although total read time was not significantly related. According to this model, those with the lowest level of exposure would typically read about one story fewer than those with the highest. I suspect that the correlation between prior reading and the number of items read is spurious. That is, prior reading about a topic is an outgrowth of interest, which also motivates subsequent reading. This seems plausible given the evidence that topic interest and attention are positively correlated (Iyengar *et al.* 2003; Knobloch *et al.* 2003). This does not, however, explain the lack of influence of prior reading on read time. One possible explanation for this is that individuals who are well read on the topic can process relevant new articles more quickly because the information being presented is already familiar (McGraw *et al.* 1990; Fiske and Kinder 1981). These more politically sophisticated individuals focus on skimming for new information and situating it relative to their prior understanding, not on making sense of a large volume of new information.

On the other hand, more issue-related political activity was associated with more time reading, but was unrelated to the number of stories read. A highly active individual would read for about half a minute longer than one who was politically inactive (139 seconds versus 110 seconds). A possible explanation for this phenomenon is that politically active individuals read for a different purpose than individuals engaging in general news surveillance. They could, for example, spend more time reading because they are more invested in understanding and internalizing the arguments that might be useful to them in future actions (Canon 1964; Freedman 1965). All of these factors,

which are unrelated to news items' political content, underscore the fact that individual differences influence people's news reading behaviors. Age, political ideology, and issue-related activities all shape individual's attention to issue-related news.

Table 31. Factors influencing number of news items read and log of time spent reading news items (regressions)

	Number of news items read			Time spent reading news items		
	Coefficient (s.e.)	Std. Coefficient		Coefficient (s.e.)	Std. Coefficient	
Issue-related news exposure	.279*	(.123)	.088	-.006	(.075)	-.004
Issue-related political activity	.036	(.043)	.034	.059*	(.025)	.109
Stable position?	-.016	(.125)	-.005	-.117	(.075)	-.071
Age	-.011*	(.004)	-.094	.011***	(.003)	.179
Male (dummy)	-.071	(.123)	-.024	-.139	(.074)	-.089
Education	-.021	(.054)	-.015	-.096**	(.032)	-.138
Income	.044	(.029)	.059	-.019	(.017)	-.051
Strong liberal (dummy) ^a	.499*	(.244)	.153	.418**	(.153)	.254
Liberal - not strong (dummy) ^a	.372	(.265)	.088	.344*	(.165)	.157
Conservative - not strong (dummy) ^a	.013	(.258)	.003	.235	(.164)	.110
Strong conservative (dummy) ^a	.003	(.246)	.001	.131	(.157)	.078
Issue=civil rights ^b	.012	(.142)	.004	-.181*	(.084)	-.116
Issue=gay marriage ^b	.128	(.164)	.036	-.112	(.098)	-.061
Constant	1.199*	(.604)		5.279***	(.360)	
R ²		.046			.107	
(n)		(695)			(493)	

* p<.05 ** p<.01 *** p<.001

a. Reference category is moderate.

b. Reference category is social security reform.

Perceptions of ideological content

As explained in the methods chapter, subjects were asked to assess five current issue-relevant news items in terms of their ideological political content.^{xi} Overall,

^{xi} See the Chapter 3 for a description of how these variable were measured.

subjects espousing all political ideologies anticipated encountering moderate levels of supporting and challenging information in the news items presented (see Table 32), although they perceived significantly more information that challenged their viewpoint than reinforced it).^{xii}

Table 32. Overall anticipated viewpoint-reinforcing and viewpoint-challenging information

	N	Minimum	Maximum	Mean	Std. Deviation
All subjects					
Viewpoint-reinforcing information	2903	2.00	10.00	6.25	1.92
Viewpoint-challenging information	2903	2.00	10.00	7.18	1.66
Difference	$t = -17.24, df = 2,890, p < .001$				
AlterNet subjects					
Viewpoint-reinforcing information	1466	2.00	10.00	6.41	1.77
Viewpoint-challenging information	1463	2.00	10.00	7.01	1.62
WorldNetDaily subjects					
Viewpoint-reinforcing information	1437	2.00	10.00	6.09	2.06
Viewpoint-challenging information	1440	2.00	10.00	7.36	1.68
Comparison of means – AlterNet subjects versus WorldNetDaily subjects					
Viewpoint-reinforcing information	$t = 4.3751, df = 2,901, p < .001$				
Viewpoint-challenging information	$t = -5.7792, df = 2,901, p < .001$				

^{xii} This was not predicted: the hypotheses laid out in the Chapter 2 focus on individuals' exposure decisions, and do not address overall their perceptions of bias. The finding is, however, consistent with the hostile media thesis, which suggests that individuals tend to overestimate the extent to which information presented by the news media is biased against their political viewpoint (Vallone *et al.* 1985). On the other hand, it is possible that the news media presents viewpoints with which both liberals and conservatives disagree. In this case, both groups could encounter predominantly viewpoint-challenging information.

Influence of ideological content

Do expectations about the political content of news stories influence subjects' news exposure choices? One way to look at this question is to examine the subset of news items that subjects selected. If prospective perceptions of story ideology matter, then the subset will tend to contain different perceived levels of viewpoint reinforcement and challenge on average than the complete set of five stories presented.

Subjects who assessed all the news items presented (n=453) can be divided into three broad categories based on their behavior.^{xiii} Almost half the subjects (46%) disproportionately selected stories favoring their viewpoint. That is, the ratio of expected viewpoint-reinforcing to expected viewpoint-challenging information was higher in the subset of stories they selected than in the five stories overall. The next largest group, representing about a third of the subjects (33%), chose a subset of stories that was comparable to the complete set in terms of the views presented: the ratio of expected support to expected challenge was the same in the selected group. Finally, about a fifth of subjects (22%) chose a subset of stories in which the perceived proportion of viewpoint-reinforcing information was lower. The proportion of individuals selecting a more favorable subset is significantly larger than the proportion who choosing one that was relatively less favorable ($p < .001$). These results support the general expectation that ideology influences individuals' attention to news.

Preference for viewpoint reinforcement

I use regression analysis to examine how subjects take their viewpoint into account when deciding whether to read specific news items. Two measures of news use

^{xiii} Many subjects chose not to assess all five stories. I omit these individuals from this analysis because a decision not to assess may be systematically related to the subject's perception of the story.

function as the dependent variables in these analyses. First, the data collection tool tracked whether or not each subject expressed interest in reading each of the five news items. This dichotomous variable reflects the item's appeal. Subjects expressed interest in about half (52%) of the 3635 news items presented (727 subjects each selecting up to five news items). A regression on this variable is the basis for evaluating the hypotheses related to item selection. The hypotheses state that item selection is more likely when more reinforcing information is present (H1c); unaffected by the presence of viewpoint-challenging information for nonconservatives; and less likely when conservatives, issue activists, or frequent participants in religious activities perceive more challenging information (H2b, H3b, H4d).

Second, the time spent reading each item (in seconds) provides a measure of subjects' willingness to invest effort in reviewing an item. Subjects read 1442 news items, about three-quarters (76%) of those they expressed interest in reading, and spent between 1 second and 76 minutes (4,554 seconds) reading individual news items. The single highest outlier, with a read time of over 75 minutes, was excluded from this analysis. Excluding items with read times greater than 15 minutes (11 items)—as noted above, such read times are more likely the result of interruption or some other external factor—yields comparable results. The mean time reading each story was a little over two minutes (134 seconds), and the median was about a minute and a half (100 seconds). The regression model of time is used to test hypotheses related to read time. These hypotheses state that the time a subject spends reading an item is (H1d) longer when more reinforcing information is present; (H2c) unaffected by the presence of viewpoint-challenging information for nonconservatives; and less likely when (H3c) conservatives, (H4c) issue activists, or (H4e) frequent participants in religious activities perceived more challenging information.

To assess which factors influence item selection I constructed a logistic regression model, clustering the data by subject ID to account for the fact that there were repeated

non-independent observations (each subject could select up to five news items). Several types of predictors were represented in the model. Based on the hypotheses, I included subjects' perceptions of the political content, their political ideology, and their political and religious activity. I also examined the influence of interactions between news-items' political content and subjects' religious and political activity. The model also controlled for subjects' familiarity with the events reported in each news item and the personal relevance or salience of the events, as well as the issue selected, the stability of subjects' position on the issue, and subjects' prior exposure to the issue. Finally, there were demographic controls for age, education, and gender. I had complete data for 2,833 news items for this analysis. Table 33 presents the model coefficients, which correspond to the effect of each independent variable on the probability that a subject will select a news item.

Several factors unrelated to the views expressed in an item exert a significant influence on selection. Conservative subjects were less likely to select a news item on average, while those who had been following the issue most closely and who had been most active in issue-related politics were more likely to select it. These findings reflect the overall usage trends described above. It is also worth noting that individuals interested in the gay marriage issue were more likely to read a relevant story than those interested in other topics ($p=0.05$). This may reflect the high media profile of this topic at the time of the study. News related to this topic made the headlines more often than the other topics during the time that the research was conducted. As a result, familiarity with these stories may have been perceived as important both in relation to the specific topic and to news surveillance more generally.

Controlling for these factors, the perception that a news item will contain political information significantly influences the likelihood that it will be selected. As described in the methods chapter, perceptions of consonant and dissonant information were measured using a summative scale that ranged from two to ten points. The higher the

score, the more supportive or challenging the subject considered the article to be. The analysis reveals that subjects were more likely to select items with higher reinforcement scores. For example, the probability that a typical non-conservative subject would select a news item with neutral support and challenge scores of six was 67%. If the item provided strong viewpoint reinforcement, with a score of ten, the probability increased to 78%. Challenge scores, on the other hand, were negatively correlated to selection probability. The less challenging information a subject detected in a news story, the more likely s/he was to express interest in reading it, but the effect was smaller. For example, if the challenge score *dropped* by four points, to a score of two, the probability only increased to 74%.

These results support the first hypothesis, H1c, which predicted that the anticipated presence of viewpoint-reinforcing information would be positively correlated with article selection. The expectation that conservative and nonconservatives behave differently was not supported. The data show that all subjects—not just conservatives—are more likely to avoid items the more viewpoint-challenging information they contained, though this effect is much smaller than the effect of viewpoint-support. Thus, hypothesis H3b is supported and hypothesis H2b is rejected.

Issue activity and religious activity were also predicted to interact with the measure of dissonant information, but these interactions are both non-significant. The interactions were omitted from the final model because they reduced the significance of the other factors without contributing to the model's overall fit. Thus hypotheses H4b and H4d are rejected.

Table 33. Factors influencing probability of item selection (logistic regression with clustering)

	Coefficient	(s.e.)
Expected reinforcement	0.142 ***	(0.026)
Expected challenge	-0.083 **	(0.030)
Conservative? (dummy) ^a	-0.410 **	(0.135)
Issue-related political activity	0.033	(0.038)
Religious activity	0.057	(0.060)
Issue = civil rights? (dummy) ^b	0.124	(0.124)
Issue = gay marriage? (dummy) ^b	0.286	(0.149)
Familiarity with events reported	0.065	(0.038)
Salience	0.147 **	(0.049)
Prior exposure to news about this issue	0.255 *	(0.110)
Stable issue position	-0.148	(0.108)
Male (dummy)	0.032	(0.109)
Age	-0.007	(0.004)
Education	-0.014	(0.046)
Constant	-1.098	(0.591)
Observations	2833	
Wald Chi-square	97.96 (p<0.001)	
Pseudo R-square	.0407	

* p<.05 ** p<.01 *** p<.001
a. Includes weak and strong conservatives
b. Reference category is social security reform

To assess which factors influence news item read time I utilized linear regression, again employing clustering to account for the repeated measures contained within the dataset. A total of 1,069 read times were included in the analysis, representing the behavior of 488 subjects who assessed all the news items presented. The coefficients shown in Table 34 correspond to the magnitude of the change in the dependent variable, the natural log of item read time.

As before, I included many of the same theoretically interesting variables, including subjects' perceptions of views expressed in a news items, their political ideology, their political and religious activity, and the relevant interactions. The controls that were used in the model of selection were included as well. One key difference is that in this model, there were separate measures for anticipated perceptions of political content, based on the item synopses, and experience perceptions, which subjects provided

after view the news items. As I noted in the Chapter 3, these items could not be reliably combined. I also considered abandoning one of the assessments pairs, but could not do so without significantly reducing the explanatory power of the model. I even explored creating a new measure based on the maximum of either the prospective or retrospective scores, but this strategy also yielded a worse fitting model.

Some of the control factors were found to have a significant influence on read time. Age and the perception that the subject had learned something from the news item were both correlated with greater read times. These findings are consistent with the tentative explanations regarding overall read time offered above. That older Americans spend more time on individual articles may reflect a difference in their approach to news reading. Similarly, the effect of learning on read time lines up well with the earlier finding that individuals who have read more, and who therefore have less to learn, spend less time. It also supports the interpretation that individuals who are politically active read for longer because they are more invested in retaining the information they encounter. The number of stories read prior to the current item was also associated with increased read time, though the overall number had a negative influence. That is, individuals who chose to read more stories spent less time on each, but the later they read the item, the more time they spent on it. Fatigue would seem to be a likely explanation for this phenomenon. Individuals whose attitudes regarding the issue had not changed in the past year tended to spend less time reading, as did men and those with more education. Finally, those interested in gay marriage tended to spend less time on each article they chose to read. The high media profile of this topic, noted above, would suggest that these subjects were generally more familiar with the relevant issues, and therefore required less effort to process the news.

As noted above, there were two sets of predictors related to subjects' perceptions regarding consonant and dissonant information. The results suggest that subjects' expectations and the attitudes they encountered in the article (which were not highly

correlated) each had important effects. The viewpoints that subjects encountered in a news item they read significantly influenced read time even after controlling for the factors described above. On the other hand, the information that subjects anticipated encountering had no significant effect by itself, but its interaction with readers' ideology was significant.

For liberal and moderate subjects, political information was an unqualified incentive to read. The more viewpoint-reinforcing *or* viewpoint-challenging information they encountered, the more time they spent reading on average. It is also interesting to note that among these individuals, the presence of challenging information had a larger influence than supporting information on read times. For a typical non-conservative, an increase in support from average (seven) to high (ten) was associated with a 13% increase in read time (from 108 seconds to 122 seconds); a similar increase in the amount of challenging information produced a 24% increase, almost twice as large (to 134 seconds).

These results support the hypothesis H1d, which predicted that the more viewpoint-supportive information an individual encountered, the longer s/he would spend reading it. Hypothesis H2c and H3c, however, are not supported: the presence of dissonant information *was* significantly correlated with read time for both conservatives and nonconservatives. Unlike the findings regarding item selection, which suggested that individuals exhibit an aversion to challenge, the read time analysis implies no tendency for avoidance. To the contrary, individuals are willing to engage with challenging information even if it requires addition time and attention.

Though the main effects of expected viewpoint reinforcement or viewpoint challenge were insignificant, there were significant interactions with these factors. Specifically, this relationship seems to be different for conservatives and non-conservatives. For conservative subjects, *expecting* viewpoint-relevant information of either type was *negatively* correlated with read time, which appears to partially counteract the *positive* correlation between *encountered* viewpoint-relevant information and read

time. For example, a typical conservative who anticipated and experienced a story to have consonant and dissonant content scores of seven would spend about 92 seconds reading. If both *viewpoint-support* scores increased by three points while holding all other factors constant, the read time would stay the same. The positive correlation between viewpoint-challenging information and read time is not completely absent for conservatives, but it is much smaller. A three-point increase in both *viewpoint-challenging* scores yields an estimated read time of about 108 seconds, a 17% increase. Though still an increase, this effect is not as large as it was for nonconservatives. On the whole, the more challenging information an article contains, the more conservative read times drop relative to that of nonconservatives. The interaction between being conservative and expecting to encounter dissonant information, unlike the main effect of dissonant information, is in the direction predicted in hypothesis H3c.

As above, interactions between the measures of consonant and dissonant information and other the social networking factors (issue activity and religious activity) were omitted because they reduced the overall fit of the model. Thus hypotheses H4c and H4e are both unsupported.

Table 34. Factors influencing natural log of item read time (linear regression with clustering)

	Coefficient	(s.e.)
Expected reinforcement	0.023	(0.020)
Expected challenge	0.020	(0.018)
Experienced reinforcement	0.039 **	(0.014)
Experienced challenge	0.072 ***	(0.014)
Expected reinforcement X conservative	-0.065 *	(0.026)
Expected challenge X conservative	-0.080 **	(0.027)
Experienced reinforcement X conservative	0.000	(0.021)
Experienced challenge X conservative	0.041	(0.025)
Conservative? (dummy)	0.573	(0.366)
Frequency of issue activity	0.016	(0.019)
Frequency of religious activity	-0.004	(0.029)
Issue = Civil right?	-0.103	(0.064)
Issue = Gay marriage?	-0.195 *	(0.078)
Seen news elsewhere?	-0.022	(0.020)
Salience	0.017	(0.022)
How much learned from news item?	0.047 *	(0.022)
Number of news items read prior	0.059 *	(0.023)
Total number of news items read	-0.109 ***	(0.024)
Prior exposure to issue news	-0.071	(0.076)
Stable issue position (dummy)	-0.137 **	(0.052)
Male (dummy)	-0.096	(0.051)
Age	0.004 *	(0.002)
Education	-0.062 **	(0.022)
Constant	4.302 ***	(0.399)
Observations (subjects)	1,069 (488)	
F-statistic	F(23, 487) = 6.86	(p<0.001)
R-square	.1307	

* p<.05 ** p<.01 *** p<.001

a. Includes weak and strong conservatives

b. Reference category is social security reform

Discussion and conclusion

Subjects' perceptions of the viewpoints a news item supports and/or challenges play a small but important role in determining how they attend to it. Though these factors do not explain much of the variance in people's readership decisions, they are consistently statistically significant. Overall, these results support the conclusion that people desire viewpoint-supporting information (see Table 29 for a summary of results).

The more support a reader expects to find, the more interested in it he will be and the more time he will spend reading it. The results also suggest that people are more selective about viewpoint-challenging information, but the influence of this aversion is small compared to the draw of support. Furthermore, once they actually begin reading news items containing challenging information many individuals spend additional time examining them.

Table 35. Summary of experiment results

	Hypothesis	Supported?	Page
H1c.	The more viewpoint-reinforcing information a news item contains, the more likely an individual will be to look at it.	Yes	81
H1d.	The more viewpoint-reinforcing information a news item contains, the more time an individual will spend reading.	Yes	108
H2b.	The presence of viewpoint-challenging information does not influence the likelihood that a nonconservative subject will read a news item.	No (decrease)	105
H2c.	The presence of viewpoint-challenging information does not influence the time that a nonconservative subject will spend reading.	No (increase)	108
H3b.	The presence of viewpoint-challenging information reduces the likelihood that a conservative subject will read a news item.	Yes	105
H3c.	The presence of viewpoint-challenging information reduces the time that a conservative subject will spend reading.	No (increase)	108
H4b.	Individuals active in issue-based activism will be less likely to examine a news item with which they disagree.	No	105
H4c.	Individuals active in issue-based activism will spend less time reading a news item with which they disagree.	No	109
H4d.	Individuals active in religious social networks will be less likely to examine a news item with which they disagree.	No	105
H4e.	Individuals active in religious social networks will spend less time reading a news item with which they disagree.	No	109

The apparent discrepancy between the negative influence of challenging information on story selection and its positive influence on read time is compelling. Assuming that read time corresponds to subjects' engagement with the material, the question is why people exert additional effort thinking about news items that they were initially prone to avoid.

There are three theoretically motivated explanations for the discrepancy between news item selection and read time. All three explanations assume that individuals experience some aversion toward examining viewpoint-challenging information. The first possibility is that, despite this aversion, individuals may actually consider it important to be familiar with other perspectives. Thus, they are selective about which items they read, but once they commit to reading one they are willing to make a significant investment to understand it. They spend extra time on an item that contains more challenging information because it creates a larger cognitive load—it takes more work to understand—and because they are invested in making sense of, and subsequently critiquing, the new information. The second possibility is that, contrary to their expectations, individuals find other perspectives interesting. On this view, the extra time spent on viewpoint-challenging items is the result of this unanticipated interest, which they discover only after starting to read an item. A third possibility is that the more viewpoint-challenging information a new item contains, the higher its quality must be before the individual will look at it. As a consequence, among selected news items, dissonant information and news-item quality will be highly correlated. If this were the case, then the extra time subjects spend on challenging information is actually motivated by the quality of the news item.

A fourth possible explanation is based on a methodological issue. It could be that the study created an artificial incentive to attend to selected news items. Individuals may have felt obliged to read the news more thoroughly because they were participating in an academic study. This would be a typical example of a Hawthorne effect (Roethlisberger and Dickson 1939). If this is the case, then increased read time still indicates that attending to challenging information is more difficult. The difference is in the motivation. If it were not for the read-incentive created by the experimental setting, people might have abandoned reading items that required more cognitive processing, rather than spending extra time on them.

Though the last explanation is possible, I believe the study provides reasonable evidence of individuals' commitment to understanding other viewpoints. I did not provide an incentive for subjects to understand the viewpoints in the article, and the directions explicitly encouraged subjects to read only as long as they were interested in the item.

Though these attributes of the study reduce the risk that this was a Hawthorne effect, it is not possible to eliminate it in this design. Another design would be needed in order to rule this possibility out more completely. For example, researchers could ask users of a real online news service to report their attitudes regarding a variety of contemporary political issues and to allow their use of the service to be observed. The researcher could then automatically log the content of the articles that subjects read and how long they spent reading them over the course of several weeks. Though subjects would know of the surveillance, it is unlikely that this knowledge would have a sustained influence on their behavior. To analyze this data, the researcher would code the viewpoints represented in the stories subjects chose to read. Comparing these to opinion statements given at the start of the project, the researcher could arrive at a measure of consonant and dissonant information, which could be used to predict read time.

The survey results presented in Chapter 4 demonstrate that Americans are not using technology to engage in significant ideologically-motivated selectivity today. This may be a consequence of the limits of contemporary technologies and the ways in which people use them. The "Daily Me" does not yet exist, and the tools that are available for filtering individuals' exposure to news are not widely employed. New technologies and evolving social practice are likely to make such exposure control an increasingly common phenomenon. Technologies for filtering based on ideology are on the horizon. At the same time, people are becoming more skilled at working online, and online tools are increasingly integrated into social practice. It is likely that over the next several years people will come to take some form of ideological selectivity for granted. Research on

how to identify the political orientation of news content is underway (Efron 2004). The evidence that news seekers want to take their own opinions into account when selecting their information sources provides a strong incentive for online news services, which are fiercely competing for audience share, to offer ideologically-based personalization services. This study, which focuses on the choices people make in an online news environment that allows them to easily choose among alternatives that vary in terms of their viewpoint-reinforcing and viewpoint-challenging information, provides insight into underlying preferences about political information. To the extent that new technologies allow us to act on these preferences, the results here suggest what news exposure might look like in the future.

The data show that when forced to select among a variety of news items representing a range of political viewpoints, individuals consistently seek support for their own positions. They are more likely to look at information that reinforces their opinion, and they spend more time reading it. Individuals also exhibit an aversion to viewpoint-challenging information, though the effect is substantially smaller. Thus, despite the aversion, newsreaders prefer articles that include a large amount of supportive *and* challenging information to those that offer more moderate amounts of each. Among nonconservatives, there is a tendency to spend more time looking at the viewpoint-challenging news items they do choose to read, and this extra investment of time reflects their willingness to engage with other perspectives. Overall, these results provide further evidence that individuals desire viewpoint-reinforcement, but they do not desire to screen out all opinion-contrary information.

CHAPTER 6

CONCLUSION

The central objective of this research was to understand individuals' propensity to engage in ideologically-motivated selectivity, and the implications this has for their use of technology-mediated sources of political information. The work was intended to assess whether online political information seekers will use the capacities available to them to shape their exposure to political controversy to more closely resemble their opinions and predispositions.

Ideologically-motivated selective exposure has been a topic of debate for more than half a century, and the significance of the Internet has moved to the fore in the last five years. Some scholars argue that citizens' political opinions fundamentally influence their information exposure choices (e.g., Frey 1986), and that individuals systematically use media-enabled exposure control to seek out viewpoint-reinforcing information to the exclusion of other types of information (Mutz and Martin 2001; Sunstein 2001). Other scholars hold that citizens' political opinions are insignificant to exposure decisions (e.g., Sears and Freedman 1967; Chaffee *et al.* 2001), and that technology-enabled exposure control will have little influence on individuals' exposure to diverse political ideas (Iyengar *et al.* 2003; DiMaggio and Sato 2003).

The research described here was designed to reconcile these contradictory conclusions. By disaggregating the two forms of ideologically-motivated selective exposure, treating reinforcement seeking and challenge aversion as independent phenomena, I sought to explain why prior research on selective exposure has failed to yield consistent results. I proposed several hypotheses based on the premise that citizens

consistently desire to engage in the former behavior, but that a preference for the latter is less common and its influence less significant. Thus, given more control, I expected that exposure to viewpoint-reinforcing information would increase, while exposure to viewpoint-challenging information would remain stable or drop only slightly.

I used two studies to test these arguments. The first examined how citizens' overall exposure to political arguments changes in the presence of enhanced control. To do this, I looked at which political information sources online news-seekers used, and compared Internet users to nonusers in terms of the number of viewpoint-consistent and viewpoint-contrary arguments they knew. In the second study, I examined the relationship between individuals' perceptions of the viewpoints expressed in political news items and their choice of items to read and how long to spend reading them.

In the next section, I review and discuss the findings of the two studies, highlighting the ways in which the results are similar and examining their inconsistencies. Next, I consider the significance of these findings in the context of designing information systems. I start with the assumption that facilitating citizens' ability to understand political controversy, allowing them to learn more about their own perspectives while preserving exposure to the perspectives of others, is desirable. The question then is how the lessons learned here might inform the design of technologies to do this. Third, I describe some of the limitations of these studies, and consider how they might be overcome. Finally, I discuss a number of future research opportunities.

Findings

Before turning to their interpretation, let us briefly review the empirical findings. The analyses of survey data presented in Chapter 4 make five interrelated points regarding citizens' preferences for the partisanship of their overall political information diet. The first three observations regard the relationship between online news use and

argument repertoire; the last two are based on the sources individuals use online. First, individuals who get political information online are consistently more familiar with viewpoint-supporting information. Second, nonconservative online news users are more familiar with viewpoint-challenging arguments, while conservatives experience no change in their familiarity levels. Third, there is no evidence that citizens are abandoning nonpartisan sources, even among online news users who rely heavily on partisan alternatives. Fourth, individuals with stronger political opinions are more likely to consult supportive partisan sources. And fifth, individuals are more likely to seek out other view points when they have access to supporting information than when they do not.

The experimental analyses described in Chapter 5 examine the influence of ideology on decision-making at the level of individual news items. These results can be organized around three themes. First, they suggest that newsreaders tend to be drawn to viewpoint-reinforcing information, which is consistent with the data on overall exposure levels found in Chapter 4. Specifically, I found that the more newsreaders agree with a news item, the more likely they are to view it and the more time they spend examining it. Second, viewpoint-challenging information influences subjects' interest in news items in a more complicated way. The more subjects disagree with the viewpoints expressed in a news item, the less likely they are to examine it (though this effect is much smaller than the effect of viewpoint reinforcement). On the other hand, among the news items they view, readers tend to spend *more* time considering those containing more viewpoint-challenging information. Third, I found that although all groups of newsreaders spend more time reading news items containing opinion-relevant information, the increase is smaller for conservatives than nonconservatives.

Discussion

On the whole, this research suggests that individuals' political attitudes do influence their attention to relevant news and information. The data are also consistent with the claim that citizens respond to viewpoint-reinforcing and viewpoint-challenging information differently, though my hypotheses regarding challenge avoidance appear to have been incomplete.

The results regarding individuals' preference to examine viewpoint-reinforcing information appear unambiguous. Individuals seeking political information in an online environment that facilitates ideological selectivity (1) seek out sources that support their political viewpoints; (2) are more likely to attend to and spend more time considering news items with which they agree; and (3) have a larger repertoire of arguments with which to justify their opinions.

The results regarding viewpoint-challenging information are not as straightforward. Speaking broadly, the results suggest that citizens do not seek to entirely exclude contact with challenging information. Evidence for this claim takes several forms. In terms of their overall information exposure, Internet users are not less familiar than non-Internet users with arguments justifying other perspectives. To the contrary, Kerry-supporting Internet users were more aware of the rationales for supporting Bush than Kerry supporters who had less experience with the technology. In terms of their news-item exposure decisions, I found that newsreaders are slightly more selective about items containing viewpoint-challenging information. This does not necessarily mean that they seek to exclude other perspectives. The bias against challenging information was slight: large increases in the degree of opinion-contrary information present had only a small effect on the likelihood that a reader would examine an item. Furthermore, readers spent extra time on the challenging items they did consider, suggesting that the exposure was valuable enough to merit expending additional time and energy.

Nevertheless, it is worth examining possible explanations for the differences between the survey and experimental results: why did respondents in the first use additional control over their information environment to maintain or increase their familiarity with other viewpoints, while subjects in the second chose to filter out other perspectives? I consider two types of explanations; the first is based on a revised theoretical model of individual preferences, while the second is methodological in nature.

The first possibility is that the additional attention that newsreaders give to challenging news items counteracts their bias against selecting them at the individual psychological level. Subjects look at fewer items with which they disagree, but exert additional energy attending to those they do consider. On this view, I would argue that citizens want to be aware of the arguments favoring other viewpoints, but they don't want to encounter these arguments any more than they have to. Thus, given more control, I would expect individuals to be more selective, avoiding repeated exposure to arguments with which they disagree. Nonetheless, they want to be aware of other perspectives, and, having identified a novel argument, they make an effort to understand it. This takes more time than reading viewpoint-supporting information because the perspective and claims are less familiar and because the reader may be motivated to identify flaws in the arguments. A variation on this explanation is that individuals have a slight propensity to avoid opinion-contrary information because they expect it to be objectionable. Looking at such information, however, they discover that other viewpoints are interesting, and as a consequence spend more time reading. In either case, the increased exposure time found in the experiment could be the cause for the overall increase in familiarity with other viewpoints found in the survey.

A second theoretically-motivated explanation is that individuals have a higher quality threshold for the viewpoint-challenging news items they are willing to examine. An article that represents another viewpoint must be very compelling before someone will look at it, and the extra time spent on the items reflect their overall quality, not the

viewpoints expressed. Though the motivation would be different, increased exposure time could again explain why these individuals were more familiar with opposing arguments.

The remaining explanations are grounded in methodological issues. First, the differences might be related to differences in the sample. As previously observed, experimental subjects were more ideologically extreme than most Americans, and the topic was one that they indicated was of interest to them. Both of these factors are associated with a greater tendency to be selective (Frey 1986; Chaiken and Stangor 1987: 580). Second, the different results could reflect the different information environments in which the studies took place. Though the experiment relied on existing online tools to retrieve politically diverse news items, few Americans regularly use these capacities (Fallows 2005; Hargittai 2004). Thus, it could be that online news users responding to the survey are not filtering out other viewpoints because they have not yet developed the habits or skills in using the technologies that would let them do so easily and efficiently.

Although these methodological issues are undeniable, they are an insufficient explanation for the differences observed. Neither the uniquely partisan subject pool nor the enhanced control provided explain why these individuals spent extra time viewing information with which they disagreed. Thus, I conclude that a revised theoretical model that treats selection and subsequent engagement separately is necessary. This revised model needs to account for the simultaneous aversion to and interest in viewpoint-challenging information.

Another remaining question about the results pertains to the ways in which other factors, including political ideology and religious and political activity, influence selective exposure behavior. As predicted, both studies showed that conservatives pay less attention to other viewpoints than nonconservatives. The survey results suggest that conservatives who use the Internet are no more familiar with opinion-contrary arguments than those who do not use, while liberal Internet users do realize an increase in familiarity

with such arguments. The experiment went on to show that conservatives spend less time reading viewpoint-challenging information than nonconservatives (although all subjects take longer reading such items than reading viewpoint-reinforcing items). The reasons for the lesser engagement of conservatives with challenging information are unknown. One factor deserving more attention is the social networks in which conservatives are embedded. Strong social ties are an effective means of conveying normative pressure on individual behaviors (Portes 1998). If conservatives tend to belong to groups that devalue exposure to other viewpoints, then it could be group norms, and not the conservative ideology, that generate increasing selectivity.

In contrast to the findings regarding conservatives, the results about the influence of religious and political activity were both insignificant. There was no correlation between religious attendance and either form of selective exposure. This could indicate that religion is simply unimportant, but there is another explanation to consider. Research on the political influences of religion has suggested that attendance is often not the most effective predictor of political behavior. Religious ideology, specifically theological conservatism, may have more explanatory power when examining issues related to political tolerance (Ellison and Musick 1993).

Similarly, the frequency with which an individual is politically active may be the wrong dimension of activism to consider when looking for selective exposure effects. Much like with religion, the type of political group may have a more pronounced influence on selectivity than the frequency of participation. Some groups may encourage isolation while others focus on interaction. Furthermore, frequent participation could be associated with either of two opposite effects. On one hand, active participants could find other viewpoints more dissonant, increasing the incentive to avoid them. On the other hand, these citizens may be motivated to understand what those viewpoints are so that they can engage in the political debate. This suggests that the type of activity in which the individual participates may also be important.

Designing online news services

The results of these studies suggest that evolving search and filtering capacities in the news landscape have a significant influence on people's exposure to political information, but it is a mistake to claim that these capacities inevitably extinguish exposure to other viewpoints. How citizens' exposure to political information changes in the future will depend on the interaction between their exposure preferences and the information environment.

Different technical configurations will lead to different outcomes depending on the kinds of information search processes they facilitate. If technologies facilitate searches generating results in which supportive *and* challenging information are simultaneously presented, then users are likely to continue to encounter other viewpoints. On the other hand, if technologies encourage individuals to choose between exclusively supportive or exclusively challenging information, those who use them will experience declining diversity of exposure.

If we want to foster continued engagement with diverse political ideas it would be a mistake to ignore ideology when building online news tools. The capacity to assess ideology is on the horizon, and given what we know of its influence on people's attitudes toward the news, it seems very likely that this capacity will become an integral part of the news environment in some form. Rather than deny its significance, we should encourage a news media landscape in which people can find support for their own views, however radical, without abandoning exposure to other perspectives.

A number of strategies are possible if we take for granted the ability to correctly measure ideology. Imagine a nonpartisan news searching service that aims to promote a well-informed citizenry. Much like the news search services available today, the service would allow users to get an overview of the top news stories or to search for topics of personal interest. The key difference lies in how results are ranked. In its simplest form,

we could envision an approach to searching that assumes nothing about the user. This naïve approach would generate results that rank mixed viewpoint content above single-viewpoint content, but makes sure that extreme views are also represented in early results. A more sophisticated approach would be to employ dynamic user models. Such a system could, for example, assume that the first items a user selects will tend to be supportive of his or her opinion. Using this information, the system could rank subsequent results so that items that clearly offer viewpoint reinforcement, but which also include a significant amount of challenging information are presented first. The results could continue to be modified as the subject views more items, slowly increasing the prevalence of the less-viewed perspective, thereby using the powerful desirability of novelty to offset the subtle aversion to difference. We can further imagine a system utilizing user models that are maintained across multiple search sessions. Recognizing that attitudes about individual issues are often clustered ideologically, it should be possible to make educated guesses about people's preferences regarding new topics. Again, the purpose of this assessment would be to ensure that balanced news items with clearly identifiable supportive information are ranked most highly.

Designers have two incentives for participating in such an undertaking. First, some may be motivated by a concern for democracy and the deliberative process. A system that effectively promotes a more complete understanding of the various perspectives on controversial political issues would yield many social benefits, including a more tolerant citizenry that engages in more thorough exploration of possible solutions to social problems.

Second, this is a marketable service. This strategy for ranking news items should produce results that more closely reflects users' preferences, and it seems reasonable to expect that users would be more satisfied with the services as a consequence. The online news search market is a competitive space, with several major service providers—among them Google, the Microsoft Network (MSN), and Yahoo—competing for market share.

These companies are exploring ways to provide personalized news services in order to attract and retain users. Google allows users to create personal profiles that reflect the categories of news that interest them. For example, a user might choose to see more national than international news, to exclude entertainment news, or to see only sports news. One of MSN's news services tracks the stories that a user selects, revising search results based on these choices. Yahoo allows users to select a group of news services from which to create a personalized news product. Services that tailor results as suggested here could potentially realize a marketable product while facilitating democratic deliberation.

The most significant implication that this research has for news service design regards the use of information about users' political predispositions. The ranking strategies suggested here stand in contrast to approaches typical used in consumer recommendation systems (Schafer *et al.* 1999). For example, having identified a consumer's preferences regarding music styles it is appropriate for a system to filter out music that the user is known to dislike. The differences is that in the case of political information, individuals' political predispositions and their exposure preferences are not synonymous. To effectively meet users' needs, news services' user models must account for people's preference for novelty and awareness of other perspectives as well as their desire for viewpoint reinforcement.

Limitations of this study

This survey and experiment both provided useful insight into individuals' preferences regarding political information, but each involved trade-offs. Survey respondents were nationally representative, suggesting that it is appropriate to generalize about the implications of the finding for the U.S. citizenry. In exchange, the observed variation in respondents' exposure control was not as large as it may be in the future. At

this point, mechanisms for engaging in viewpoint selectivity over the Internet are limited and largely unused. The experiment, on the other hand, afforded subjects more control at the expense of generalizability. Allowing subjects to participate in the study from their own computer on their own schedule allowed for experience that more closely resembles their normal online news-reading practices; nevertheless, it was still an artificial environment targeted to partisan, politically-interested newsreaders. Collecting data on the use of a selectivity-enhancing information system by a representative sample over an extended period would represent the best of both worlds. Such an approach would provide more accurate and more representative data about item-level and aggregate information exposure.

A second limitation of the work regards the hypotheses and data collected regarding factors that interact with selective exposure behavior. As described in the previous section, religious and political activity may both be related to challenge avoidance, but not at the level of participation frequency. Future research should focus on the ideologies of the groups with which individuals interact, not just the activity levels. When considering religion, it may also be useful to consider theological conservatism, which has been a better predictor of tolerance than religious affiliation in some studies (Ellison and Musick 1993).

There are also several more minor limitations. In its present form, the study includes no mechanism for checking the accuracy of respondents' self-reported candidate preferences or argument exposure. Regarding the former, it is known that respondents often give opinions in surveys that are generated on-the-fly, and do not necessarily reflect a deep commitment to the stated position (Zaller 1992). Thus, this survey data may overestimate respondents' level of candidate support. To discriminate between stable supporters and those generating opinions in the moment, it would be useful to ask respondents about their candidate preferences before *and after* asking about the argument exposure. Individuals whose positions changed as a result of exposure to the arguments

listed could then be treated separately from those whose positions remained unchanged. To test the validity of the argument exposure measure, it would be interesting to split the sample and ask a relatively small minority of respondents a series of open-ended questions about their argument exposure. These responses could then be hand-coded and compared to those generated via the closed-ended questions.

Another minor limitation regards the collection of usage information about specific sources of online information. The survey asked people about their use of the Internet as a source of news “ever” and “yesterday”, but only asked about their use of the specific types of sources in the past year. Given the substantial numbers of online news users, it would be interesting to collect more detailed usage information.

Future research questions

The results of this research suggest three areas that merit future consideration. First, future research could be designed to reconcile the findings on item-level preferences and overall exposure. As discussed above, the differences in these results could be the product of a more complex set of preferences than originally anticipated. My interpretation is that citizens want to be familiar with arguments on both sides of a controversy, but they want to avoid repeated exposure to opinion-contrary views. Individuals therefore look at fewer sources of viewpoint-challenging information, but they consider the sources they do choose carefully enough to achieve at least a rudimentary understanding of the opposing arguments. There are, however, a number of alternate possible interpretations, including that extra time spent reading reflects a tendency to find other viewpoints more interesting, or that newsreaders only expose themselves to viewpoint-challenging information when it is included in an exceptionally compelling article.

Further survey and experimental work could be employed to distinguish between these alternatives. In terms of individuals' overall exposure, it should be possible to collect survey data to examine the influence of online news use on the *frequency* with which users encounter other viewpoints, not just their awareness of them. Turning to item-level exposure decisions, researchers could examine the influence of the interaction between argument novelty and viewpoint alignment on use while controlling for news item quality. If my assertion regarding individual political exposure preferences is correct, individuals will be more likely to examine news items containing novel arguments with which they disagree than comparable items in which the arguments are familiar. Furthermore, having decided to consider a news item, the length of time the individual spends reading it will be positively correlated with the amount of novel challenging information it contains.

The second area for future research regards the specific circumstances under which citizens are selective in their exposure to viewpoint-challenging political information. Other research has established that there are many circumstances under which individuals actually prefer dissonant information. These circumstances can be organized around two themes. First, individuals are motivated to look at opinion challenges when they are secure that they will not be swayed from their own beliefs. For example, research has shown that individuals find arguments that are weakly critical of their views or that are easily refuted to be as desirable as strongly supportive information (Lowin 1967; Lowin 1969; Kleinhesselink and Edwards 1975; Canon 1964; Freedman 1965; Frey 1981b; Frey 1986: 52-56). Similarly, individuals who have reason to be confident of their position, as when they have just seen supportive information, prefer dissonant information to consonant information (Frey 1981b; Frey 1986: 57-58). Second, individuals will seek out viewpoint-contrary information when it is useful to some future task. Thus, an individual preparing for a political debate is more likely to look for information representing the other side's arguments (Canon 1964; Freedman 1965; Clark

and Wilson 1961). Additional research on the significance of these factors in the context of online political information seeking could further enhance our ability to foster diverse political exposure.

The final area of research regards the influence of political ideology. We need a better understanding of the reasons and mechanisms leading conservatives to be less attentive to opinion-contrary information than liberals. I have suggested above that this tendency may be a product of pressures exerted via social networks. It would be interesting to determine if the tendency of conservatives to be less drawn to opinion-contrary information is grounded in the ideology itself, or in the social practices common among conservatives.

Conclusion

Exposure to political difference is a crucial part of democratic deliberation. A communication environment that allows individuals to exclude other viewpoints potentially threatens citizens' ability to understand those who disagree with them and to find common ground, ultimately contributing to political polarization. New information technologies, including email, the web, blogs, and the myriad information processing services accessible via the Internet, make realizing a communication environment such as this increasingly viable. Using capabilities available today, individuals can significantly stem their exposure to viewpoint-challenging information. A steady flow of technical advances in information filtering and retrieval are likely to enhance these capabilities. Under these circumstances, it is critically important that we understand whether people *want* to avoid contact with viewpoint-challenging information, and the extent to which they are using new technologies to achieve this end.

This study provides important insight into the relationship between selectivity-enhancing technology and political information exposure. The idea that people who get

political information online are building echo chambers in which the only other voices they hear are reflections of their own has gained significant momentum in the past several years. News reports present compelling narratives describing the actions of these individuals, and scholars have suggested theoretical grounds for these behaviors. The consequences of such a transformation of the political landscape would be dire. Effective political deliberation requires a communication environment in which differing views are expressed and heard. I believe, however, that scenarios described to date have tended to be overly dystopian. Some individuals undoubtedly do engage in these troubling practices, using the Internet to filter out all disagreement, but empirical evidence shows that the majority of Americans do not.

In this dissertation, I have argued that citizens do seek support for their own beliefs, but not to the exclusion of other opinions. When given more control over their political information environment, individuals continue to expose themselves to arguments and attitudes with which they disagree. I have suggested that this reflects a preference among most Americans to be familiar with multiple perspectives. At the same time, I believe that citizens do seek to limit repeated exposure to viewpoints with which they disagree. Most people are satisfied with hearing an argument for the other side only occasionally. Thus, in a future in which citizens can exert a strong ideological influence on their political information exposure, polarization is not inevitable.

These results are encouraging, but I do not wish to suggest that new technologies are a panacea. Under some circumstances, the preferences I have described could still lead to polarization. I have suggested that people's willingness to encounter political difference is contingent on first finding adequate support for their own viewpoints. Individuals who fail to find support for their views in the more balanced news media may ultimately abandon them in favor of more biased alternatives as a byproduct of their search for political reinforcement. Whether individuals continue to get their news from

mainstream of more alternative sources, the ability to easily acquire a moderately balanced mix of news remains a crucial element in an effective democracy.

APPENDICES

APPENDIX A

SURVEY INSTRUMENT

PRINCETON SURVEY RESEARCH ASSOCIATES
PEW INTERNET & AMERICAN LIFE PROJECT

SELECTIVE EXPOSURE SURVEY
June 2004

N=1,500 adults 18 and older, 750 Form A/750 Form B

Field Dates: June 14 – July 14, 2004

Job#: 24028

* indicates a PIAL trend question

** indicates a PRC trend question

Hello, my name is _____ and I'm calling for Princeton Survey Research. We're conducting a survey to find out what Americans think about some important issues today, and we would like to include your household. May I please speak with the YOUNGEST MALE, age 18 or older, who is now at home? (IF NO MALE, ASK: May I please speak with the OLDEST FEMALE, age 18 or older, who is now at home?)

AFTER RESPONDENT IS ON THE PHONE AND INTRODUCTION HAS BEEN READ: This interview is completely voluntary. If we should come to any question you don't want to answer, we can skip it. Just let me know and we will go on to the next question. The answers you give will be kept confidential. Here's my first question...

SEX RECORD RESPONDENT SEX

- 1 Male
- 2 Female

Q1 Overall, are you satisfied or dissatisfied with the way things are going in this country today?

- 1 Satisfied
- 2 Dissatisfied
- 9 Don't know/Refused

Q2 I'm going to read you a few statements. For each one, please tell me if this describes you very well, somewhat well, not too well, or not at all. (READ; ROTATE) (FOR FIRST ITEM THEN AS NECESSARY: Does this describe you very well, somewhat well, not too well, or not at all?)

- a. After I gather all the facts about something, I make up my mind pretty quickly
- b. I like to read about a lot of different things
- c. I find it difficult to make up my mind when I have too much information about something
- d. Once I have my mind made up about something, I seldom change it
- e. I enjoy hearing about politics and world affairs

- 1 Very well
- 2 Somewhat well
- 3 Not too well
- 4 Not at all
- 9 Don't know/Refused

*Q5 Turning to a different topic... do you use a computer at your workplace, at school, at home, or anywhere else on at least an occasional basis?

- 1 Yes
- 2 No
- 9 Don't know/Refused

*Q6 Do you ever go online to access the Internet or World Wide Web or to send and receive email?

- 1. Yes
- 2. No
- 9. Don't know/Refused

ASK ALL INTERNET USERS (Q6=1); NON-USERS GO TO Q18:

*Q12 About how many years have you had access to the Internet?

_____ RECORD NUMBER OF YEARS
0 Under a year
99 Don't know/Refused

IF ONLINE UNDER A YEAR (Q12=0):

*Q12.1 About how many months is that?

_____ RECORD NUMBER OF MONTHS
99 Don't know/Refused

ASK ALL INTERNET USERS (Q6=1):

*Q16 About how often do you go online from... (INSERT IN ORDER) – several times a day, about once a day, 3-5 days a week, 1-2 days a week, every few weeks, or less often?

home?

work?

- 1 Several times a day
- 2 About once a day
- 3 3-5 days a week
- 4 1-2 days a week
- 5 Every few weeks
- 6 Less often
- 7 (VOL) Never
- 9 Don't know/Refused

*Q17 How much, if at all, has the Internet improved... (INSERT FIRST ITEM; ROTATE) — a lot, some, only a little or not at all? How much has the Internet improved... (INSERT NEXT ITEM) – a lot, some, only a little, or not at all?

- a. your ability to complete everyday tasks like shopping or paying bills
- b. the way you pursue your hobbies or interests
- c. your ability to do your job
- d. your ability to get news and information that you can't get elsewhere
- e. your ability to keep in touch with friends and family

- 1 A lot
- 2 Some
- 3 Only a little
- 4 Not at all
- 5 (VOL) Does not apply to me
- 9 Don't know/Refused

ASK ALL:

Q18 Next...Please tell me if you ever get news or information from each of the following sources. (First/Next)... (INSERT IN ORDER). Do you EVER get news or information from this source?

[IF YES ASK Q19 BEFORE MOVING TO NEXT ITEM]

- a. Newspapers
- b. Television
- c. Magazines
- d. The radio
- e. Friends and family

ASK f-g LAST, IN ORDER, OF INTERNET USERS ONLY:

- f. The Internet
- g. Email newsletters or listservs

Yes

No

9 Don't know/Refused

IF YES TO ITEM ABOVE:

Q19 Did you happen to get news or information from (INSERT SAME ITEM a-g) YESTERDAY, or not?

- 1 Yes
- 2 No
- 9 Don't know/Refused

SPLIT FORM Q20/Q21

FORM A ONLY:

**Q20 Thinking about the different kinds of news available to you, what do you prefer... (READ AND ROTATE 1-2)

- 1 Getting news from sources that SHARE your political point of view (or)
- 2 Getting news from sources that DON'T HAVE a particular political point of view (or)
- 9 Don't know/Refused

FORM B ONLY:

Q21 Thinking about the different kinds of news available to you, what do you prefer... (READ AND ROTATE 1-3)

- 1 Getting news from sources that SHARE your political point of view (or)
- 2 Getting news from sources that DON'T HAVE a particular political point of view (or)
- 3 Getting news from sources that CHALLENGE your political point of view (or)
- 9 Don't know/Refused

IF GET NEWS ONLINE (Q18f=1 or Q18g=1):

**Q22 Which of the following comes closest to describing why you go ONLINE to get news and information? (READ, RANDOMIZE 1-3)

- 1 Because you can get more IN DEPTH information on the Web
- 2 Because getting information online is more CONVENIENT for you
- 3 Because you can get information from a WIDER RANGE OF VIEWPOINTS on the Web
- 4 (VOL) Some other reason (SPECIFY)
- 9 Don't know/Refused

CAMPAIGN SERIES

ASK ALL:

**C1 Suppose the election for president were being held TODAY and the candidates were... (INSERT CHOICES BELOW – ORDER ROTATED BY FORM)? Who would you vote for?

FORM A: George W. Bush, the Republican; John Kerry, the Democrat; and Ralph Nader, an Independent candidate

FORM B: John Kerry, the Democrat; George W. Bush, the Republican; and Ralph Nader, an Independent candidate

- 1 Bush
- 2 Kerry
- 3 Nader
- 4 (VOL) Other candidate
- 5 (VOL) Wouldn't vote
- 9 Don't know/Refused

ASK C2 IF DO NOT SUPPORT BUSH, KERRY, OR NADER IN C1 (C1=4-9):

**C2 As of TODAY, do you LEAN more toward...(INSERT CHOICES BELOW—ORDER ROTATED BY FORM)?

FORM A: Bush, the Republican; Kerry, the Democrat; or Nader, the Independent

FORM B: Kerry, the Democrat; Bush, the Republican; or Nader, the Independent

- 1 Bush
- 2 Kerry
- 3 Nader
- 4 (VOL) Other candidate
- 9 Don't know/Refused

ASK C3 IF SUPPORT BUSH, KERRY, OR NADER IN C1 (C1=1-3):

**C3 Do you support (INSERT C1 CHOICE: Bush/Kerry/Nader) STRONGLY or only moderately?

- 1 Strongly
- 2 Only moderately
- 9 Don't know/Refused

ASK C4 OF ALLWHO DO *NOT* SUPPORT/LEAN TOWARD BUSH OR KERRY (C1=3 OR C2=3-9)

C4 Suppose there were only two presidential candidates on the ballot and you HAD TO CHOOSE between... (INSERT CHOICES BELOW – ORDER ROTATED BY FORM). If the election were held TODAY, who would you vote for?

FORM A: George W. Bush, the Republican; and John Kerry, the Democrat

FORM B: John Kerry, the Democrat; and George W. Bush, the Republican

- 1 Bush
- 2 Kerry
- 3 (VOL) Other candidate
- 4 (VOL) Wouldn't vote
- 9 Don't know/Refused

**C5 How closely have you been following news about the upcoming Presidential election? (READ 1-4)

- 1 Very closely,
- 2 Somewhat closely,
- 3 Not too closely, or
- 4 Not at all closely?
- 9 Don't know/Refused

ASK INTERNET USERS (Q6=1); NON-USERS GO TO C8:

C6 Do you ever get news or information about the candidates and the campaign on the Internet or through email?

- 1 Yes
- 2 No
- 9 Don't know/Refused

ASK IF C6=1:

C7 How often do you get news or information about the candidates and the campaign on the Internet or through email – everyday or almost everyday, several times a week, several times a month, or less often?

- 1 Everyday or almost everyday
- 2 Several times a week
- 3 Several times a month
- 4 Less often
- 9 Don't know/Refused

ASK ALL:

**C8 Where have you gotten MOST of your news and information about the presidential election campaigns? From television, from newspapers, from radio, from magazines, or from the Internet and email? (ACCEPT TWO RESPONSES; IF ONLY ONE RESPONSE IS GIVEN, PROBE FOR ADDITIONAL RESPONSE)

- 1 Television
- 2 Newspapers
- 3 Radio
- 4 Magazines
- 5 The Internet and email
- 6 (VOL) None of these/Someplace else (SPECIFY)
- 9 Don't know/Refused

C9 In the way they cover the presidential race, do you think the news media are biased in favor of John Kerry, biased in favor of George W. Bush, or don't you think they show any bias one way or the other?

- 1 Kerry bias
- 2 Bush bias
- 3 No bias
- 4 (VOL) Biased both ways, sometimes for Kerry and sometimes for Bush
- 5 (VOL) Depends on media source
- 9 Don't know/Refused

C10 I'm going to read different arguments people make about the Presidential candidates and their policies. Please tell me how often you have heard or read each argument – frequently, just once in a while, or never. Here's the (first/next) one... (READ; ROTATE) AS NECESSARY: Is this something you hear frequently, just once in a while, or have you never heard this argument?

IF HEAR FREQUENTLY/ONCE IN A WHILE, ASK C11 FOLLOW UP BEFORE MOVING TO NEXT ITEM

ROTATE BLOCKS; IF SUPPORT BUSH (C1=1 OR C2=1 OR C4=1), ASK a-d FIRST, IF SUPPORT KERRY/UNDECIDED (C1=2 OR C2=2 or C4=2-9), ASK e-h FIRST. ROTATE ITEMS WITHIN BLOCKS.

- a. The Bush administration's policies have helped the country's economy begin to recover
- b. George Bush is a stronger leader than John Kerry in the war against terrorism
- c. John Kerry changes his positions on the issues when he thinks it will help him win an election
- d. John Kerry has a history of accepting money from special interest groups

- e. John Kerry will end special treatment for corporations and wealthy Americans
- f. The Bush administration misled the American public about the reasons for going to war with Iraq
- g. John Kerry has a better strategy than George Bush for creating peace in Iraq
- h. Some Bush administration policies are a threat to basic civil rights and civil liberties

- 1 Hear this frequently
- 2 Hear this once in a while
- 3 Have never heard this
- 9 Don't know/Refused

C11 Do you AGREE or DISAGREE with this argument, or have you not thought much about it?

- 1 Agree
- 2 Disagree
- 3 Haven't thought much about it
- 9 Don't know/Refused

ASK ALL INTERNET USERS; OTHERS GO TO DEMOS:

INT1 In the past 12 months, did you happen to visit any of the following websites? Just tell me yes or no. (READ; ROTATE WITHIN SECTIONS) IF NECESSARY: Did you happen to visit this kind of website in the past 12 months?

ASK a-f OF ALL; ALWAYS ASK a-c FIRST, IN ORDER:

- a. The website of a major news organization, such as cnn.com or msnbc.com
- b. The website of an INTERNATIONAL news organization, such as the BBC or Aljazeera (AL-ja-ZEE-ra)
- c. The website of an ALTERNATIVE news organization, such as AlterNet.org (ALL-ter-net-dot-org) or NewsMax.com (news-max-dot-com)
- e. The website of a politically LIBERAL organization, such as People for the American Way or Moveon.org (move-on-dot-org)
- f. The website of a politically CONSERVATIVE organization, such as the Christian Coalition or the American Enterprise Institute

ASK g-i OF FORM A ONLY

- g. GeorgeWBush.com (George-W-Bush-dot-com), the President's official reelection website
- h. JohnKerry.com (John-Kerry-dot-com), the official website of the Kerry campaign

ASK j-l OF FORM B ONLY:

- j. RNC.com (R-N-C-dot-com), the official website of the Republican National Committee
- k. DNC.com (D-N-C-dot-com), the official website of the Democratic National Committee

1 Yes

2 No

9 Don't know/Refused

PIAL STANDARD DEMOGRAPHICS:

(READ) Now a few last questions for statistical purposes only...

PAR Are you the parent or guardian of any children under age 18 now living in your household?

- 1 Yes
- 2 No
- 9 (DO NOT READ) Don't know/Refused

AGE What is your age?

_____ years (97=97 or older)

- 98 Don't know
- 99 Refused

EDUC What is the last grade or class you completed in school? (DO NOT READ, BUT CAN PROBE FOR CLARITY IF NEEDED).

- 1 None, or grades 1-8
- 2 High school incomplete (grades 9-11)
- 3 High school graduate (grade 12 or GED certificate)
- 4 Technical, trade or vocational school AFTER high school
- 5 Some college, no 4-year degree (includes associate degree)
- 6 College graduate (B.S., B.A., or other 4-year degree)
- 7 Post-graduate training/professional school after college (toward a Master's degree or Ph.D., Law or Medical school)
- 9 (DO NOT READ) Don't know/Refused

MAR Are you married, living as married, divorced, separated, widowed, or have you never been married?

- 1 Married
- 2 Living as married
- 3 Divorced
- 4 Separated
- 5 Widowed
- 6 Never been married
- 8 (DO NOT READ) Don't know
- (DO NOT READ) Refused

EMPL Are you now employed full-time, part-time, retired, or are you not employed for pay?

- 1 Employed full-time
- 2 Employed part-time
- 3 Retired
- 4 Not employed for pay
- 5 (VOL) Disabled
- 6 (VOL) Student
- 8 (VOL) Other
- 9 Don't know/Refused

ASK IF EMPL DOES NOT EQUAL 6:

STUD Are you also a full- or part-time student?

- 1 Yes, full-time
- 2 Yes, part-time
- 3 No
- 9 Don't know/Refused

ASK ALL:

HISP Are you, yourself, of Hispanic or Latino origin or descent, such as Mexican, Puerto Rican, Cuban, or some other Latin American background?

- 1 Yes
- 2 No
- 9 (DO NOT READ) Don't know/Refused

RACE What is your race? Are you white, black, Asian, or some other race?

IF R SAYS HISPANIC OR LATINO, PROBE: Do you consider yourself a WHITE (Hispanic/Latino) or a BLACK (Hispanic/Latino)? IF R DOES NOT SAY WHITE, BLACK OR ONE OF THE RACE CATEGORIES LISTED, RECORD AS "OTHER" (CODE 6)

- 1 White
- 2 Black or African-American
- 3 Asian or Pacific Islander
- 4 Mixed race
- 5 Native American/American Indian
- 6 Other (SPECIFY)
- 9 (DO NOT READ) Don't know/Refused

POLAF In politics TODAY, do you consider yourself a Republican, Democrat, or Independent?

- 1 Republican
- 2 Democrat
- 3 Independent
- 4 No party/Not interested in politics (VOL.)
- 5 Other party (VOL.)
- 9 (DO NOT READ) Don't know/Refused

POLID Would you say your views in most political matters are very liberal, somewhat liberal, moderate, somewhat conservative, or very conservative?

- 1 Very liberal
- 2 Somewhat liberal
- 3 Moderate
- 4 Somewhat conservative
- 5 Very conservative
- 9 Don't know/Refused

VOTE These days, many people are so busy they can't find time to register to vote, or move around so often they don't get a chance to re-register. Are you NOW registered to vote in your precinct or election district, or not?

- 1 Yes, registered voter
- 2 No, not registered voter
- 3 (VOL) Don't have to register
- 9 Don't know/Refused

D6 How often do you go to church, synagogue, or some other place of worship? Would you say . . .
(READ 1-5)

- 1 Daily,
- 2 About once a week,
- 3 About once a month,
- 4 Several times a year, OR
- 5 Don't you go to worship services?
- 9 (DO NOT READ) Don't know/refused

D7 What is your religious preference -- Protestant, Roman Catholic, Jewish, Mormon, an Orthodox Church, or some other religion?

- 1 Protestant (includes Baptist, Christian, Episcopalian, Jehovah's Witness, Lutheran, Methodist, Presbyterian, etc.)
- 2 Roman Catholic/Catholic
- 3 Jewish
- 4 Mormon (Church of Jesus Christ of Latter Day Saints)
- 5 Orthodox Church (Greek Orthodox, Russian Orthodox, etc.)
- 6 Islam/Muslim
- 7 Buddhist
- 8 Hindu
- 9 Other religion (SPECIFY – BACK-CODE AS APPROPRIATE)
- 97 (VOL.) No religion/Atheist/Agnostic
- 98 Don't know
- 99 Refused

ASK D8 IF OTHER RELIGION/DK/REF (D7=9,98,99):

D8 Do you think of yourself as a Christian, or not?

- 1 Yes
- 2 No
- 9 Don't know/refused

ASK D9 IF PROTESTANT OR CHRISTIAN (D7=1 or D8=1):

D9 Would you describe yourself as a born-again or Evangelical Christian, or not?

- 1 Yes
- 2 No
- 9 Don't know/Refused

ASK ALL:

INC Last year, that is in 2003, what was your total family income from all sources, before taxes. Just stop me when I get to the right category... (READ 1-8)

- 1 Less than \$10,000
- 2 \$10,000 to under \$20,000
- 3 \$20,000 to under \$30,000
- 4 \$30,000 to under \$40,000
- 5 \$40,000 to under \$50,000
- 6 \$50,000 to under \$75,000
- 7 \$75,000 to under \$100,000
- 8 \$100,000 or more
- 9 (DO NOT READ) Don't know/Refused

ASK IF GO ONLINE AT HOME (Q16a=1-6):

*MODEM Does the computer you use at home connect to the Internet through a dial-up telephone line, or do you have some other type of connection, such as a DSL-enabled phone line, a cable TV modem, a wireless connection, or a T-1 or fiber optic connection?

- 1 Standard telephone line
- 2 DSL-enabled phone line
- 3 Cable modem
- 4 Wireless connection (either “land-based” or “satellite”)
- 5 T-1 or fiber optic connection
- 6 Other (MAKE SURE NOT ONE OF ABOVE)
- 9 (DO NOT READ) Don't know/Refused

ASK IF GO ONLINE FROM WORK (Q16b=1-6):

*BBW Do you happen to know what kind of Internet connection you have at WORK, a high-speed connection or dial-up connection through a modem?

- 1 High speed
- 2 Dial-up
- 3 (DO NOT READ) None/Does not apply
- 9 (DO NOT READ) Don't know/Refused

IF HAVE BB AT HOME (MODEM=2-5); OTHERS GO TO BB8:

*BB2 About how many years have you had high-speed Internet service at home?

- _____ RECORD NUMBER OF YEARS
0 Under a year
99 (DO NOT READ) Don't know/Refused

IF HAVE BB LESS THAN A YEAR (BB2=0) ASK:

*BB3 About how many months is that?

- _____ RECORD NUMBER OF MONTHS
99 (DO NOT READ) Don't know/Refused

NO BB4-BB7

ASK BB8-BB9 IF HAVE DIAL-UP AT HOME (MODEM=1):

*BB8 Assuming cost was not an issue, would you LIKE to have a faster, "high-speed" connection at home, or isn't that something you're interested in?

- 1 Yes
- 2 No
- 9 (DO NOT READ) Don't know/Refused

*BB9 As far as you know, is high-speed Internet service available in your area?

- 1 Yes
- 2 No
- 9 Don't know/Refused

THANK RESPONDENT: Thank you very much for your time. The results of this survey are going to be used by a non-profit research organization called the Pew Internet & American Life Project, which is looking at the impact of the Internet on people's lives, and by researchers at the University of Michigan. A report on this survey will be issued by the Pew Internet Project in a few months and you can find the results at its web site, which is www.pewinternet.org [w-w-w dot pew internet dot org]. Thanks again for your time. Have a nice day/evening.

APPENDIX B

COMPARING SOURCE USE PROPORTIONS

In order to assess differences in respondents' use of news sources online and off, I used a procedure that facilitates the comparison of multiple proportions. This appendix describes the procedure in detail.

The original dataset describing respondents' source use includes one case per respondent and one variable per source type. The value of each variable corresponds to the respondent's use of that source. For example, data corresponding to five respondents might look like this:

ID	Television	Newspaper	Major news site	Ideological site	Party site	Partisan news site
1	1	1	0	0	0	0
2	1	1	1	1	1	1
3	0	0	1	0	0	0
4	1	1	0	1	0	1
5	1	0	1	0	0	0

I transformed the dataset so that there is one case for each source-respondent combination. In the transformed dataset, a series of dummy variables indicate which source is being described, and a new dichotomous variable represents the respondent's use of that source. Thus, in the revised dataset there were six times as many cases. For example, a single respondent who got news via television and the newspaper, but did not use any online source would be represented as follows:

ID	Television	Newspaper	Major news site	Ideological site	Party site	Partisan news site	Use
1	1	0	0	0	0	0	1
1	0	1	0	0	0	0	1
1	0	0	1	0	0	0	0
1	0	0	0	1	0	0	0
1	0	0	0	0	1	0	0
1	0	0	0	0	0	1	0

Next I constructed a logistic regression model predicting use by media type. For example, the following model compares use of partisan news sites to the other five news sources:

$$\text{logit}(\text{use}) = \alpha + \beta_1 (\text{television}) + \beta_2 (\text{newspaper}) + \beta_3 (\text{ideological}) + \beta_4 (\text{party})$$

The overall Wald statistic is an indicator of the significance of source type as a predictor of use. A significant coefficient on a source type dummy indicates that use of that source is significantly different than use of the reference category source. In the example given above, the significance of β_2 indicates whether newspaper usage is different than the use of partisan news sites.

In order to evaluate the differences between other source pairs, I performed a series of post-hoc multiple comparisons, modifying which source was treated as the reference category. For example, if partisan news site was the reference category in the first model, party site might be set as the reference category in the second, ideologically-oriented site as the third, and so on. This was done five times in order to compute coefficients corresponding to every source pair. A Bonferroni adjustment was used to account for multiple comparisons. Thus, to achieve significance at the .05 level, the p value had to be less than .01.

There is one final note about the analysis. Usage levels for all six source types are based on responses from a single group of respondents. Since some respondents may be more inclined to get news than others, individuals' responses may be clustered. In order to account for this possibility, the logistic regression referred to above was actually

a generalized estimating equations (GEE) with a logistic link function and robust standard errors. This quasi-likelihood method produces coefficients that are comparable to logistic regression, but that are adjusted for the clustering that occurs when repeated within-subject measures are used (Zeger *et al.* 1988).

APPENDIX C

RECRUITMENT DOCUMENTS

Email and web-site posting:

An important study is being conducted at the University of Michigan on access to political information. Do people use the internet to learn about political perspectives not well-represented in the mainstream media, or do they use it to insulate themselves from opinions they don't agree with? Or both? Help U. Michigan researchers figure it out: Participate in this study and be entered to win a \$100 gift card from Amazon.

Project web site

Thank you for your interest in this research project.

Your input is very important, **and participation is easy**. If you choose to be included in the study, you will be given access to a secure web site that will lead you through a brief experiment. In this experiment, you will be asked a series of questions about news stories related to a political issue of interest to you. The experiment will take about 30 minutes and no further participation is required.

Please be assured that your answers are confidential. The data collected during the experiment will not be linked to personally identifying information and no individual person's answers will ever be identified in any report.

We highly value your contribution. As a reward for participating, you will have the opportunity to be entered in a lottery for a **\$100 gift certificate to Amazon.com**.

To participate, please enter your email address into the box below, and click submit. You should receive detailed instructions for accessing the project web site within a few days. If you have any questions about the project, please email Kelly Garrett garrettk@umich.edu.

You must at least 18 years old to participate.

Please enter your email address here: _____

Notes:

- Your browser must support cookies and pop-ups in order to access this site.
- You will not be able to complete the study using WebTV or MSN TV.

Kelly Garrett
Ph.D. candidate
University of Michigan
School of Information

Directions for participating

Subject: U-Michigan Research on Online News

Thank you for your interest in participating in this online experiment examining the factors that shape people's news preferences. Your participation is very important. Please be assured that your answers are confidential. No individual person's answers will ever be identified in any report.

To take the survey, please click on the link below:

<http://{URL}>

Or you can copy the URL and paste it into your browser. If you have any difficulty logging in, please reply to this message for assistance.

Thank you for your participation!

Kelly Garrett
Ph.D. candidate
University of Michigan School of Information

Directions for participating

Subject: U-Michigan Research on Online News

You recently participated in a telephone survey where you indicated that you would be willing to hear more about an online study. This message describes that study, and explains how you can be involved.

The study is being conducted at the University of Michigan and it examines how people use online news. The purpose of the study is to understand the factors that shape people's news preferences.

Your input is very important, and participation is easy.

If you choose to be included in the study, you will be given access to a secure web site that will lead you through a brief experiment. In this experiment, you will be asked a

series of questions about news stories related to a political issue of interest to you. The experiment will take about 30 minutes and no further participation is required.

Please be assured that your answers are confidential. The data collected during the experiment will not be linked to personally identifying information and no individual person's answers will ever be identified in any report.

As a reward for participating, you will have the opportunity to be entered in a lottery for a \$100 gift certificate to Amazon.com.

To take the survey, please click on the link below:

<http://{URL}>

Or you can copy the URL and paste it into your browser. If you have any difficulty logging in, please reply to this message for assistance.

Kelly Garrett
Ph.D. candidate
University of Michigan School of Information

Directions follow-up

I recently sent you an email providing information about how to participate in a Web-based experiment examining the factors that shape people's news preferences being conducted by researchers at the University of Michigan.

As I said in that message, your input is very important. Participation is easy, and participants can enter in lottery for a \$100 gift certificate to Amazon.com. I hope you will take the 25-30 minutes needed to be included.

To take the survey, please click on the link below:

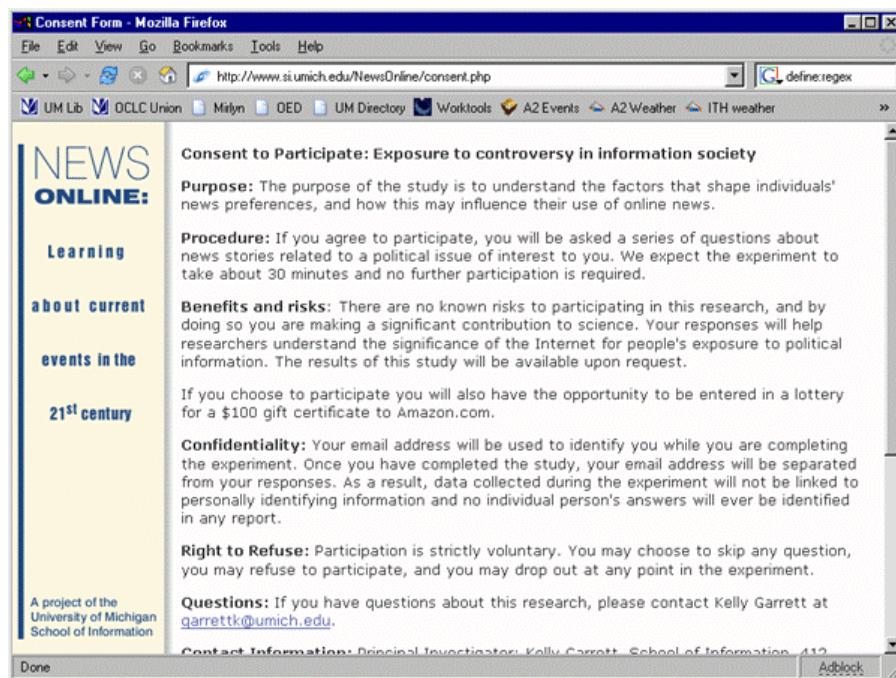
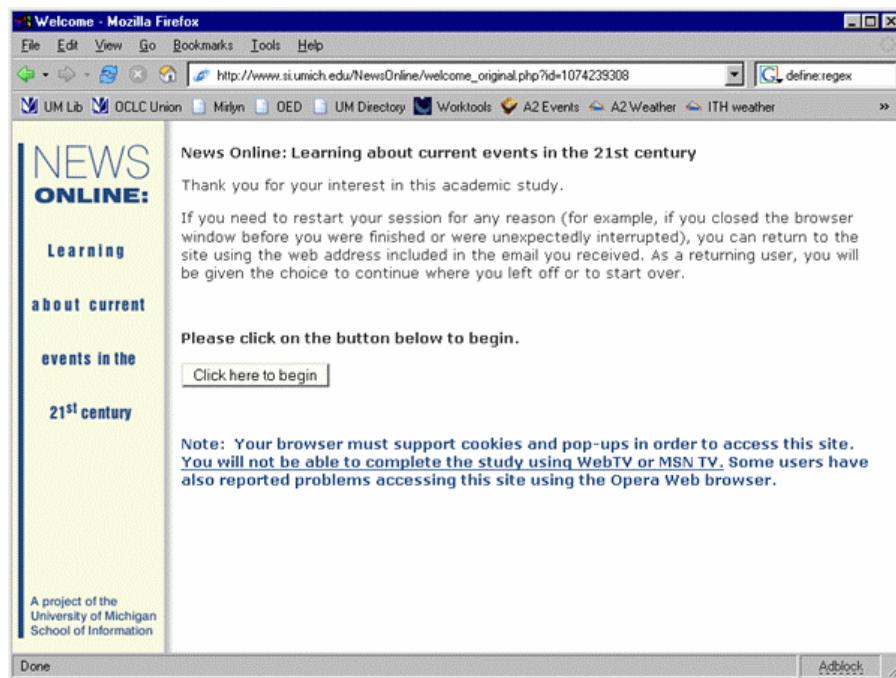
<http://{URL}>

Or you can copy the URL and paste it into your browser. If you have any questions about the project, or have difficulty logging in, please contact me by replying to this message.

Kelly Garrett
Ph.D. candidate
University of Michigan School of Information

APPENDIX D

SCREENSHOTS



Issue Selection - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/issueSelect.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather >

**NEWS
ONLINE:**

Learning
about current
events in the
21st century

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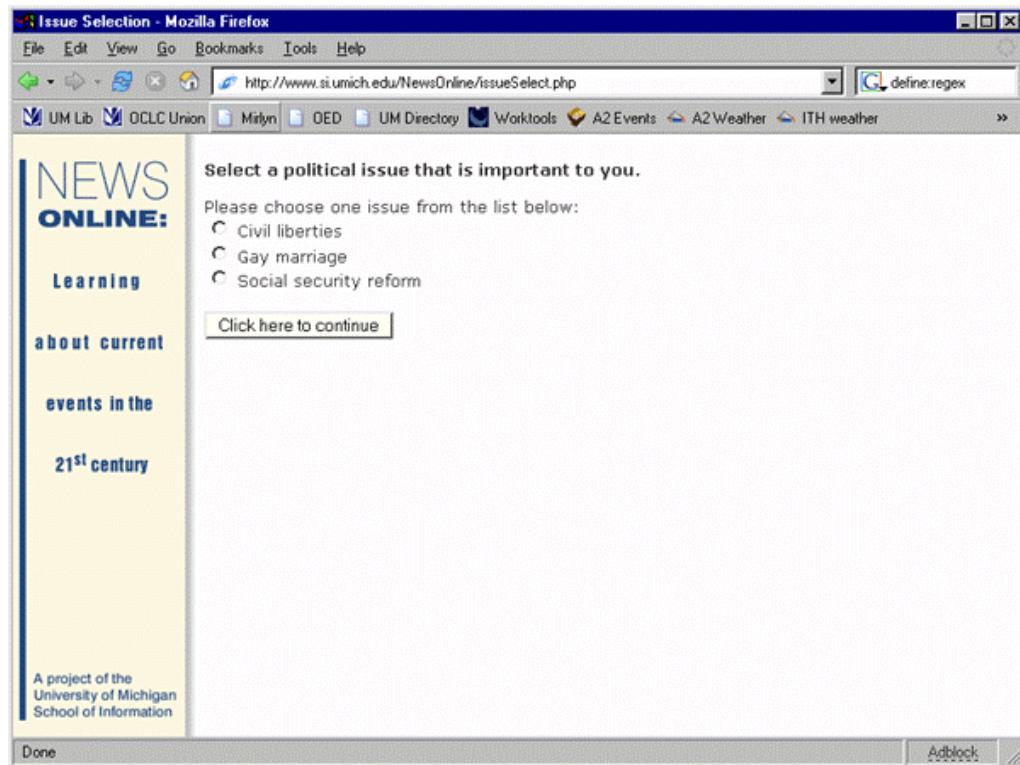
Select a political issue that is important to you.

Please choose one issue from the list below:

Civil liberties
 Gay marriage
 Social security reform

[Click here to continue](#)

Done Adblock



Issue Position - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/issuePosition.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather >

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In the past 12 months, how much have you heard or read about the issue?

A lot
 Some
 A little
 Nothing at all

In the past 12 months, how often have you participated in meetings, demonstrations, or other activities related to the issue?

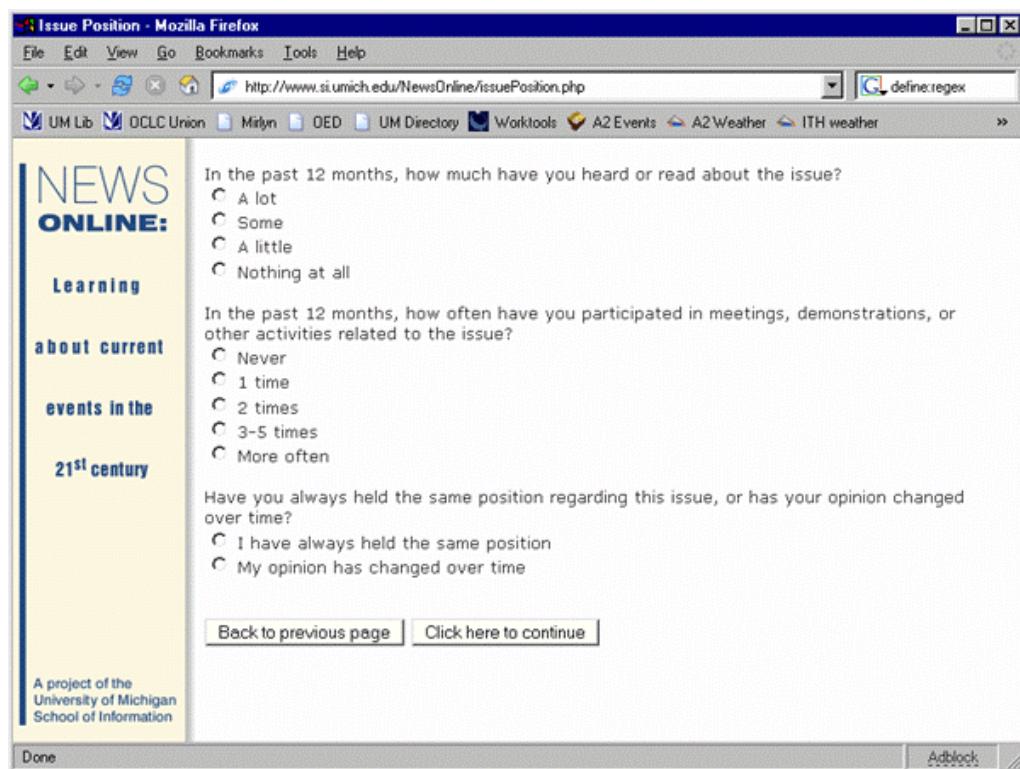
Never
 1 time
 2 times
 3-5 times
 More often

Have you always held the same position regarding this issue, or has your opinion changed over time?

I have always held the same position
 My opinion has changed over time

[Back to previous page](#) [Click here to continue](#)

Done Adblock



News Report Selection - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/newsReport.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather

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Please indicate which of the following news reports you are interested in reading.

These are real news reports published within the last few days. How many you select is up to you. You will be given an opportunity to read the report(s) later.

President Bush Touts Social Security Reform, This Time With A Twist (NY1 News)
Talking up his plans for Social Security reform before a prime-time audience Thursday night, President George W. Bush proposed cutting benefits for wealthier retirees.

Bush set to shift approach on Social Security reform (Financial Times)
Faced with growing public disapproval of the centrepiece of his plan to reform Social Security, President George W. Bush was expected to take a new approach on Thursday night, using a prime-time press conference to underscore how he would guarantee the long-term solvency of the system.

Students to Rally for Social Security Reform on 75 Campuses Nationwide (U.S. Newswire via Yahoo! News)
Students for Saving Social Security (SSSS) is a non-partisan, grassroots campaign on college campuses across the nation advocating for Social Security reform through personal ownership. SSSS is leading the charge to inform and mobilize today's college students to advocate for personal accounts. Unlike Rock the Vote, SSSS represents the interest of the vast majority of college students

Bush proposes reform to save Social Security (Houston Chronicle)

WASHINGTON — Bush's proposal to reform Social Security is likely to face a difficult political battle in Congress, but it may have a better chance than previous attempts to pass legislation.

Done Adblock

News Report Assessment - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/newsReportAssess.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather

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Please answer a few questions about each of the five news reports using the information shown below.

First decide whether the story is related to **Social security reform**, the political issue you selected. If it is, several additional questions will be displayed. You do not need to spend much time evaluating each report. Just assess it based on the information provided. You will have a chance to read the stories you selected shortly. It typically takes about 5 minutes to complete this section.

President Bush Touts Social Security Reform, This Time With A Twist (NY1 News)
Talking up his plans for Social Security reform before a prime-time audience Thursday night, President George W. Bush proposed cutting benefits for wealthier retirees.

This news report is related to the political issue I selected.

Yes No

This is the first time I have answered questions about this news report.

Yes, it is the first No, I have already assessed it. (It's listed on this page more than once.)

I have heard about the events reported here before.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

I expect the events reported here to affect me personally.

Strongly Neither agree nor disagree Disagree Strongly

Done Adblock

News Report Instructions - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/readNewsPractice.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather >

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21st century

Please take a moment to verify that your browser allows pop-ups from this site.
To open a new pop-up window, click on the underlined text below. You will need to close the window to continue.
Please try this now.

Sample News Report (The Daily)
Clicking this link will open a new window. Close the window to return to this page.

- If the pop-up didn't appear, you may be using pop-up blocking software. Please disable the block and try the link again.
- If you have returned to this page without closing the news report window, please close that window now.

After you have tested the pop-up, use the button below to continue.

[Back to previous page](#) [Click here to continue](#)

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Done Adblock

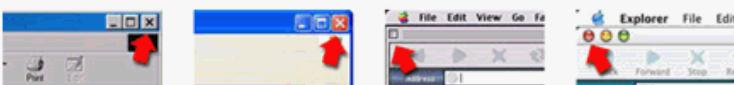
Sample News Report - Close this window to continue - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/sampleNewsReport.html define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather >

A sample news report is displayed below. **Please close this window to continue.**
Several common buttons for closing windows are shown here. These instructions will not be visible when viewing a real news reports.



The Times

Sample News Report

By JOHN DOE

Published: November 1, 2004

ANYTOWN, November 1 – This is a test. This is not a real news story. Lorem ipsum, Dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea



Done Adblock

Read News Reports - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/readNewsReports.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather

**NEWS
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You may now read the news report(s) you selected earlier.

The reports are listed below. Click on an underlined title to view a report, and close the window when you are done. After answering a few follow-up questions you will be returned to this page so that you may select another report to view. When you have read all that you care to, click the "Click here to continue" button at the bottom of the page. You have up to 15 minutes to view these reports.

Notice: The researchers have no control over the views or images presented in these news reports. Any report you select will be presented as published by the responsible news organization, including potentially offensive language or images. You may stop viewing these reports at any time.

President Bush Touts Social Security Reform, This Time With A Twist (NY1 News)
Talking up his plans for Social Security reform before a prime-time audience Thursday night, President George W. Bush proposed cutting benefits for wealthier retirees.

Students to Rally for Social Security Reform on 75 Campuses Nationwide (U.S. Newswire via Yahoo! News)
Students for Saving Social Security (SSSS) is a non-partisan, grassroots campaign on college campuses across the nation advocating for Social Security reform through personal ownership. SSSS is leading the charge to inform and mobilize today's college students to advocate for personal accounts. Unlike Rock the Vote, SSSS represents the interest of the vast majority of college students

Bush proposes reform to save Social Security (Houston Chronicle)
WASHINGTON - With polls showing widespread disapproval of his Social Security plan

Done Adblock

News Report Followup Questions - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/newsReportFollow.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather

**NEWS
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Please answer these follow-up questions for the story you just read.

I was able to view this news report.
 Yes No

This is the first time I have read this news report.
 Yes, the report was new to me. No, I have read this report before.

I learned something from this news report.
 Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

The news report described arguments supporting my political viewpoint.
 Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

It demonstrated that others support my political viewpoint.
 Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

It described arguments opposing my political viewpoint.
 Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

Done Adblock

Demographic questions - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/demographic.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather >>

**NEWS
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Now we have a few last questions for statistical purposes only.

Where did you first hear about this study?

AlterNet email
 Moving Ideas email
 The Washington Dispatch email
 WorldNetDaily email
 Telephone Survey

What is your sex?

Male
 Female

What is your age?

Age:

What is your zip code?

Zip code:

Are you the parent or guardian of any children under the age of 18 now living in your household?

Yes
 No

What is the last grade of class you completed in school?

None, or grades 1-8

Done Adblock

Gift certificate drawing entry - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.si.umich.edu/NewsOnline/political.php define:regex

UM Lib OCLC Union Marilyn OED UM Directory Worktools A2 Events A2 Weather ITH weather >>

**NEWS
ONLINE:**

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If you would like to be included in the drawing for a \$100 gift certificate, please answer the following questions.

The information you provide here is not linked to the results of the experiment.

Please enter your email address

Email:

Which of the following individuals was **not** a candidate in the 2004 presidential election?

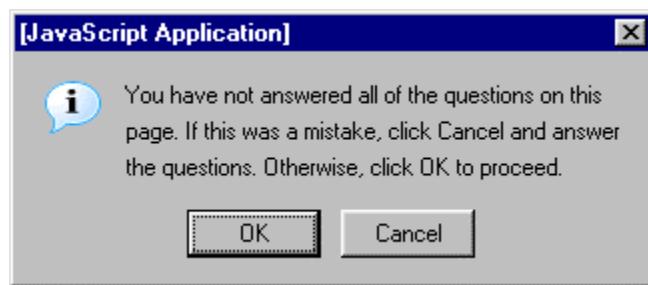
Bush
 Kerry
 Gore

[Back to previous section](#) [Click here to continue](#)

Done Adblock



Miscellaneous instructions



APPENDIX E

EXPERIMENT QUESTIONNAIRE

ISSUE SELECTION AND BACKGROUND

Please choose one issue from the list below:

- 1 Civil liberties
- 2 Gay marriage
- 3 Social security reform

In the past 12 months, how much have you heard or read about the issue?

- 1 A lot
- 2 Some
- 3 A little
- 4 Nothing at all

In the past 12 months, how often have you participated in meetings, demonstrations, or other activities related to the issue?

- 1 Never
- 2 1 time
- 3 times
- 4 3-5 times
- 5 More often

Have you always held the same position regarding this issue, or has your opinion changed over time?

- 1 I have always held the same position
- 2 My opinion has changed over time

NEWS ITEM ASSESSMENT – PROSPECTIVE

This news report is related to the political issue I selected.

- 1 Yes
- 2 No

This is the first time I have answered questions about this news report.

- 1 Yes, it is the first time.
- 2 No, I have already assessed it. (It's listed on this page more than once.)

I have heard about the events reported here before.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

I expect the events reported here to affect me personally.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

I expect the news report to describe arguments supporting my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

I expect it to demonstrate that others support my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

I expect it to describe arguments opposing my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

I expect it to demonstrate that others oppose my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

NEWS ITEM ASSESSMENT – RETROSPECTIVE

I was able to view this news report.

- 1 Yes
- 2 No

This is the first time I have read this news report.

- 1 Yes, the report was new to me.
- 2 No, I have read this report before.

I learned something from this news report.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

The news report described arguments supporting my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

It demonstrated that others support my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

It described arguments opposing my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

It demonstrated that others oppose my political viewpoint.

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

DEMOGRAPHICS

Where did you first hear about this study?

- 1 AlterNet email
- 2 Moving Ideas email
- 3 The Washington Dispatch email
- 4 WorldNetDaily email
- 5 Telephone Survey

What is your sex?

- 1 Male
- 2 Female

What is your age? _____

What is your zip code? _____

Are you the parent or guardian of any children under the age of 18 now living in your household?

- 1 Yes
- 2 No

What is the last grade of class you completed in school?

- 1 None, or grades 1-8
- 2 High school incomplete (grades 9-11)
- 3 High school graduate (grade 12 or GED certificate)
- 4 Technical, trade or vocational school AFTER high school
- 5 Some college, no 4-year degree (includes associate degree)
- 6 College graduate (B.S., B.A., or other 4-year degree)
- 7 Post-graduate training/professional school after college (towards a Masters degree or Ph.D., Law or Medical school)

Are you married, living as married, divorced, separated, widowed, or have you never been married?

- 1 Married
- 2 Living as married
- 3 Divorced
- 4 Separated
- 5 Widowed
- 6 Never been married

Are you now employed full-time, part-time, retired, or are you not employed for pay?

- 1 Employed full-time
- 2 Employed part-time
- 3 Retired
- 4 Not employed for pay

Are you also a full- or part-time student?

- 1 Yes, full-time
- 2 Yes, part-time
- 3 No

Are you, yourself, of Hispanic or Latino origin or descent, such as Mexican, Puerto Rican, Cuban, or some other Latin American background?

- 1 Yes
- 2 No

What is your race? Are you white, black Asian, or some other race?

- 1 White
- 2 Black or African-American
- 3 Asian or Pacifica Islander
- 4 Native American/American Indian
- 5 Other: _____

In politics today, do you consider yourself a Republican, Democrat, or Independent?

- 1 Republican
- 2 Democrat
- 3 Independent
- 4 Other: _____

Would you say your views in most political matters are very liberal, somewhat liberal, moderate, somewhat conservative, or very conservative?

- 1 Very liberal
- 2 Somewhat liberal
- 3 Moderate
- 4 Somewhat conservative
- 5 Very conservative

These days, many people are so busy they can't find time to register to vote, or move around so often they don't get a chance to re-register. Are you now registered to vote in your precinct or election district, or not?

- 1 Yes, I am a registered voter
- 2 No, I am not a registered voter

How often do you go to church, synagogue, or some other place of worship?

- 1 Daily
- 2 About once a week
- 3 Several times a year
- 4 Don't go to worship services

What is your religious preference?

- 1 Protestant (includes Baptist, Christian, Episcopalian, Jehovah's Witness, Lutheran, Methodist, Presbyterian, etc.)
- 2 Roman Catholic/Catholic
- 3 Jewish
- 4 Mormon (Church or Jesus Christ of Latter Day Saints)
- 5 Orthodox Church (Greek Orthodox, Russian Orthodox, etc.)
- 6 Islam/Muslim
- 7 Buddhist
- 8 Hindu
- 9 Other religion: _____

Last year, that is in 2003, what was your total family income from all sources before taxes?

- 1 Less than \$10,000
- 2 \$10,000 to under \$20,000
- 3 \$20,000 to under \$30,000
- 4 \$30,000 to under \$40,000
- 5 \$40,000 to under \$50,000
- 6 \$50,000 to under \$75,000
- 7 \$75,000 to under \$100,000
- 8 \$100,000 or more

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