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# Issue Publics in the New Information Environment

## Selectivity, Domain Specificity, and Extremity

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The present research revisits citizen competence in the changing political and information environment, considering citizens as pluralistic issue publics. Using 2000 and 2004 American National Election Study data, Study 1 explores the conceptual premises of issue publics and the impact of the Web on domain-specific knowledge and extremity. Study 2 uses a unique data set combining an innovative direct measure of users' Web behavior records with survey responses from those users in the context of the 2004 U.S. general election. The results shed light on issue publics' information acquisition on the Web. This complementary data set provides a more complete picture of how issue publics develop unique patterns of information acquisition and make voting decisions. The findings indicate that issue publics enhanced their domain-specific knowledge by using information highly selectively. In addition, their selective information use contributed to increases in extremity and issue voting patterns. Implications for the functioning of democracy are discussed.

**Keywords:** *issue publics; Internet; selectivity; domain specificity; extremity; citizen competence*

Scholars have painted starkly contrasting pictures of "citizen competence" (i.e., whether preferences are correlated with values and interests, whether citizens understand the relevancy of politics and use their political knowledge in making political decisions, and whether they hold stable and consistent attitudes; for details on citizen competence, see Kuklinski & Quirk, 2001). In answer to the questions of citizen competence, different schools of thought have emerged. One school of thought has argued that the majority of American citizens appear to be uninterested in politics in general (e.g., Downs, 1957) and that the level of general political knowledge is depressingly low (e.g., Delli Carpini & Keeter, 1996). These scholars claim that despite a flood of information, citizens appear generally uninformed about politics and lack crystallized attitudes (e.g., Converse, 1964, 1970). Thus, democracy functions because of the interest of a small number of politically sophisticated citizens (i.e., elites; see Zaller, 1992), the most educated (Price & Zaller, 1993), or the attentive public (Almond, 1950; Price, 1992), whose political behavior is based on a wide range of political information consistent with their

attitudes. An opposing school of thought argues that collective rationality (Page & Shapiro, 1992) is sustained because the sum of awareness of the mass public is greater than the sum of its parts. Citizens are not so passive or dumb that they cannot resist elite discourses and construct a discourse of their own (e.g., Gamson, 1992; Graber, 1988). Research supporting this school of thought suggests that people use information shortcuts or heuristics (e.g., Lupia, 1994; Lupia & McCubbins, 1998) such as the “identification of two parties” in making voting decisions; thus, a “fully” informed citizenry is perhaps unnecessary for the functioning of democracy (e.g., Graber, 1994; Popkin, 1991).

An alternative view that actually complements both perspectives posits that citizenry is made up of *issue publics*, or pluralistic small groups of people who are intensely concerned about particular issues (Converse, 1964). Citizens may not have mastery over a wide range of political issues but rather are *specialists* who are passionately concerned with particular issues on the basis of their values, identities, and interests. As specialists, they are well informed about the issues of their concern but do not necessarily care about issues beyond the ones that concern them (e.g., Converse, 1964; Hutchings, 2003; Iyengar, 1990; Krosnick, 1990; Krosnick, Berent, & Boninger, 1994; Krosnick & Telhami, 1995). Therefore, while citizens are not broadly attentive to a wide range of issues on the political landscape, the attitudes they *do* hold about their particular issues of concern are consistent and stable.

The idea of issue publics has become increasingly relevant in the changing political and information environments. After the collapse of communism, the relatively simple ideological dichotomy (i.e., capitalism vs. socialism) gave way to a multiplicity of ideologies. As a result, various specialized social issues previously regarded as relatively marginal (such as abortion, sexual orientation, racial conflict, gender, and environmental issues) compared with broad issues such as the economy now play a substantive role in mundane politics (Cook, Jelen, & Wilcox, 1993). Furthermore, the new media environment characterized by increased decentralized media outlets, diversity in content, and increased user controllability (Pavlik, 2001; Webster & Phalen, 1992) has facilitated a substantial segmenting of the public agenda, threatening the journalistic role of setting a “grand” national agenda (Althaus & Tewksbury, 2002; Pavlik, 1999; Tewksbury, 2003). While traditional media (such as television or newspapers) can do little to satisfy the need for more specialized information, new media (such as the Web) allow for specialized and in-depth information to those interested in specific issues. Individuals’ motivations for using new media vary widely within most populations (e.g., Papacharissi & Rubin, 2000; Tewksbury & Althaus, 2000), resulting in substantial audience segmentation within the general population.

To date, however, the implications of the changing political and information environments have not yet been fully incorporated in the theoretical discussion of issue publics. In particular, despite an increasing body of research on the effects of the Web

on political knowledge (e.g., Althaus & Tewksbury, 2002; Dalrymple & Scheufele, 2007; Eveland, Cortese, Park, & Dunwoody, 2004; Eveland & Dunwoody, 2000; Eveland, Marton, & Seo, 2004; Tewksbury & Althaus, 2000) and political participation (e.g., Scheufele & Nisbet, 2002; Shah, Cho, Eveland, & Kwak, 2005), most of the research inevitably assumes citizens as a “mass audience,” paying little attention to systematic differences in various distinctive segments within the mass audience, that is, issue publics.

This research takes a different approach to adequately address the issue of citizen competence in the new political information environment. At a theoretical level, this research reconsiders citizens as pluralistic issue publics (Converse, 1964) rather than an aggregate mass audience and investigates how members of issue publics differ in their communication, political knowledge and voting patterns by highlighting their selectivity, domain specificity, and extremity. This research incorporates two complementary studies. Study 1 explores the conceptual premise of issue publics and the impact of the new media (especially the Web) on domain-specific knowledge and extremity, using 2000 and 2004 American National Election Study (ANES) data. With a set of data combining direct measures of users’ Web behavior records and their survey responses, Study 2 details the process by which issue publics use the Web to develop unique patterns in political information acquisition and voting decisions. In this way, Study 2 offers an outlook on how diverse members of issue publics use the Web in political decision-making processes and, ultimately, how the new media environment may or may not contribute to citizen competence in democracy.

### **Citizens in the Changing Political and Information Environment: Issue Publics**

By focusing attention on the recent changes in the political as well as media landscape, this research encapsulates the idea of *issue publics* (Converse, 1964). The concept of issue publics is based on the assumption that most people have few resources and little motivation to pay close attention to each and every issue confronting the nation as a whole because the information cost for becoming fully informed is substantial. Individuals indeed do not have to be highly sophisticated or well educated to form attitudes concerning the issues they consider important (Berent & Krosnick, 1995). Issue publics are specialists, not necessarily understanding issues other than the issue that concerns them.

One man takes an interest in policies bearing on the Negro [*sic*] and is relatively indifferent to or ignorant about controversies in other areas. His neighbor may have few crystallized opinions on the race issue, but he may find the subject of foreign aid very important. Such sharp divisions of interest are part of the term ‘issue publics’ is intended to convey. (Converse, 1964, p. 246)

Since Converse's (1964) auxiliary concept, many scholars have strived to identify issue publics in more structured and integrated forms. Some studies have simply defined issue publics as individuals who have opinions on particular issues, assuming that they have more stable and crystallized attitudes than those who voted "neutral," "no opinion," or "don't know" (for details, see Krosnick & Telhami, 1995). However, recent studies (e.g., Converse, 1970; Zaller & Feldman, 1992) have shown that respondents who offer any opinions on particular issues might not necessarily show interest in those issues. Other studies have identified issue publics as a demographic membership (e.g., Page & Shapiro, 1992; Price & Zaller, 1993). For example, women were assumed to be members of the issue public on gender-related issues. Likewise, Jewish people were assumed to be members of the issue public with regard to issues concerning the Middle East. Although this might tap into one important aspect of issue publics, it would tend to overestimate (as can be seen in the gender issue example) or underestimate (as can be seen in the Middle East issue example) the size of issue public members. Subsequently, this approach may inappropriately include people who are not passionate about particular issues.

The most sensible trend to date defines issue publics in terms of personal issue importance (e.g., Krosnick, 1990). Members of a particular issue public are defined as those who rate highly on the question of how important the issue is to them personally. A number of studies in social and political psychology have shown that people who consider an issue to be personally important do indeed tend to be more cognitively and behaviorally involved (for a more detailed discussion, see Petty & Krosnick, 1995). Distinguished from self-defined goals and values, personal issue importance captures the subjective concerns, passion, and interest concerning a particular issue (Boninger, Krosnick, Berent, & Fabrigar, 1995). Supporting this, Miller (1983) showed that personal issue importance is the most effective indicator of the degree of issue specialization of issue publics. Accordingly, Krosnick and his colleagues' studies (Krosnick, 1990; Krosnick & Berent, 1993; Krosnick & Telhami, 1995) argued that personal issue importance is the best proxy for issue publics (cf. Price et al., 2006). Taking all this into consideration, this research defines members of an issue public as individuals who consider a particular issue personally important (Krosnick, 1990; Krosnick & Telhami, 1995).

By definition, the concept of issue publics differs from the public that is generally interested in public affairs across various issues (i.e., the attentive public; see Almond, 1950). Whereas the attentive public consists of generalists who are aware of different kinds of unrelated issues, issue publics are specialists, not necessarily understanding issues other than the particular issues in which they are interested. Personal issue importance on different issues, therefore, should be distinguished from one another. The concept of issue publics also differs from the public that is well educated on political issues, or those who are cognitively more able to follow

the issues. Personal issue importance on a particular issue should be differentiated from education, general political interest, and general political knowledge.

### **Issue Publics' Domain Specificity and Selectivity**

Further theoretical discussion of issue publics has clearly suggested that issue publics should exhibit a high level of domain-specific knowledge.<sup>2</sup> To the degree that people are concerned with a particular issue, the knowledge construct on that particular issue is more accessible than others (i.e., accessibility bias; Iyengar, 1990). This accessibility bias, however, does not appear to provide a full explanation for issue publics' domain-specific knowledge. Accordingly, Krosnick et al. (1994) found that accessibility explained only a small portion of the variance in domain specificity.

*Selectivity* indeed provides another explanation for issue publics' domain-specific knowledge. Issue publics exhibit a high level of domain-specific knowledge because they are committed to "selectively gather information about the issue" (Boninger et al., 1995). Here, this view has a clear disconnect with the external utility perspective (Atkin, 1973; Lupia & McCubbins, 1998), which posits that issue publics would not pursue further information on their particular concerns because the external utility of gathering more information is relatively low. However, Berent and Krosnick (unpublished data, cited in Boninger et al., 1995) disputed the external utility perspective, clearly illustrating that issue publics are naturally inclined to issue-specific selective exposure even when external utility is low. In their study, participants were asked to evaluate political candidates on the basis of their issue statements and allowed to read only three out of a possible six statements for each candidate. As expected, participants selected information relevant to issues they considered important at the expense of information relevant to issues they considered unimportant. Consistent with this result, participants with higher levels of personal issue importance also reported being more interested in obtaining information that centered on their particular concerns. In addition, Berent and Krosnick provided party affiliation information so that participants could easily infer each candidate's position regarding the issues. Participants' interest in exposure to the candidates' issue statements should have been reduced when the party affiliation was provided if information selection was based solely on instrumental utility, as the external utility perspective predicted. The results showed, however, that even when given this information, participants who were particularly concerned with an issue preferred exposure to relevant information just as much as when the party affiliations were unknown.

A crucial juncture is reached where issue publics' natural inclination to issue-specific selective exposure comfortably fits with the unique technological features of the Web. Contrary to online information, the centralized and linear traditional news media (such as television and newspapers) tend to focus on the least common

denominator to satisfy the majority audience. Online information, on the other hand, is inherently specialized within particular topics, since the medium is decentralized by diverse message creators. Texts are no longer linear and sequential from start to finish. Rather, words or passages can be linked to others anywhere in the document. Clearly, this feature has not been possible with any other form of traditional media or even with similar technologies such as videotext, which organizes information in a hierarchical tree structure, from general to detailed menu options (Dillon & Tombaugh, 1982; Noll, 1985). Furthermore, the presentation of online information has a parallel rather than a linear structure, using a menu format or index and placing equal weight on each story. The prominence of each story is therefore approximately the same. With the unique technological features of the Web, individuals are able to tailor their news agendas to their own personal interests. Supporting this, Tewksbury and Althaus (2000) (also Althaus & Tewksbury, 2002) found an increased level of selectivity among users of the online version of the *New York Times* compared with the printed version. Similarly, Johnson and Kaye (2000) found that politically interested people showed a greater reliance on the Internet rather than television for news consumption. This implies that citizens in the new information environment—issue publics—may be drawn to new communication technologies that enable them to select information that fits with their personal issue concerns. Individuals “contextualize” stories along with the sequence of information selection and develop in-depth knowledge on specific issues (Fredin, 1997). In support of this, Prior’s (2005) recent survey study shows that cable TV and the Internet in particular increase the knowledge gap between those who have different content preferences. In light of all this, the following hypotheses are formulated:

*Hypothesis 1a:* Members of issue publics use media that allow a high level of selective exposure more than nonmembers of issue publics.

*Hypothesis 1b:* Members of issue publics engage in a higher level of issue-specific selectivity in information gathering than nonmembers.

*Hypothesis 2a:* The use of media that allow a high level of selective exposure is positively associated with domain-specific knowledge.

*Hypothesis 2b:* A high level of issue-specific selectivity leads to increases in domain-specific knowledge when online information selection is involved.

## Issue Publics’ Extremity and Selectivity

Converse (1964) noted that issue publics’ attitudes toward the issues of their concerns should be stable compared with those of the general public. The recent Canadian national survey data in Fournier, Blais, Nadeau, Gidengil, and Nevitte’s (2003) study supported the positive relationship between issue importance and extremity across five issues (national unity, deficit, jobs, crime, and social programs) when evaluating government performance.

Selectivity indeed contributes to issue publics' extremity, as issue publics "use" selectively gathered information in forming attitudes (Boninger et al., 1995). Lavine empirically showed that issue involvement led to selective information gathering, which in turn increased attitude extremity and decreased attitude ambivalence when making evaluations (Lavine, 2001; Lavine, Borgida, & Sullivan, 2000). Diverse issue publics use the Web to select information they consider personally important, hence shifting to more extreme viewpoints. For this reason, Sunstein (2002) pointed to the Web as one of the reasons we have observed an increase in political polarization. Similarly, Jones (2002) found that new media (in that case political talk radio) users leaned toward further extremes over time. Taken altogether, the following hypotheses are developed:

*Hypothesis 3a:* Issue-relevant, selective exposure contributes to increases in attitude extremity.

*Hypothesis 3b:* Issue-relevant, selective exposure contributes to increases in extremity in candidate evaluations.

Considering the effects of selectivity on extremity, it is reasonable to infer that after individuals search for issue-specific information, their voting criteria should be focused less on candidates' images, personalities, and party affiliations than on their core issues. Supporting this, Riggle, Ottai, Wyer, Kuklinski and Schwarz (1992) found that voters tended to use stereotypical information when other forms of information (e.g., issue positions) were not available. Therefore, the following is hypothesized:

*Hypothesis 3c:* Issue-specific, selective information searching on the Web contributes to increases in the tendency for issue voting.

## **Study 1: Analysis of the 2000 and 2004 ANES Data**

### **Overview**

Using the 2000 ( $n = 1,807$ ) and 2004 ( $n = 1,212$ ) ANES data, Study 1 investigates (a) whether issue publics are likely to be more selective in their communication patterns than the general public (Hypothesis 1a) and (b) whether the use of highly selective new media such as the Web is associated with domain-specific knowledge (Hypothesis 2a), as well as attitude extremity (Hypothesis 3a). The two representative election study data sets will increase the validity and generalizability of the results of the study.



## Focus Issue

The present study used abortion as an individual case issue. For the past several decades, the abortion issue has been a dominant subject in American politics (Alvarez & Brehm, 2002). Several studies (e.g., Abramowitz, 1995; Alvarez, 1994; Verba et al., 1995) have indicated that this issue heavily influenced citizens' voting choices and had a great impact on the election outcome. However, public opinion regarding abortion seems ambivalent (Abramowitz, 1995), and the formation of public opinion regarding the issue appears to be influenced by more than just individuals' core values but by the information environment as well (e.g., Zaller, 1992).

## Measures

*Personal issue importance.* Personal issue importance was measured by the degree to which the abortion issue is important to an individual personally (1 = *not at all important*, 5 = *extremely important*;  $M_{2000} = 3.59$ ,  $SD_{2000} = 1.06$ ;  $M_{2004} = 3.82$ ,  $SD_{2004} = 1.01$ ). Members of the abortion issue public are defined as those who rate it higher than the mean on a personal issue importance scale.

*Generality in politics.* General political knowledge (constructed by indexing the correct identification of politicians and public figures: Trent Lott, William Rehnquist, Tony Blair, and Janet Reno in 2000,  $M_{2000} = 1.09$ ,  $SD_{2000} = 1.11$ ; Tony Blair, William Rehnquist, Dick Cheney, and Dennis Hastert in 2004,  $M_{2004} = 1.93$ ,  $SD_{2004} = 1.15$ ), general political interest (measured by questioning how much an individual followed government and public affairs, 0 = *not at all*, 4 = *a great deal*;  $M_{2000} = 2.67$ ,  $SD_{2000} = 0.96$ ;  $M_{2004} = 2.15$ ,  $SD_{2004} = 0.98$ ), and education (on a 7-point scale;  $M_{2000} = 4.3$ ,  $SD_{2000} = 1.61$ ;  $M_{2004} = 4.3$ ,  $SD_{2004} = 1.61$ ) were measured to gauge generality in politics.

*Domain-specific knowledge.* As Delli Carpini and Keeter (1996) suggested, the present study employed the understanding of issue positions of political candidates as a proxy for domain-specific knowledge. The study constructed an index of domain specific knowledge. If an individual identified either one of the candidates' positions correctly, 1 point was given. If an individual identified both of the candidates' positions correctly, 2 points were given. "Don't know" responses and incorrect identifications were coded 0. The range of scores was thus 0 to 2 ( $M_{2000} = 0.80$ ,  $SD_{2000} = 0.78$ ;  $M_{2004} = 0.69$ ,  $SD_{2004} = 0.74$ ).

*Attitude extremity.* Attitude extremity was measured on the basis of the self-placement of issue position on the abortion issue and by how far the answers moved from the neutral point. Thus, "The law should permit abortion only in the case of rape, incest, or when the woman's life is in danger" and "The law should permit abortion for reasons other than rape" were coded 1, and "By law, abortion should never be permitted" and

"By law, a woman should always be able to obtain an abortion as a matter of personal choice" were coded 2 ( $M_{2000} = 1.55$ ,  $SD_{2000} = 0.49$ ;  $M_{2004} = 1.5$ ,  $SD_{2004} = 0.50$ ).

*Web use.* Web use was measured by questioning whether an individual received election campaign information (yes = 1 [25.7% in 2000 and 46.8% in 2004], no and don't have access to the Internet = 0). In the 2004 data, the frequency of online news was also measured (0 = *not at all*, 7 = *read every day*;  $M_{2004} = 1.41$ ,  $SD_{2004} = 2.3$ ).

*Other communication variables.* Television news viewing was obtained by measures of local news exposure and national network news exposure (0 to 7 days for each) and the degree of attention to local news and national news (1 = *none*, 5 = *a great deal for each*). Each of the exposure measures was multiplied by each of the attention measures. Total television news viewing was created by adding these two measures ( $M_{2000} = 22.50$ ,  $SD_{2000} = 21.32$ ;  $M_{2004} = 16.8$ ,  $SD_{2004} = 14.84$ ). Newspaper reading was obtained by multiplying campaign news reading and the degree of attention to campaign news ( $M_{2000} = 1.49$ ,  $SD_{2000} = 1.8$ ;  $M_{2004} = 1.3$ ,  $SD_{2004} = 1.41$ ). Political talk radio listening was measured by multiplying the frequency of radio political talk show listening (4 points) and attention to the show (5 points) ( $M_{2000} = 2.1$ ,  $SD_{2000} = 3.67$ ). In the 2004 data, radio listening was obtained by adding the frequency measure of campaign discussion and speech listening (0 to 7 days) and political talk show listening ( $M_{2004} = 1.95$ ,  $SD_{2004} = 2.1$ ). Talking about politics was measured by the frequency of political discussion with family or friends (0 to 7 days) in both the 2000 and 2004 data ( $M_{2000} = 4.12$ ,  $SD_{2000} = 2.8$ ;  $M_{2004} = 2.66$ ,  $SD_{2004} = 2.55$ ).<sup>3</sup>

## Results and Discussion

This study first explored whether the concept of personal issue importance was empirically distinguished from generality in politics, such as general political interest, general political knowledge, and education. Correlations revealed that personal issue salience was not significantly related to generality in politics in 2000. In the 2004 data, however, personal issue importance appeared to be correlated to general political interest and education, although only slightly ( $r_{\text{personal issue importance, general interest}} = .08$ ,  $p < .01$ ,  $r_{\text{personal issue importance, education}} = .11$ ,  $p < .01$ ). Interestingly, in both the 2000 and the 2004 data, general political knowledge was inversely correlated to personal issue importance of the abortion issue ( $r_{2000} = -.05$ ,  $p < .01$ ;  $r_{2004} = -.08$ ,  $p < .01$ ). Overall, empirical evidence appeared to support the premise that personal issue importance is distinguished from education, as well as generality in politics.

This study proposed that because of the greater availability of specialized and in-depth information and increased interactivity, new media allow members of issue publics to select information they find personally important and that benefits them (Hypothesis 1a). The findings of the 2004 data indicated that members of the abortion issue public (who rated above the mean score on the personal issue importance of the abortion issue scale) used political talk radio more than nonmembers,  $M = 2.11$ ,

$SD = 2.13$ , mean difference = 0.40,  $t(1, 1,060) = 2.99$ ,  $p < .01$ . Although members of the issue public appeared to use the Web more than nonmembers, the difference was not statistically significant at a conventional level,  $M = 1.52$ ,  $SD = 2.38$ , mean difference = 0.28,  $t(1, 1,060) = 1.99$ ,  $p < .10$ . In addition, members of the issue public tended to talk about politics with family and friends more than nonmembers,  $M = 2.9$ ,  $SD = 2.57$ , mean difference = 0.63,  $t(1, 1,060) = 3.92$ ,  $p < .001$ . However, there was no statistically significant difference between members of the issue public and nonmembers in traditional media usage patterns. The tendency was found to be similar but not the same in the 2000 data; while no difference was found between members and nonmembers of the issue public in traditional media use, issue publics used political talk radio more and talked about politics more than nonmembers,  $M = 2.24$ ,  $SD = 2.77$ , mean difference = 0.33,  $t(1, 1,083) = 1.8$ ,  $p < .05$ ;  $M = 4.25$ ,  $SD = 2.77$ , mean difference = 0.28,  $t(1, 1,083) = 2.0$ ,  $p < .05$ . Their Web use, though, was not significantly higher than that of the general public at a statistically conventional level. This might be related to the weak and imprecise measure of Web use in the data (i.e., "Have you ever received campaign information on the Web?"). A direct measure of Web exposure appears to be crucial in understanding selectivity. As a whole, though, issue publics appeared to be more inclined toward communication channels allowing for high levels of selectivity.

Drawing on theoretical discussion of issue publics' domain specificity, selectivity, and new media, this study posited that the use of new media with more in-depth and specialized information and interactive technological features enables citizens to be selectively exposed to issues of their concerns, which in turn is associated with a high level of domain-specific knowledge (Hypothesis 2a). The hypothesis was confirmed in both the 2000 and the 2004 data. Whereas traditional news media generally did not appear to have any influence, Web use was positively significantly associated with domain-specific knowledge, even after controlling for other variables (Table 1.1). In the 2004 data, however, television use appeared to be negatively associated with domain-specific knowledge. Political talk radio and talking about politics were also positively associated with domain-specific knowledge. The results imply that citizens benefit from new media such as the Web when acquiring information and as a result can boost competence in the areas of their personal issue importance. On the basis of the previous literature, the study also expected that the Web would contribute to increases in attitude extremity. The 2004 data showed that the Web appeared to be positively associated with attitude extremity (Table 1.2), implying that the Web might facilitate polarization among the public. No statistically significant result, however, was found in the 2000 data. Given that Web use more than doubled in the 2004 election campaign compared with 2000, the differences in the data might imply that the polarization effect has been exacerbated with the growth of the Web. The relationship between new media and attitude extremity or polarization is worth more scholarly attention.

**Table 1.1**  
**Selectivity and Domain-Specific Knowledge**

Variable	2000 ( <i>n</i> = 1,445)	2004 ( <i>n</i> = 946)
Female <sup>a</sup>	.006 (.042)	.046 (.049)
Age	-.005*** (.001)	-.002 (.002)
Education	.049** (.014)	.022 (.017)
Ideology	.020 (.013)	.004 (.014)
Democrat <sup>a</sup>	.023 (.047)	-.053 (.057)
Republican <sup>a</sup>	.084 (.053)	.192 (.060)***
General interest	.048* (.027)	.029 (.032)
General knowledge	.167*** (.021)	.106*** (.026)
Issue importance	.085*** (.019)	.030 (.023)
Television news	.001 (.001)	-.004** (.002)
Newspaper	.001 (.013)	-.010 (.018)
Radio talk show	.012** (.006)	.038*** (.012)
Talking about politics	.016** (.008)	.021** (.010)
World Wide Web <sup>a</sup>	.145*** (.046)	.102** (.052)
<i>R</i> <sup>2</sup>	.208	.132
Adjusted <i>R</i> <sup>2</sup>	.200	.120
<i>SEE</i>	.700	.703
$\Delta R^2$	.016***	.026***

Note: The dependent variable was domain-specific knowledge. Listwise deletion was used for missing cases. Values are unstandardized coefficients of the final model (including communication variables), with standard errors in parentheses. The significance of  $\Delta R^2$  was obtained from an *F* test.

a. Dummy variable.

\*\**p* < .05. \*\*\**p* < .01.

The study of course has some limitations. As with other survey data, the interpretation of causality must be done carefully. Although this study provided relatively strong evidence suggesting that the Web affected domain-specific knowledge and attitude extremity, a lack of direct empirical evidence on the role of selectivity in this process still exists. Furthermore, because this study focused solely on the abortion issue, it may have some limitations in generalizability. The following study attempts to overcome these limitations.

## Study 2: Field Experiment With the Combined Data Set of Web Behavior Records and Surveys

### Overview

Using a field experiment, Study 2 sets the causal relationships among issue publics' Web use, domain-specific knowledge, and extremity and examines the

**Table 1.2**  
**Selectivity and Extremity**

Variable	2004 ( <i>n</i> = 932)
Female <sup>a</sup>	.012 (.035)
Age	-.002** (.001)
Education	.017 (.012)
Religiosity	-.034*** (.012)
Ideology	-.005 (.010)
Democrat <sup>a</sup>	.074* (.040)
Republican <sup>a</sup>	-.094** (.043)
General interest	.003 (.023)
General knowledge	.037** (.018)
Issue importance	.179*** (.034)
Television news	-.000 (.001)
Newspaper	-.003 (.013)
Radio talk show	.004 (.008)
Talking about politics	.011 (.007)
World Wide Web <sup>a</sup>	.067** (.030)
<i>R</i> <sup>2</sup>	.080
Adjusted <i>R</i> <sup>2</sup>	.064
<i>SEE</i>	.483
$\Delta R^2$	.012***

Note: The dependent variable was attitude extremity. Listwise deletion was used for missing cases. Values are unstandardized coefficients of the final model (including communication variables), with standard errors in parentheses. The significance of  $\Delta R^2$  change was obtained from an *F* test.

a. Dummy variable.

\**p* < .10. \*\**p* < .05. \*\*\**p* < .01.

process by which issue publics take advantage of the Web in the context of the 2004 general election. More specifically, this study attempts to confirm the conceptual premise that personal issue importance on different issues are distinguishable from one another and investigates whether members of issue publics and nonmembers differ in the way they gather information on the Web in terms of issue-specific selectivity (Hypothesis 1b). The study also tests whether selectivity on the Web increases domain-specific knowledge (Hypothesis 2b) and explores whether the Web would facilitate differential knowledge gain between members and nonmembers of issue publics. In addition, the study explores whether selectivity on the Web leads to extremity in candidate evaluations (Hypothesis 3b) and issue voting (Hypothesis 3c).

Prior studies have limitations in the validity and precision of their measurement of Web exposure. Most quantitative research has employed survey methods, asking such questions as "How much time in the past week did you spend using the Internet?" or "Did you visit a candidate's Web site during the campaign?" The

problems of self-reporting media exposure (see Chaffee & Schleuder, 1986; Price & Zaller, 1993) become more obvious in the case of the Web (for details, see Tewksbury, 2006), considering the tremendous volume of information, the conceptual ambiguity involving the multidimensional character of the medium (cf. Shah, Kwak, & Holbert, 2001), the cognitive load of information processing (e.g., Eveland & Dunwoody, 2000), and the time absorption (e.g., Agarwal & Karahanna, 2000) its use requires. Given this, we may not adequately measure online activity by simply asking "Have you ever visited a candidate's Web site?" The present study developed an innovative method of measuring information search behavior, adopting a real-time, click-by-click tracking method. Since each individual was given a unique ID, an individual's Web behavior record could be matched with one's pre- and postsurvey responses (for details, see "Web Behavior Recording Program" below).

## Design

This study employed a field experimental design to test the effects of personal issue importance (members of issue publics vs. nonmembers) on selectivity on the Web and how personal issue importance and selectivity on the Web influenced domain specificity and extremity in candidate evaluations. A posttest-only, no-information-search group was also employed as a baseline group (i.e., comparison group) to draw inferences concerning the potential effects of selectivity on the Web. This comparison group enables researchers to infer the amount of differences made possible by experimental manipulations, in this case, information selection. Subjects participated in the study online in a natural setting. The computer program (see "Web Behavior Recording Program" below) randomly assigned participants to the information-search task group or the no-information-search group (i.e., baseline group) at a ratio of 3:1.

## Participants

The study recruited adults (aged 18 to 64 years) with access to the Web who reside in State X. Soliciting participants was done through a mall-intercept technique. Trained recruiters were sent out to retail locations (shopping malls, grocery stores, bookstores, and sports shops) in metropolitan, midsized, and small cities in State X. This study employed a quota sampling method, using age, gender, and race as the quota variables, which were decided on the basis of census data from State X. Once individuals consented, the recruiters gave them a CD containing the Web behavior recording program and asked for e-mail addresses to send out detailed instructions and login information for the study. By giving each individual login information via e-mail, only those who consented to the study were able to participate. The e-mails were sent within 24 hours, and individuals were asked to participate in the study

within 2 weeks from the time of recruitment. Two reminders were sent to individuals who agreed to participate in the study within a week. Participants who completed the study received \$10 (delivered through the mail after the study) as compensation for their time.

Participants were recruited from three different time periods: November 7 to December 7, 2003; February 28 to March 12, 2004; and April 5 to April 10, 2004. A total of 227 subjects completed the study (103 from the first, 84 from the second, and 40 from the third recruitment).<sup>4</sup> Thirty-seven percent of the consenting individuals recruited at the mall participated in this study. The sample generally resembled the population. One hundred seventy participants were randomly assigned to the information-search group, and 57 were assigned to the comparison group. There were no statistically significant differences between the task and control groups in terms of gender, age, race, party identification, and education. The computerized random assignment, therefore, appeared to be successful.

## Procedure

The study was conducted in the context of the 2004 U.S. Senate election in State X. To increase the external validity of the study, real issues, real candidates, and real Web sites were used in the study (for details, see "Study Venue" below). Individuals were asked to install the CD they received upon recruitment onto their personal computers at home. In this way, the individuals were able to participate in the study in a natural environment. The computer program was designed to record individuals' Web behavior in real time, click by click, as well as to guide participants through each stage of the study.

The flow of participation consisted of introduction, consent, presurvey, random assignment (subjects were unaware at this stage), information search (the control group skipped this stage), postsurvey, debriefing, and compensation information. After the presurvey, the computer program randomly assigned individuals to each condition. Next, the subject of the 2004 U.S. Senate race (candidates, issues, etc.) was introduced to individuals under both conditions. Participants in the information-search task condition were asked to search for information on the Web until they felt they had enough information to decide how they would vote in the given election. Individuals assigned to the control group skipped this stage and continued to the posttest. Participants were able to quit the information search at any time by clicking the "Quit searching" button on the software's Web browser. If a participant clicked the "Quit searching" button, a posttest automatically appeared. Once individuals completed the survey, they were thanked and provided with debriefing information. (Some of the candidate sites were modified for balance between candidates' campaign sites, presentation, and clarification of content; for details, see "Study Venue" below).

## Web Behavior Recording Program

To counter the problems of self-reporting exposure measures, the present study developed an innovative method for measuring information search behavior using a real-time, click-by-click tracking method. For each page accessed by participants, the program recorded the individuals' unique identification number, time stamp (and time spent on the link), the Web page file name, and the actual content of each Web page. Each individual's Web viewing data were automatically transmitted to a university server and saved as a data file with a unique user ID. Because of the transitory nature of the Web, Web pages may have changed or disappeared prior to the analysis. To overcome this problem, the program downloaded every Web page viewed by individuals in real time and transmitted these to the research server.<sup>5</sup> This client-side programming technique captured the existing, real-world Web behavior beyond the artificially created research Web sites and allowed participants to visit any Web site existing in the real world. Because of the unique user IDs, the program enabled researchers to analyze data at an individual level (not Internet protocol addresses) and combine these with survey data, which is not possible with log analyses or server-side tracking programs.

## Study Venue

A portal site was constructed as the study venue and served as the starting point for participants' information search on the Web. The portal presented a menu with five categories of political information Web sites to choose from: issue interest groups (local and national), news (local and national), political parties (local and national), campaign (Senate candidates' campaign sites), and congressional information (e.g., U.S. Congress sites, legislation information, the current year's bills). The study site focused on seven issues relevant to policy legislation: abortion, affirmative action, the economy (taxes and budget), education, environment, health care, and national security. The design and structure of the portal resembled common Web sites to provide easy surfing capability while increasing the study's validity. Under each menu category (i.e., issue interest groups, news media, political parties, candidate campaign, and Congress), a list of Web sites was presented in alphabetical order.<sup>6</sup>

A total of 257 Web sites were linked to the portal under these categories. All of the sites were sponsored by actual issue advocacy groups, news media, political parties, candidates, and the U.S. Congress at the time of the study. These sites were selected from nonpartisan voting information consolidator sites, such as Project Vote Smart (national and local election information), Politics1 (national and local election information), State X Senate (local election information), and reference books published for journalists. Two candidates' real campaign sites (one from each major party) were linked to the study site.<sup>7</sup> To balance the presentation of the issues and to



clarify content, however, the issue position pages of the candidates' campaign sites were modified. While individuals were allowed to visit sites outside the portal page, they were instructed to limit their search to those sites linked to the portal site.

## Measures

*Issue publics (personal issue importance).* Personal issue importance was measured on a 7-point scale. For each of the seven issues, individuals were asked to rate how important the issue was to them personally. Following the conventional technique employed in prior research, members of issue publics were identified on the basis of the mean scores of each personal issue importance question.<sup>8</sup> Those who rated higher than the mean scores were included as members of an issue public. Appendix 2.1 presents a descriptive analysis of personal issue importance. Appendix 2.1 shows that the distribution of the importance ratings did not differ greatly, although the importance of education was skewed toward the high end compared to others (skewness = -1.1).<sup>9</sup>

*Selectivity.* Selectivity was operationalized in terms of the weight of a particular kind of issue-specific content in information selection, as measured by the number of hits on a category out of the total number of hits and by the amount of time spent on a content category out of the total time spent by each participant. Selectivity was measured using individuals' Web behavior records.<sup>10</sup> Individual Web behavior records were coded by looking into each of the web pages an individual viewed (therefore, the coding unit is a page). After the content coding, the hit number (the number of clicks) and the time spent on a page for each category were calculated.<sup>11</sup> For the reliability test, 20% of the cases were randomly selected and coded separately by two trained coders. The two coders' agreement rate was .95 (Cohen's  $\kappa$ ). Appendix 2.2 provides a description of selectivity by issue category.

*Domain-specific knowledge.* Domain-specific knowledge was measured using a factual knowledge index on each issue. The factual knowledge index was constructed from four items<sup>12</sup> asked about each of the seven issues. Knowledge questions were constructed after examining the content of issue advocacy group sites, current affairs stories reported in major newspapers, and congressional reports. The most frequently reported subtopics were identified through major newspaper articles, a search of a congressional report database, as well as content analysis of interest group sites linked to the study venue. The knowledge items (10 items for each issue) were constructed on the basis of these topics. In a pilot test, 10 items were asked for each of the seven issues. Four items for each issue were selected on the basis of correct proportion and discriminant power obtained from the pilot test.<sup>13</sup> Details of the item performance are reported in Appendix 2.3. The same knowledge items were employed for both the information-search group and the no-information-search group.

For the information-search group, pretest knowledge items were also employed as a reference to infer the effect of knowledge gain from the information search by comparing the pretest scores with the control group scores. For each issue, an average of half of the number of items in the pretest were the same as those in the posttest.<sup>14</sup>

*Extremity in candidate evaluations and criteria for voting (issue voting).* Extremity in candidate evaluation was obtained from an absolute value of difference between feelings thermometers toward each candidate ( $M = 33.9$ ,  $SD = 26.79$ ). Individuals were asked directly to identify the criterion used for voting immediately after answering the question of voting choice.

## Results and Discussion

*Conceptual premises of issue publics.* As discussed previously, issue publics are specialists who are interested in particular issues; they are not necessarily interested in other issues. A between-item variance analysis confirmed that these seven issues are statistically different,  $F(6, 208) = 50.89$ ,  $p = .001$ .<sup>15</sup> The results also showed that most people had at least 1 issue that concerned them. In fact, only 2.2% of people said they cared about none of the 7 issues. However, members of issue publics did not overlap much. Those who cared about all of the issues (i.e., fell above the mean scores for all seven issues) constituted only 7%. On average, participants had 1.5 issues that highly concerned them.

*Issue publics and selectivity.* This study tested whether issue publics and the general public (nonissue publics) differed in their information gathering patterns on the Web. This study expected that in issue domains that issue publics considered personally important, their level of selectivity on the Web would be higher than that of the general public (Hypothesis 1b). Also, issue publics would proportionally select more information about issues that interested them as opposed to other information, even if they were relatively familiar with the issues.

Patterns in Table 2.1 show that regardless of the issues, issue publics tended to have higher levels of selectivity than the general public did in their issue domains. The education issue, however, did not show this tendency clearly. In other issue domains in which issue publics had no concerns, the differences between issue publics and the general public disappeared, or issue publics' level of selectivity was actually lower than that of the general public. Members of the economy and the national security issue publics, however, still tend to show high levels of Web behavior activities in other issue domains. This may be due to some overlaps between issue public memberships. The correlations among selectivity measures of each issue domain suggest this is the case. For example, Web behavior activities (measured by hit numbers and durations) regarding the economy and education issues were highly

**Table 2.1**  
**Issue Publics and Web Selectivity**

Issue	Information	Selection	Members of		<i>df</i>	<i>t</i>
			Issue Public	Nonmembers		
Abortion	Abortion	Hit	.16 (.23)	.07 (.16)	155	-2.66**
		Duration	.15 (.22)	.06 (.15)		-2.85**
	Other issues	Hit	.14 (.16)	.23 (.25)		2.82**
		Duration	.14 (.19)	.28 (.31)		3.26**
Affirmative action	Affirmative action	Hit	.02 (.07)	.01 (.01)	160	-1.80*
		Duration	.02 (.05)	.01 (.01)		-2.00**
	Other issues	Hit	.25 (.24)	.30 (.28)		0.75
		Duration	.29 (.29)	.34 (.32)		0.91
Economy	Economy	Hit	.05 (.11)	.01 (.03)	156	-3.30**
		Duration	.07 (.12)	.03 (.07)		-2.07**
	Other issues	Hit	.27 (.23)	.25 (.26)		-0.70
		Duration	.30 (.29)	.24 (.25)		-0.50
Education	Education	Hit	.04 (.08)	.02 (.10)	157	-1.00
		Duration	.05 (.11)	.03 (.08)		-1.20
	Other issues	Hit	.26 (.25)	.26 (.24)		0.12
		Duration	.28 (.29)	.27 (.29)		-0.30
Environment	Environment	Hit	.03 (.09)	.00 (.01)	156	-2.20**
		Duration	.03 (.08)	.01 (.02)		-2.00**
	Other issues	Hit	.27 (.25)	.29 (.26)		0.43
		Duration	.30 (.29)	.31 (.31)		0.05
Health care	Health care	Hit	.05 (.12)	.01 (.04)	156	-2.72**
		Duration	.06 (.15)	.01 (.03)		-3.10**
	Other issues	Hit	.23 (.23)	.30 (.28)		1.80*
		Duration	.26 (.27)	.31 (.28)		1.10
National security	National security	Hit	.06 (.11)	.03 (.07)	156	-2.20**
		Duration	.07 (.15)	.04 (.10)		-1.80*
	Other issues	Hit	.24 (.25)	.24 (.25)		-0.59
		Duration	.27 (.29)	.25 (.27)		-0.68

Note: Values are mean scores, with standard deviations in parentheses. Other issues are the aggregation of selectivity scores of the other six issues.

\* $p < .10$ . \*\* $p < .05$ .

correlated ( $r = .64, p < .01$ ). As shown previously, the personal issue importance of the economy and education issues showed a moderate level of correlation as well ( $r = .45, p < .01$ ). Similarly, Web activities of the national security issue public and the health care issue public were significantly correlated ( $r = .50, p < .01$ ). When these cases were excluded from the aggregate of the other issue domains, there was no statistical difference between the issue publics and the general public.

Overall, issue publics' selectivity in information gathering on the Web was significantly higher than that of the general public in the issue domains that they considered important. Issue publics tended to select information in the domains personally important to them rather than those they did not consider personally important.

**Table 2.2**  
**Domain-Specific Knowledge by Web Search (Information**  
**Gathering Task vs. Baseline, No Task)**

Issue	Maximum Score	Task	Baseline, No Task	<i>df</i>	<i>t</i>
Abortion	4	2.32 (0.97)	1.92 (1.27)	81.4 <sup>a</sup>	-2.16**
Affirmative action	4	2.27 (1.07)	1.84 (1.17)	162	-2.10**
Economy	3	1.38 (0.88)	1.03 (0.93)	162	-2.26**
Education	3	1.62 (0.73)	1.38 (1.03)	79.2 <sup>a</sup>	-1.64*
Environment	4	2.10 (1.02)	1.35 (1.00)	162	-4.14***
Health care	4	1.80 (1.09)	1.35 (1.00)	162	-2.43**
National security	4	2.48 (0.89)	1.94 (1.27)	77.1 <sup>a</sup>	-2.74**

Note: Values are mean scores, with standard deviations in parentheses.

a. Equal variances are not assumed.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

*Issue publics, selectivity, and domain-specific knowledge.* Given that members of issue publics showed a higher level of selectivity than nonmembers, this study also examined the impact of selectivity on developing domain-specific knowledge. This study hypothesized that a high level of issue-specific selectivity on the Web would lead to increases in domain-specific knowledge (Hypothesis 2b).

Table 2.2 presents the mean differences between the information-search task and no-information-search task (i.e., baseline) groups in each issue case. In all issue cases, the means were significantly different between the groups, showing the effect of information gathering on domain-specific knowledge.<sup>16</sup>

Using the no-information-search group as a reference, this study also employed analyses of variance to examine the effects of selectivity (high vs. low) on domain-specific knowledge. This allowed us to take a closer look at how information gathering on the Web influences domain-specific knowledge. As shown in Table 2.3, the findings suggest that selective information gathering merits an increase in domain-specific knowledge. While the data indicated that a high level of selectivity significantly enhanced domain-specific knowledge on most of the issues, the effects of selectivity were only marginally significant in some issue domains (e.g., education). The results in the relationship between health care domain specificity and selectivity yielded an interesting pattern. Although information gathering appeared to make a significant difference in knowledge acquisition compared with the control group, a low rather than a high level of selectivity had a slightly larger effect on domain-specific knowledge. Given the findings that issue publics showed a higher level of selectivity than nonmembers across issues (Table 2.1), the findings of selectivity effects on domain-specific knowledge in each issue case imply that members of issue publics would be more selective in information gathering, and this in turn

**Table 2.3**  
**Levels of Web Selectivity and Domain-Specific Knowledge**

Issue		High Selectivity	Low Selectivity	Baseline	<i>F</i> (2, 163)
Abortion	Hit	2.40 (0.93) <sub>b</sub>	2.30 (0.99) <sub>b</sub>	1.92 (1.28) <sub>a</sub>	2.34*
	Duration	2.40 (1.04) <sub>b</sub>	2.30 (0.93) <sub>b</sub>		2.45*
Affirmative action	Hit	2.43 (1.07) <sub>b</sub>	2.20 (1.08) <sub>b</sub>	1.84 (1.17) <sub>a</sub>	2.66**
	Duration	2.60 (1.01) <sub>b</sub>	2.20 (1.08) <sub>c</sub>		3.27**
Economy	Hit	1.44 (0.92) <sub>b</sub>	1.37 (0.88) <sub>b</sub>	1.03 (0.93) <sub>a</sub>	2.59*
	Duration	1.58 (0.96) <sub>b</sub>	1.33 (0.86) <sub>c</sub>		3.19**
Education	Hit	1.78 (0.75) <sub>b</sub>	1.57 (0.73) <sub>a</sub>	1.35 (1.03) <sub>a</sub>	2.20*
	Duration	1.70 (0.69) <sub>a</sub>	1.60 (0.75) <sub>a</sub>		1.70
Environment	Hit	2.42 (1.12) <sub>b</sub>	1.98 (0.99) <sub>c</sub>	1.35 (1.00) <sub>a</sub>	10.10***
	Duration	2.38 (1.20) <sub>b</sub>	2.00 (0.99) <sub>c</sub>		9.47**
Health care	Hit	1.54 (1.02) <sub>b</sub>	1.86 (1.11) <sub>c</sub>	1.35 (1.00) <sub>a</sub>	3.24**
	Duration	1.62 (1.02) <sub>a</sub>	1.84 (1.11) <sub>b</sub>		3.30**
National security	Hit	2.57 (0.88) <sub>b</sub>	2.44 (0.89) <sub>c</sub>	1.94 (1.27) <sub>a</sub>	4.94***
	Duration	2.65 (0.87) <sub>b</sub>	2.43 (0.89) <sub>c</sub>		5.14***

Note: High selectivity indicates a selectivity score above the mean. Values in parentheses are standard deviations. Means in the same row that do not share subscripts significantly differ at  $p < .05$  in Fisher's least significant difference test (two tailed).

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

would lead to an increase in domain-specific knowledge supporting differential knowledge gain.

Additionally, this study tested the impact of information gathering on general political knowledge measured by four items: the percentage of veto override, party control of the House, judicial review, and identification of the vice president (in the posttest). Neither a main effect of information gathering nor an interaction between information gathering and issue importance was found in any issue domains.

*Selectivity, extremity, and issue voting.*<sup>17</sup> The study predicted that selectivity should lead to extremity in candidate evaluations (Hypothesis 3b). The data strongly supported this hypothesis. As shown in Table 2.4, selectivity on the Web was a significant predictor of extremity in candidate evaluations in most cases (except for the economy and health care issues). This suggests that members of issue publics anchored by their own issue interests are issue-specifically selective when gathering information on the Web. As a result, they tend to become extreme and polarized when making political decisions.

On the basis of previous studies, the present study also hypothesized that issue publics would be more likely to use candidates' issue positions, rather than other

**Table 2.4**  
**The Effect of Selectivity on Extremity in Candidate Evaluations**

Issue	Effect of Selectivity ( <i>b</i> )
Abortion ( <i>n</i> = 150)	8.82*** (3.21)
Affirmative action ( <i>n</i> = 151)	7.63** (3.70)
Economy ( <i>n</i> = 150)	6.00 (3.90)
Education ( <i>n</i> = 150)	6.20* (3.50)
Environment ( <i>n</i> = 150)	9.84*** (2.89)
Health care ( <i>n</i> = 151)	4.01 (3.38)
National security ( <i>n</i> = 149)	10.10*** (3.68)

Note: The independent variable was selectivity (duration measure), and the dependent variable was extremity in candidate evaluation. Listwise deletion was used for missing cases. Values are unstandardized coefficients, with standard deviations in parentheses. Control variables in the models were gender (dummy), age, party ID (dummy, reference category was independent), race (dummy, white = 1), and education.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

heuristics (such as candidates' party affiliation), as criteria for voting when issue information is available (Hypothesis 3c). As shown in Table 2.5, the hypothesis was supported. When information was available, patterns of issue voting were higher than when there was no information available (18.6% in the no-information-search group, 81.4 % in the information-search group,  $\chi^2 = 7.3$ ,  $p < .01$ ). Also, issue publics' tendency for issue voting was higher in the information-search task group compared with the no-information-search group. This suggests that selectivity on the Web is an explanation for issue publics' issue voting patterns. No significant pattern in issue voting was found among nonmembers of issue publics.

Although this study was carried out in natural settings employing the field experiment method, the generalizability of the data may be limited compared with the larger scale of national sample data. However, the experimental method employed in this study has clear benefits in setting causal relationships and revealing the process through which issue publics develop domain-specific knowledge, extremity, and issue voting patterns. Combined with supportive findings in previous research using larger national sample data, the findings obtained from the new experiment data should enhance our understanding of the impact of new media in terms of selectivity, domain specificity, and extremity.

The findings suggest some considerations for future research. Since Web behavior recording is novel, more technical improvements need to be developed for conducting Web behavior research in a natural setting. The varying structural differences of individual Web sites should also be considered in future research. The researchers opted

**Table 2.5**  
**Issue Publics' Voting Criteria by Web Search**  
**(Information Gathering Task vs. No Task)**

Issue	Search Group	No-Search Group	$\chi^2$
Abortion			
Party affiliation	34	79.2	11.21***
Issue position	52	16.7	
Affirmative action			
Party affiliation	33.3	33.3	1.51*
Issue position	45.6	20.8	
Economy			
Party affiliation	32.1	33.3	4.01**
Issue position	39.3	20	
Education			
Party affiliation	31.3	44.1	4.24**
Issue position	43.8	20.6	
Environment			
Party affiliation	25.9	35.5	8.01***
Issue position	55.2	12.9	
Health care			
Party affiliation	25	40	8.91***
Issue position	53.6	13.3	
National security			
Party affiliation	25	46.4	7.10***
Issue position	53.5	17.9	

Note: Values are percentages of responses within the issue public groups. Statistical tests are based on only the two categories ( $df = 1$ ). Other criteria included candidates' appearance, personal backgrounds, expertise, and others.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

to carry out this study in a real and natural setting, with some trade-off for validity. Some variability in hyperlink structures and site designs might have influenced some Web activity and its consequences. It may have resulted in random error only, but future research needs to explore this further.

## General Discussion

At a methodological level, this research employed multiple approaches using a complementary set of data, the 2000 and 2004 ANES data (Study 1), and a combined data set of naturally occurring individuals' Web behavior records and their survey responses (Study 2). At a theoretical level, the research examines the impact of the

changing political information environment from a new perspective. This research in particular considers citizens as pluralistic issue publics rather than an aggregated mass. The study shows that voters appear to belong to at least one (or a very few) issue publics, lending weight to those who argue for the importance of issue publics (e.g., Iyengar, 1986; Krosnick, 1990).

A key inference to be made is that personal issue importance compels issue publics to seek information in a highly selective manner compared with the general public. Prior research has consistently shown that individuals in general reveal very narrow search patterns when they seek political information online. However, relatively little explanation has been offered beyond *de facto* selectivity (i.e., people ought to be selective). The evidence that personal issue importance influences the way individuals select information may explain *why* individuals are highly selective in political information consumption, contributing further to the long tradition of selective exposure research in communication.

Given the strong findings that issue publics are more selective in information gathering than nonmembers, this research also examined the impact of selectivity in domain-specific knowledge, extremity, and voting decisions in each issue case. The results of both Study 1 and Study 2 clearly supported the premise that new media, especially the Web, play a significant role in enhancing domain-specific knowledge, even though Web users were exposed to a narrower range of issues and did not use the Web for increasing general political knowledge. Furthermore, Study 2 suggested that issue publics benefited more from the Web in boosting domain-specific knowledge, suggesting different “kinds” of knowledge acquisition between issue publics and nonmembers of issue publics. As a whole, the findings suggest that acquiring political information on the Web may facilitate sharper distinctions between issue publics.

The overall results of this research demonstrated that the Web also contributed to increases in attitude extremity and extremity in candidate evaluations. Political pundits have long complained that individuals tend to become extreme and polarized as a result of selective exposure, unaware of the broad range of social issues (e.g., Katz, 1996; Sunstein, 2002). Data from this research appear to empirically support this claim. With the rapid diffusion of Web use, this tendency might facilitate further polarization along issue attitudes and intensive group politics.

This research found evidence of issue voting as well. The lack of substantive information during election campaigns and subsequent poor voting decisions have been enduring concerns of political communication researchers (e.g., Patterson, 1993). Given that this study used real candidates and a real election as study contexts, nonissue voting patterns (even with issue publics) found in the no-information-search condition were consistent with researchers’ concerns. A positive aspect, though, is that when information *is* available and when an individual *is* motivated to search for information (as with issue publics in the information-search group), citizens are more



likely to use issue positions as the basis for voting decisions. This suggests available online information about campaign issues may contribute to issue publics' tendency for issue voting.

The present research should shed light upon citizens' competence in the new information environment. Political communication scholars have expressed deep concern about the general population's lack of interest in politics, their vulnerability to political rhetoric, and their continually decreasing level of political participation. Scholars have given up on these core premises of democracy, claiming that the majority of citizens do not need to be informed to make a decision. If scholars are only concerned with politics from the majoritarian perspective that inevitably dichotomizes "the mass public" and "few elites" and highlights the inconsistency between the mass public and policy decisions, this view would appear to be correct. However, the findings of this research imply that although they are not omniscient, most individuals have passionate concerns about political issues they consider important; as long as they are passionate about the issues, citizens actively select and acquire information about their issues of personal concern. In fact, most voters use the issues as a basis for voting as long as they are concerned with them. And most important, new media and particularly the Web appear to have accelerated these patterns. As Web use continues to expand, scholars should not simply discount citizens' competence in the new information environment.

In a broader context, the results of this study suggest that the new information environment is facilitating rapid changes in the political landscape. Instead of traditional party politics in a representative democratic system, researchers have observed increases in the influences felt by intense special issue interest, identity politics, and single-issue politics. Traditional party politics and the "grand political agenda" are giving way to a relatively small set of issues. Recently, even traditional parties are becoming polarized on a variety of social, racial, and cultural issues (Fiorina, 2002; Layman & Carsey, 2002). Because legislators and representatives are aware that citizens are exceptionally attentive to politics when they consider issues personally important to them (Fiorina, 1981; Hutchings, 2003; Miller & Stokes, 1963), political parties may become more polarized as a response to differing citizens' interests. The results of the present research may further support these arguments. With the growth of the Web and consequential sharp differences among citizens aligned with diverse issue concerns, "grand" political platforms may continue to decline. Instead, as found in this research, issue publics may play a more substantial role in politics than they had before. From a normative perspective, the findings of this research may provide both positive and negative implications for the future of democracies.

## Appendix 2.1

### Personal Issue Importance: Ratings

Issue	Median	<i>M</i>	<i>SD</i>
Abortion	5	4.33	2.15
Affirmative action	4	3.66	1.81
Economy	6	5.67	1.50
Education	6	5.74	1.50
Environment	5	4.70	1.64
Health care	6	5.54	1.53
National security	6	5.28	1.70

Note: Valid *n* = 214, listwise.

## Appendix 2.2

### Description of Selectivity by Category

Content Category	Selectivity	
	Hit	Duration
Abortion	.12 (.19)	.10 (.19)
Affirmative action	.01 (.05)	.01 (.04)
Economy	.04 (.09)	.02 (.13)
Education	.04 (.09)	.04 (.11)
Environment	.01 (.07)	.02 (.67)
Health care	.04 (.09)	.04 (.13)
National security	.10 (.04)	.05 (.13)
Other issues	.01 (.03)	.00 (.02)
Image-oriented content	.01 (.06)	.01 (.04)
Mobilization	.01 (.04)	.02 (.08)
General information	.03 (.08)	.04 (.12)
Home pages	.13 (.15)	.12 (.19)
Nonissue content (including advertisements)	.01 (.06)	.02 (.06)

Note: For descriptions of content categories, see note 11. Values in parentheses are standard deviations.

## Appendix 2.3

### Domain-Specific Knowledge Item Performance Analysis

	Item	Correct Proportion	Discrimination Parameter	Item Total Correlation
Abortion	1	.65	1.69	.52
	2	.58	1.13	.36
	3	.61	1.56	.48
	4	.35	2.10	.66
Affirmative action	1	.46	2.32	.72
	2	.72	2.04	.56
	3	.62	1.50	.49
	4	.34	1.32	.47
Economy	1	.40	1.76	.52
	2	.50	2.31	.62
	3	.39	2.08	.62
Education	1	.69	3.16	.66
	2	.36	4.46	.46
	3	.68	3.04	.60
Environment	1	.27	2.40	.65
	2	.48	1.30	.44
	3	.65	1.14	.39
	4	.43	2.36	.64
Health care	1	.42	1.31	.52
	2	.33	1.31	.53
	3	.36	1.83	.60
	4	.56	1.59	.57
National security	1	.78	1.32	.33
	2	.65	2.49	.63
	3	.62	2.32	.67
	4	.34	1.40	.49

Note: Items were obtained from the posttest.

## Notes

1. An earlier version of this study was based on part of my dissertation project. The study was funded in part by the National Science Foundation (Dissertation Research Improvement Grant SES-031773) and the University of Illinois (Seymour Sudman Dissertation Award 2004). I would like to thank David Tewksbury, Scott Althaus, James Kuklinski, David Swanson, Thomas Nelson, and anonymous reviewers for their helpful comments on various versions of this article.

2. The dialogue between Iyengar (1986) and Zaller (1986) sheds light on issue publics' domain-specific knowledge. In an analysis of the 1985 ANES pilot study data, Iyengar argued that there was a clear domain-specific information effect (p. 8). On the other hand, with the same data, Zaller found only a modest impact of domain-specific issue salience on domain-specific factual knowledge. Many researchers (e.g., Delli Carpini & Keeter, 1996) have interpreted Zaller's study as if no such domain specificity exists in political knowledge; however, a careful examination reveals a great level of variability in political knowledge. Zaller included issue-specific identification of candidates' and groups' positions as a general political knowledge item, which yielded stronger correlations with domain-specific issue salience. On the other hand, his Cadillac items (the lump of all the domain-specific items together) did

not produce strong correlations with issue salience. Even Delli Carpini and Keeter's (1996) study (which has been regarded as the strongest rejection of the concept of issue publics) warned that "the perceived relevance of certain types of information can overcome one's lack of general interest in politics" (p. 175).

3. Gender (female<sub>2000</sub> = 56.3%, female<sub>2004</sub> = 53.3%), age ( $M_{2000}$  = 47.2 years,  $SD_{2000}$  = 16.9 years;  $M_{2004}$  = 47.27 years,  $SD_{2004}$  = 17.24 years), race (White<sub>2000</sub> = 77.1%, White<sub>2004</sub> = 72.8%), region (South<sub>2000</sub> = 36.4%, South<sub>2004</sub> = 34.4%), household income (1 = none or less than \$4,999 to 22 = \$200,000 and over;  $M_{2000}$  = 6.77,  $SD_{2000}$  = 3.75; 0 = none or less than \$2,999 to 23 = \$120,000 and over;  $M_{2004}$  = 14.94,  $SD_{2004}$  = 6.0), ideology (on a 7-point scale ranging from *extremely liberal* to *extremely conservative*;  $M_{2000}$  = 3.74,  $SD_{2000}$  = 2.08;  $M_{2004}$  = 3.37,  $SD_{2004}$  = 1.9), party identification (Democrat<sub>2000</sub> = 34.5%, Republican<sub>2000</sub> = 25.1%; Democrat<sub>2004</sub> = 31.8%, Republican<sub>2004</sub> = 28.9%), and religiosity (i.e., how often an individual prays, on a 5-point scale;  $M_{2000}$  = 2.49,  $SD_{2000}$  = 1.36;  $M_{2004}$  = 3.48,  $SD_{2004}$  = 1.37) were obtained and used as control variables.

4. The third recruitment occurred after the primary election (March 16, 2004). General political interest (measured by campaign attention) and general political knowledge (measured by four items of civic knowledge), as well as general demographic characteristics (age, gender, race, educational attainment, and seven issue importance ratings and rankings), were tested by recruitment time, using a one-way analysis of variance. The recruitment time did not make any difference on those variables.

5. Image files were not captured to avoid delayed information in loading individuals' Web activities.

6. Potential ordering effects were tested through a pilot study prior to this study. Using the computer program, half of the subjects ( $n = 22$ ) were assigned to the condition in which the portal site changed the order of the linked Web sites randomly each time a user visited the portal home page. Half of the subjects ( $n = 20$ ) used the portal site that presented the linked sites in alphabetical order. There was no significant difference between these two conditions in subjects' Web activities. However, the feedback from the subjects in the random-order condition indicated that the random-order presentation was not easy (and even frustrating) for users to find the sites they wanted to visit.

7. Candidate X (D) and Candidate Y (R) were the front-runners until late February to early March. Candidate Z (D) started to lead the race over Candidate X by 8% to 10% (in a February 27, 2004, CBS2/NewsRadio phone survey ( $n = 1,500$ ): Candidate Z 27%, Candidate X 19%). Candidate X subsequently lost the primary election. Therefore, his campaign site was replaced with Candidate Z's after the third recruitment. Forty participants (17.6% of the entire sample) from the third recruitment completed the study. To test whether this historical event made any difference, major independent and dependent variables of this study were regressed on the different candidates (Candidate Z or Candidate X). No statistical significance was found.

8. Following the conventional technique suggested by prior research on issue publics, this study adopted interval scales of personal issue importance to construct more reliable measures and dichotomized them to preserve the categorical nature of the concept of issue publics and parsimony in analysis. Dichotomization of the interval scale, in general, loses its empirical power and precision. However, in the trade-off between theoretical justification and parsimony and empirical power, this study chooses to follow this technique. As a supplement, the study also ran the same analyses with the interval scales. The results were essentially the same.

9. Studies have suggested that responses to closed- and open-ended questions of issue importance differ in only minor ways, and issue importance is not affected by question formats (Fournier et al., 2003; Schuman, Ludwig, & Krosnick, 1986). To check the validity of the issue importance measure, the study also contained an open-ended item of personal issue importance and a question of relative personal importance for each issue (i.e., a ranking). The open-ended question was asked first, followed by ranking and ratings. As previous studies found, the ranking and open-ended question formats produced the same patterns as those of the issue importance ratings.

10. Coding categories include issue categories (abortion, affirmative action, the economy, education, environment, health care, national security, and other issues) and mobilization categories (contact information, volunteer, donation) as well as nonissue categories. Nonissue categories included candidates' biographical information, images, scandals, and gossip. Other categories were advertisements and

miscellaneous and nonpolitical information, all of which must have been obtained from sites not directly linked to the study portal site. The pages that individuals must go through for surfing, such as the menu site, and the pages participants went through via the back button to go to a page, were coded as procedure pages. The pages containing general civic information were coded as general information. The home pages containing multiple issues were coded as home pages. Content that was unidentifiable (e.g., blank pages) was coded as missing.

11. If the duration of reading a page exceeded 10 minutes, this was regarded as an interruption of the study, and the duration was calculated as just 10 minutes. This was applicable to 7 pages (from six individuals) out of 4,980 pages.

12. Three items were used for each of the economy and education issues.

13. Measures of political knowledge were constructed as an index, not scales. Since the primary purpose of the knowledge items was not the development of a unidimensional scale, the use of an index is appropriate. Accordingly, since the measures were an index rather than a scale, assessing item performance focused on discriminant validity. Nevertheless, the key issue in assessing the performance of political knowledge items and constructing effective measures of political knowledge is whether political knowledge is unidimensional or multidimensional (Delli Carpini & Keeter, 1992), and this issue is directly related to the issue of trade-off in validity and reliability of knowledge item measures. In other words, if knowledge items were sufficiently correlated with one another, and therefore reach a high level of reliability (accompanied with one factor through factor analysis), it is difficult to establish their discriminant validity. However, it is possible to build measures having a degree of discriminant validity if a researcher is willing to eliminate seemingly valid items that correlated highly with items. Faced with the trade-off, this study chose discriminant validity rather than reliability because the primary purpose of constructing domain-specificity in a knowledge item was assessing factors influencing different levels of domain-specific knowledge.

14. In most cases, pretest and posttest indices for each issue were correlated at moderate to great levels (two indices  $\alpha$ , abortion = .64, affirmative action = .48, economy = .50, education = .40, environment = .51, national security = .52). However, in the case of the health care issue, pre- and posttest item correlations were not statistically significant.

15. Correlations among personal issue importance measures were either insignificant or only slightly significant. Only the education and economy items had a moderate level of correlation ( $r = .45$ ). Principal component factor analysis (with the varimax rotation method) produced three different components: Component A, including the economy, education, health care, and the environment (eigenvalue = 1.8, variance = 26.8%); Component B, including abortion and affirmative action (eigenvalue = 1.3, variance = 19.4%); and component C, including national security (eigenvalue = 1.1, variance = 16.7%). However, the factors did not appear to have a theoretical basis, as eigenvalues were relatively small, and about 37% of variance was still not explained by these factors.

16. The study also examined the pre- and posttest differences of domain-specific knowledge under the information-search group. Except for the education and health issues, across issues, domain-specific knowledge significantly increased after the information-search task.

17. To rule out the possibility of the influence of the different recruitment time periods, voting variables (i.e., conventional voting predictors as well as voting decisions) were regressed on different recruitment time periods. The recruitment time did not yield any significant differences.

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