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Effects of Campaign-to-User and Text-Based Interactivity in Political Candidate Campaign Web sites

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Abstract

This study examined the effects on users of two forms of interactivity commonly found on political candidate campaign Web sites in the 2002 U.S. House election cycle. The first form, campaign-to-user interactivity, focuses on features or mechanisms used to enable or facilitate communication between site users and the campaign. The second form, text-based interactivity, focuses on how site content is verbally and visually expressed. Study participants viewed one of four versions of either a Democratic or Republican campaign website. Both text-based and campaign-to-user interactivity increased the amount of time users spent on the site and their accurate recall of candidates' issue stances. The co-occurrence of both forms of interactivity, however, showed a noticeably lower level of issue recall, confirming earlier findings that too much interactivity can interfere with user recall of site content.

Introduction

Despite steady growth in each of the recent campaign cycles, the use of the Web by non-Presidential candidates typically falls far short of reaching its potential as a dynamic and radically democratic communication and networking medium (Bimber & Davis, 2003; Kamark, 1999; Margolis & Resnick, 2000; Stromer-Galley, 2000). The bulk of this largely unrealized potential lies in the interactive capacities of Web communication. Indeed, online campaigning offers a multitude of new media-specific capabilities, such as multimedia downloads, sale and distribution of electronic campaign paraphernalia, personalization of content, keyword searches, and interactive polls, though to date most of these have only been used on a small proportion of non-Presidential campaign sites (Foot, Schneider, & Xenos, 2003).

In 2002, 90% of U.S. House, U.S. Senate, and gubernatorial campaign sites avoided using features such as interactive polls, multimedia presentations, individualization of site content, and live, online events. Much higher percentages of these websites opted for simpler forms of campaign-to-user interactivity, such as online donation systems (77%), volunteer sign-up (62%), and photo galleries of campaign events (46%), among others (cf. Foot & Schneider, 2002). Furthermore, political campaign websites rarely use forms of synchronous user-to-user interactivity such as discussion boards or chat. To discover why this was the case, Stromer-Galley (2000) interviewed campaign managers who reported that they avoided fully interactive user-to-user forms because of limited staff resources, concern about losing control over campaign discourse, and the loss of "strategic ambiguity" that might mean losing some voters' support.

Researchers interested in the characteristics and effects of these features have created a variety of conceptual tools for thinking about interactivity, but cross-sectional research suggests that candidates routinely avoid most forms of it (Foot et al., 2003). Furthermore, although Stromer-Galley (2000)

speculates that the interactive features we do see on candidate sites are those perceived to be effective (and efficient) by candidates, little is known about how these features actually affect the end-users of campaign websites.

Our study takes these circumstances as a point of departure and explores the question of what effect, if any, the forms of interactivity typically employed by political campaigns have on visitors to political websites. We begin by reviewing the sometimes apparently conflicting conceptions of interactivity that have been offered by other scholars, with an eye to how contemporary candidates are actually deploying interactive techniques in their online campaigns. Based on this analysis, we focus on two forms of interactivity currently in use on non-Presidential campaign sites—"campaign-to-user interactivity" and "text-based interactivity." Researchers frequently discuss the first form, campaign-to-user interactivity, in reference to site features that enable campaigns and users to communicate with each other or that provide the potential for them to do so (Bimber & Davis, 2003; Foot et al., 2003; Puopolo, 2001; Reed, 1999). Email sign-ups, volunteer sign-ups, online polls, and provision of campaign contact information are examples of this form of extant interactivity. The second form, text-based interactivity, has been discussed in conceptualizations of website interactivity (McMillan, 2002; Rafaeli, 1988), but has been understudied in empirical research on effects of interactivity on users of political candidate websites. Text-based interactivity consists of rhetorical techniques and features of the website text itself that communicate a sense of engaging presence to site visitors. Text-based interactivity refers to two aspects of the overall style in which the site content is presented. These include verbal style, such as the use of active rather than passive voice, first and second person rather than third person address, and embellishment (Endres & Warnick, 2004; Farkas & Farkas, 2002); and visual display such as captioned or alt-tagged photographs or quoted endorsements from third parties, and photographs showing the candidate *in situ* and talking with other people (Coyle & Thorson, 2001; Lombard & Snyder-Duc, 2001). Authors who write on Web style emphasize the importance of closely integrating the verbal and visual text in ways that are said to engage and hold readers' attention and keep them on the site (Farkas & Farkas, 2002; LaGrandeur, 2003).

Based on this conceptualization of two principal forms of interactivity used by online campaigners in congressional and gubernatorial elections, we developed three hypotheses concerning the effects of campaign-to-user and text-based interactivity on site visitors and tested them using a 2 □ 2 □ 2 experimental design, in which participants viewed manipulated versions of two campaign websites (one Democrat and one Republican) and were then administered a post-test survey. After presenting our findings in this article, we discuss their implications for both interactivity research and the practice of online political campaigns.

Interactivity on the Political Web: From Theory to Practice

As mentioned at the outset, the use of interactive features on non-Presidential campaign websites has remained limited in practice because many candidates in state-level gubernatorial and congressional elections shy away from more elaborate (and resource costly) forms of interactivity in favor of what Stromer-Galley has labeled "media interaction" (Stromer-Galley, 2000). For this reason, studies of effects of interactivity on visitors to candidate's websites have emphasized media interaction (e.g., polls, hyperlink patterns, email sign-ups) and user-to-user interaction (Stromer-Galley & Foot, 2002; Sundar, Kalyanaraman, & Brown, 2003). While the inclination to focus on media and use-to-user interaction probably arises from researchers' interest in elements unique to the medium, an additional dimension—text-based interactivity, or the ways in which the site text is composed for an audience in a communication context—may also play a role in user reaction.

A careful examination of the theoretical literature addressing interactivity indicates that the style and form of textual expression as adapted to the website audience have been included in interactivity models. Inclusion of this form is a departure from the idea that media must emulate face-to-face conversation in order to be considered "interactive." Rafaeli (1988) and Schudson (1978) have labeled this requirement "the conversational ideal." Rafaeli (1988) explicitly rejects this idea, and his more general discussion of interactivity discloses how text-based interactivity can operate functionally to increase user responsiveness to the website text.

In his seminal article, Rafaeli maintained that interactivity as a variable "relies on how much messages are based on the way preceding messages are related to even earlier ones" (1988, p. 111). His idea that interactivity consists of messages' functional coherence with the messages that preceded them is labeled "third order dependency" in the literature. Rafaeli noted that messages exist along a continuum of

interactivity and that "while full interactivity is often considered an ideal type it may not be fully achievable" in some contexts (1988, p. 111). As we have noted, online campaigns in congressional and gubernatorial elections rarely use full interactivity and we believe that it is useful to study user response to the forms that are used—campaign-to-user and text-based interactivity.

While recognizing the importance of studying technological means of enabling interactivity, Rafaeli emphasized interactivity's situatedness as a form of communication between people, noting that "technical reciprocity does not have an obvious reflection on the social relations involved" (1988, p. 116). For this reason, he argued that interactivity does not reduce to bidirectionality, social presence, bandwidth, user control, feedback, and other dimensions. Instead, he emphasized its *communicative* functions—the user and content-oriented qualities that are part of its appeal. He described interactivity as an "active quality," a "potential adequacy," that is "incorporated purposefully" and realized by communicators *in situ* (pp. 116-7).

Both campaign-to-user and text-based interactivity appear to meet Rafaeli's standards for interactivity as a communicative form. We follow his division of communication sequences along a continuum of interactivity according to their *function*—noninteractive, reactive, and fully interactive.[1] Fully interactive sequences are those in which a source communicates a message to another; the other responds with a message that coheres with the original message; and the originator responds with a content-related response to the preceding message. For example, in our category of campaign-to-user interactivity, the campaign might place a "volunteer" button on its site that leads to a volunteer signup input form; the user responds by using the form; and then the campaign contacts the user to make arrangements. Similar functional sequences on campaign sites occur with events notices, email links, donation requests, and other features that initiate or facilitate communication between users and the campaign. These examples meet Rafaeli's requirement for fully interactive communication.

According to its function, the category of text-based interactivity (TBI) meets Rafaeli's (1988) definition of reactive (or quasi) interactivity. Reactive interactivity occurs when a person sends a message to another, and the other responds in a manner coherent with the original message (one iteration of response). Candidate campaign sites are purposefully designed to have persuasive influence on their audience of users. With TBI, the candidate's uses of language, expressive style, modes of self presentation, and attentiveness to content may enhance users' reception of the message, recall of site content, and inclination to form a positive impression of the candidate. These are observable responses to the campaign's efforts to influence voters, and so TBI can be viewed as contextualized reactive interactivity.

To set the two forms of interactivity we have identified on political campaign sites into a larger context, it is also useful to consider McMillan's (2002) and Kiousus' (2002) broad and inclusive reviews of the literature on interactivity. McMillan began by noting that "interactivity means different things to different people in different contexts" (2002, p. 163). She noted that researchers working on interactivity focus on various sites and dimensions of it—the features of the message or medium, perceptions of users, nature of information exchange, and other factors. McMillan discussed these and focused on three types of interactivity—user-to-user, user-to-documents, and user-to-system. She believed that these three types "seem to encompass the primary literature on interactivity in new media" (p. 166). According to her model, campaign-to-user and text-based interactivity fit into the user-to-user category. As she noted, this category grows out of a communication studies orientation whose research traditions include symbolic interactionism, interpersonal communication, and social interaction. While most of the work in this category has focused on communication in interpersonal and group contexts, it also includes rhetorical communication such as is found on campaign Web sites. McMillan's model for user-to-user interactivity included many-to-one and one-to-many communication where the level of receiver control is relatively low but where there can be reciprocity in the form of user responsiveness to the message.

Given our interest in the communication context of the message, McMillan's user-to-documents and user-to-system categories offer perspectives less suitable for our purposes. User-to-documents interactivity in a new media context occurs when recipients of the message customize content to meet their needs. In this user-to-documents interactivity, users become active co-creators of a message when they customize site content, construct interactive fictional narratives, or post messages that become part of the website text. This form of user control was rarely seen on non-Presidential campaign sites in 2002. McMillan's user-to-system category refers to situations in which people interact with the computer qua computer. In such situations, the user activates a technical capacity of the system, and the system responds. This would include changing the image display and font size, activating downloads, and some gaming operations. It differs in function and purpose from campaign-to-user and text-based interactivity, which are designed by

human agents specifically to influence other human agents.

In his attempt to bring consensus to the research community by conceptualizing interactivity, Kiousis (2002) categorized forms of interactivity according to the site where they occur-in the technological structure of the medium, in the communication context, or in the users' perceptions. The first category focuses on media channels used and media capacity. The second category—communication context—focuses on facilitation of interaction, third order dependency, and simulation of parasocial interaction, and thus includes both campaign-to-user and text-based interactivity. Kiousis' third category of user perceptions emphasizes the users' psychological participation and cognitive involvement and is also a focus of our study of user response to website interactivity.

To bring clarity to a discussion of interactivity and its effects, it is important to specify the perspective and context that are of interest and to carefully identify the forms of interactivity relevant to the potential and limitations of that context. Rafaeli (1988) differentiated degrees of interactivity according to the functional relationship of the messages exchanged, and McMillan (2002) and Kiousis (2002) differentiated kinds of interactivity by considering the site where interaction occurs. Our categories of campaign-to-user and TBI may therefore be understood as two different functional dimensions arising out of the context of political communication through the World Wide Web. Since these two forms are predominant on non-Presidential campaign sites as shown in cross-sectional studies of site features (Foot et al., 2003; Stromer-Galley & Foot, 2000), and in a qualitative analysis of online campaigning (Endres & Warnick, 2004), the present study will examine both forms.

In regard to text-based interactivity specifically, we believe that adroit use of rhetorical features in the website text may play a key role in Web communication, rivaling that of campaign-to-user interactivity. A significant dimension of successful campaigning involves overcoming psychological distance and establishing a personal rapport with users (Bimber & Davis, 2003). For example, the online campaign primer produced by IPDI (Institute for Politics, Democracy, and the Internet) advised campaigns to "extend a welcome greeting," "be concise," "spell out acronyms," and include testimonials and endorsements from nonaffiliated citizens (2002, p. 10). In addition, Cornfield, Safdar, and Seiger (1998) suggested that text should be broken up and interspersed with subheadings, photographs, and icons, exhorting webmasters to "add names, faces, quotes, endorsements" because these are elements that make the website text lively and engaging (p. 26).

A focus on text-based and campaign-to-user interactivity will complement existing research on the effects of interactivity on website users by considering how these forms compare with the function of other forms of interactivity identified in the literature. Prior studies have indicated that interactivity influences user response to Web sites. For example, Sundar et al. (2003) examined the relationship between website interactivity, respondents' level of interest in politics, and their level of positive impressions of the candidate and his or her policy positions. The respondents in their study were exposed to one of three versions of a political candidate site-low interactivity (no hyperlinks), medium interactivity (a single layer of related links) and high interactivity (two hierarchical layers of links). Interactivity was thus operationalized as the level of user-to-system interactivity and exchange with the user interface. Content was held constant for all website versions; only the link hierarchies differed.

Respondents in all three conditions gave similar informativeness ratings and did not differ in their ability to recall and recognize site content. Respondents' perceptions of the candidate's character, competence, and likeability were higher for the medium than the low interactivity condition, but dropped off in the high interactive condition. The authors concluded that "the discovery of a systematic, nonlinear pattern across a number of variables is a strong indication that, for the purpose of impression formation there exists such a thing as too much interactivity" (2003, p. 49).

Stromer-Galley and Foot (2002) also took a user's perspective approach to interactivity by analyzing comments and responses from citizen focus groups about websites in the New Hampshire Presidential primary in January 2000. They defined interactivity as between-people message exchange with third order dependency. They divided interactivity into two forms-human interaction (computer- or network- mediated communicative exchange where people respond to each other) and media interaction (manipulation of the medium to provide information or perform functions that are commanded by users). Their detailed analysis of comments made by focus group members concerning their reactions to candidate sites revealed that citizens believe that the Internet has the potential to enable a higher level of interaction with the political campaign itself than do other forms of mass media. It does, however, present an asymmetrical power difference in the online relationship between the campaigns and citizens. Stromer-

Galley and Foot conclude by observing that most U.S. campaigns have not used the human interactive capacity of the Internet, and that it would be useful to investigate the power differential in greater depth.

Other studies of user effects have also found positive user responses to various forms of interactivity in other website genres. For example, Bezjian-Avery, Calder, and Iacobucci (1998) emphasized hypertext structure and compared websites with a linear structure to minimally interactive (choice of pathways) sites, and they found conflicting results among verbally- and visually-oriented readers. In contrast, Coyle and Thorson (2001), who linked interactivity to users' control of the media environment, found that increased levels of interactivity and vividness "were associated with more positive and more enduring attitudes toward the Web site" (p. 70).

By examining responses to text-based interactivity, as well as campaign-to-user interactivity, the current study will extend prior work on interactivity as commonly found on political candidate campaign Web sites. Our study will employ an experimental design that enables us to explore the distinct and interactive effects of both forms. By isolating instances of campaign-to-user and text-based interactivity in the treatment sites, comparing each form with the other and with a site version involving minimal interactivity, and tapping a variety of user responses, we will indicate the ways in which text-based and campaign-to-user interactivity individually and jointly affect the ways in which users engage the content of political Web sites.

Hypotheses

In developing hypotheses concerning the ways in which interactivity on candidate Web sites might affect the thoughts and opinion formation processes of site visitors, we draw on models of political opinion formation as well as the nascent literature on interactivity on the political Web. Dominant models of opinion formation in political science posit that individuals develop attitudes about political objects, such as candidates, primarily in one of two ways. Memory-based models (cf. Zaller, 1992) assume that opinions reported by individuals are the result of a random sampling of distinct pieces of information, "considerations," related to the object at hand, followed by an on-the-spot averaging of those pieces of information. Alternatively, "online" models assume an opposite process wherein individuals keep a "running tally" of their overall evaluation of the object in mind, attending to information only insofar as it affects the summary evaluation, later forgetting the actual information that went into the final opinion (Lodge, Steenbergen, & Brau, 1994). In both cases exposure to, and reception of, political information relevant to the opinion are critical input variables.

In applying this approach to the effects of website interactivity, we believe that interactivity serves primarily as a reception-enhancer, and so we focus on the cognitive engagement of visitors with site content as the primary dependent variable. That is to say, based on the findings of Stromer-Galley and Foot (2002), as well as Sundar et al. (2003), we believe interactive features serve to hold visitors' interest in a site, thereby enabling them to extract more pieces of information from it and subsequently hold more pieces of information from the site in working memory. Given the premium placed on attention to political information by dominant models of information processing (McGuire, 1969), we predict main effects on cognitive engagement for both text-based and campaign-to-user interactivity, as well as a positive interaction effect when both forms are present. In formal terms, our hypotheses may be stated as follows:

> H1: Campaign-to-user interactivity will be positively related to users' cognitive engagement with a candidate's website.
>
> H2: Text-based interactivity will be positively related to users' cognitive engagement with a candidate's website.
>
> H3: The combination of campaign-to-user and text-based interactivity on candidate websites will result in levels of cognitive engagement greater than either form of interactivity on its own.

Method

We tested these hypotheses using a 2 x 2 x 2 between-subjects factorial design using a single post-test survey instrument and randomized group assignment. The two primary manipulations operative in the design were the levels of campaign-to-user and text-based interactivity (a high and low set of features

for each, a version low in both, and a version that combined the two). Thus, the basic design included a *control (or low/low)* condition with low levels of both text-based and campaign-to-user interactivity, a condition with *high text-based but low campaign-to-user interactivity*, a condition with *high campaign-to-user interactivity but low text-based interactivity*, and a condition including *both high text-based and campaign-to-user interactive features*. To account for the effects of political partisanship, a third manipulation was introduced: Participants were randomly assigned to view either a Democratic or a Republican version of the stimulus Web sites. The Democratic candidate site used for the stimulus materials was modeled on the site of Chris Bell, candidate for U.S. House from Texas' 25th District, and the Republican site was modeled on the site of Phil Gingrey, candidate for U.S. House from Georgia's 11th District.

A total of 351 undergraduate students were recruited to participate in the experiment through an extra credit opportunity offered in an introductory communication course at a major university in the Northwestern United States. Students under the age of 18 were excluded from participation (although not extra credit), and subjects were reminded of the voluntary nature of their participation. Although there were more females than males (71% female) and slightly more Democratic party identifiers than Republican (36% and 28% respectively), the sample was representative of the larger undergraduate population at the university where the research was conducted, if relatively unrepresentative of the nation as a whole. (See Table 1 for a description of the sample on a variety of variables including demographics, political interest, media use, and partisan and ideological identification.)

	Mean	Minimum	Maximum	Standard Deviation	N
Age	20.12	18	34	1.90	306
Percent Non-White	25.73	0	1	0.44	307
Percent Female	71.10	0	1	0.45	308
Political Interest	1.36	0	3	0.94	307
Political Knowledge	2.19	0	3	0.87	304
Online News: Days per Week	1.51	0	7	2.07	263
Ideological Self-Placement (Higher values indicate conservative placement)	3.27	0	6	1.37	281
Democratic Partisan Identification	.36	0	1	0.48	351
Republican Partisan Identification	.23	0	1	0.42	351
Independent or No Partisan Identification	.28	0	1	0.45	351

Table 1. Participant characteristics (N=308)
"Don't Know," and "None of These" answers were excluded

The basic platform for the stimulus materials came from the Web sites of the two candidates (Bell and Gingrey) selected from the 2002 U.S. House election cycle. We chose this approach to make the sites look and feel realistic, though they were ultimately manipulated to be as equivalent as possible in terms of the amount of content, the relative number and diversity of the issue stances provided, the production values of candidate photos, as well as all other potential confounds. Students were made aware that the sites were not active campaign sites; furthermore, only participating subjects (as opposed to Web users at large) were able to view the manipulated site versions.

Campaign-to-user interactivity was manipulated using the presence or absence of features enabling or facilitating user contact with the candidate and/or campaign: an onsite poll, a Web-based contribution feature,[2] a "contact us" email link, information about campaign headquarters and its location, a Web-based voter registration appeal, and an events notice. In the low campaign-to-user conditions, sites featured none of these features, while in the high campaign-to-user conditions, the sites featured all of them.

Text-based interactivity was manipulated via the presence or absence of *various stylistic devices* such as first person address and active versus passive voice; *additional visual cues* such as *in situ* photos of the candidate and alt tags for most photos; and *additional textual content*, such as a date-stamp, additional candidate statements in separate boxes, and third party endorsements. (Minimal contact information—a form of campaign-to-user interactivity—was included on the text-based only version of the sites.) In the high-text-based conditions, all of these features were present, while in the low-text-based conditions none were present. A specific breakdown of the number and occurrence of these two manipulated features is provided in Tables 2 and 3; see also visual image examples of page views from the Bell site.

Page Link	Text-Based	Campaign-to-User	Both	Low/Low
Home Page	• date stamp • added photo • 2 text boxes	• site poll • contribute button • contact us button • campaign hq info • register to vote button	All elements in Cols 2 & 3	No elements in Cols 2 & 3; straight text only
Candidate bio	• date stamp • photo of speech • photo with wife • photo with family • text box	• contribute button • contact us button • upcoming events box • campaign hq info • register to vote button	All elements in Cols 2 & 3	No elements in Cols 2 & 3; straight text only
Issues Link	• date stamp • 2 in situ photos • 1st person reference • text box	• contribute button • upcoming events box • contact us now button • campaign hq info • register to vote button	All elements in Cols 2 & 3	No elements in Cols 2 & 3; straight text only
News Room	• date stamp • 2 text boxes • 1 endorse-ment box	• contribute button • events notice • contact us now button • campaign hq info • register to vote button	All elements in Cols 2 & 3	No elements in Cols 2 & 3; straight text only
Contribute	• date stamp • endorsement box • 1st person appeal	• site poll • contact us now button • register to vote button	All elements in Cols 2 & 3	No elements in Cols 2 & 3; straight text only
Contact	• date stamp • 1 endorse-ment box • campaign address, phone, fax, email	• contribute button • contact us button • register to vote button • campaign hq address, press contact, scheduling and fundraising contact, postal address	All elements in Cols 2 & 3	Campaign address and voice mail; no email

Table 2. Interactive elements in four versions of Democratic candidate site

Page Link	Text-Based	Campaign-to-User	Both	Low/Low
Home Page	• date stamp • text box • 2 alt tagged photos • link to district map • more links • captioned photo	• donate button • volunteer button • events notice • site poll • email, phone, fax	All elements in Cols 2 & 3	No elements in Cols 2 & 3; straight text only
Candidate bio	• date stamp • 2 text boxes • family	• donate button • volunteer button • email, phone,	All elements in Cols 2 & 3	No elements in Cols 2 & 3

	information • extra photo of speech • photo of TV interview • link to district map	fax • contact us text		
News Link	• date stamp • captioned photo • link to district map • text box	• donate button • volunteer button • email, phone, fax • site poll	All elements in Cols 2 & 3	No elements in Cols 2 & 3
Issues Link	• date stamp • text box • link to district map • 1st person used in text	• donate button • volunteer button • email, phone, fax • events notice	All elements in Cols 2 & 3	No elements in Cols 2 & 3
Contribute	• date stamp • add'l appeal • text box	• volunteer button • let us hear from you	All elements in Cols 2 & 3	No elements in Cols 2 & 3
Contact	• campaign address and email only	• contacts for press, scheduling, campaign address, phone, fax	Same as info in actual	Campaign address only

Table 3. Interactive elements in four versions of Republican candidate site

Upon their arrival in the computer laboratory, students received anonymous participant identification numbers and were directed to view a site version from one of the eight experimental conditions (four conditions for each of the two candidates). Students in all conditions were told they were participating in a usability study of campaign Web sites, asked to imagine that the person sponsoring the site was running for office in their home district, and further advised that they could spend as much or as little time exploring the site as they wished. After viewing the site, students were then sent to a Web page containing the post-test instrument. Since our cognitive engagement measures were recall based, students were instructed that they were not to return to the campaign site once they had begun the post-test survey.

In addition to collecting basic demographic information (age, gender, racial/ethnic identification), and media use data, the survey instrument and experimental protocol included measures of partisan and ideological identifications, political interest, and two measures of our primary dependent variable, cognitive engagement. Partisanship and ideological identification were collected on the basis of self-reports. In the case of partisanship, respondents were simply asked whether they considered themselves a Democrat, a Republican, an Independent, or Something Else. For ideological identification, respondents were asked to place themselves on a seven-point scale ranging from Strong Conservative (1) to Strong Liberal (7). Political interest was tapped using a four-point ordinal measure similar to those used in the National Election Studies. The dependent measure of cognitive engagement was gauged by measurement of the time spent viewing the site (in minutes) and a recall item designed to determine the number of issues users could correctly identify as having been discussed by the candidate from a list made up of roughly one-third correct issues and two-thirds incorrect issues. Across all conditions, the average time spent at a site was 8.26 minutes (SD=3.93), and the average number of correctly identified issues was 3.19 (SD=1.04).

We also included items in the post-test instrument to test whether our manipulations of text-based and campaign-to-user interactivity had the effect of eliciting a higher perception of interactivity on the part of the participants. This was accomplished by asking subjects to rate the interactivity level of the site on a seven-point Likert scale ranging from not interactive at all (1), to extremely interactive (7), and an open-

ended item asking participants to summarize what they had seen on the site. The text of the question stems was intentionally left relatively bare to test our expectation that text-based and campaign-to-user interactivity would be experienced similarly by study participants. The mean seven-point interactivity rating across conditions was 3.7 (SD=1.3).

Results

Overall, analysis of the data confirmed that subjects responded similarly in terms of perceived interactivity to both manipulations, and provided general support for the idea that text-based interactivity, while not unique to the World Wide Web, is a significant dimension of the way that Web communication affects the cognitive engagement of its recipients. Specifically, our hypotheses concerning the main effects of campaign-to-user and text-based interactivity on cognitive engagement were supported, although we were surprised to find our results concerning the combination of the two forms of interactivity to be the reverse of our expectation.

Prior to hypothesis testing, analysis began with a comparison of mean levels of perceived interactivity in each of the eight experimental cells. With the exception of some partisan differences in the control condition (subjects seemed to perceive the control (low/low) version of Democrat Bell's site as more interactive than that of Republican Gingrey's site), these mean levels revealed that the presence of *either* text-based or campaign-to-user interactive features on a site produced a marked increase in perceived interactivity in our subjects (see Table 4).

Condition	N	Mean
Control (Low/Low)	60	3.30 (1.41)
Bell	30	3.50 (1.35)
Gingrey	30	3.10 (1.45)
Campaign-to-User Interactivity	69	3.74 (1.12)
Bell	40	3.67 (0.97)
Gingrey	29	3.83 (1.31)
Textual Interactivity	72	3.81 (1.35)
Bell	37	3.95 (1.22)
Gingrey	35	3.66 (1.47)
Campaign-to-User and Textual	65	3.89 (1.26)
Bell	33	3.94 (1.27)
Gingrey	35	3.84 (1.27)

Table 4. Manipulation check: Mean interactivity rating of sites across conditions

Mean levels of perceived interactivity in each of the interactive conditions were significantly higher than in the control condition, though none were found to be significantly different from each other. Combining subjects assigned to view the Bell (D) site and those assigned to the Gingrey (R) condition, mean levels of perceived interactivity in all of the treatment conditions are significantly different from those of the control (low/low) condition. Treating the candidates separately does not yield statistically significant results, although mean differences are all in the expected direction. In other words, on average, subjects receiving either or both forms of the experimental treatment consistently rated their experience as more interactive. Thus, these data suggest that the experimental manipulations were effective in that site visitors perceived both forms of interactivity we identify qua interactivity, based on their own operative interpretations of the concept.

Testing for effects on cognitive engagement was achieved through a combination of simple means comparison, as well as ordinary least squares (OLS) regression of cognitive engagement measures on the manipulated variables while controlling for the effects of demographic variables and other covariates. Based on the means comparison, the results of which can be found in Table 5, we find strong evidence of the treatment conditions spurring cognitive engagement.

Condition	Minutes Spent on Site	Issue Recall
Control	7.46 (3.37)	2.78 (1.66)
Campaign-to-User	7.68 (3.08)	3.32 (0.96)*
Textual	9.00 (3.92)*	3.29 (0.98)*
Both	8.06 (2.98)	2.95 (1.14)
Collapsed Treatment Conditions	8.26 (3.93)*	3.19 (1.04)*

Table 5. Cognitive engagement by condition
Cell entries are for means.
Standard Deviations appear in parenthesis.
* Significantly different from control at p<.05 for a two-tailed test.

The results presented here combine subjects receiving the Democrat Bell's manipulated site and subjects receiving the Republican Gingrey's manipulated site. As noted earlier, the partisan manipulation was introduced in order to control for the effects of partisanship on cognitive engagement, and to make the sites look as authentic as possible. We present the combined results here for the sake of simplicity; analyzing the results separately for each candidate yields results consistent with those presented here. For example, subjects in the text-based interactivity conditions spent an average of nine minutes viewing the site, whereas participants in the control conditions spent only an average of about seven and a half minutes on each site. Similarly, text-based interactivity condition subjects were also able on average to recall more than three candidate issue topics, as opposed to fewer than three on average in the control conditions. These differences are all significant at the .05 level for a two-tailed test. The results for campaign-to-user interactivity were not as strong, producing only a difference in issue recall (roughly the same in magnitude as that found for the text-based interactivity manipulation) but no significant difference in the time spent viewing the site. Mean levels of both dependent variables, however, were statistically different from control conditions if one further collapsed all the treatment conditions together on the rationale that the levels of *perceived* interactivity are virtually the same in each.

A more sophisticated test of these hypotheses was achieved by regressing the two cognitive engagement variables on a model that includes the experimental manipulations as well as other factors that might affect memory and recall of persuasive communication, such as demographics, media use patterns, political interest, and partisan and ideological leanings. Although similar results to those we report here were obtained through a more traditional Analysis of Variance approach (ANOVA), this approach afforded a more accurate exploration of our hypotheses given the strong relationship between such factors and memory and recall (see for example, Petty and Caccioppo, 1986; Zaller, 1992). As Potter and Tomasello (2003) have noted in their analysis of media violence experiments, additional factors unrelated to experimental treatments can sometimes overshadow their effects, a condition that can be tested and controlled for via regression analyses, which they encourage in situations where there is reason to believe other factors may mediate the effects of the treatment. These OLS analyses again provided strong support for the main effect of text-based interactivity, and moderate support for the main effect of campaign-to-user interactivity, as can be seen in the coefficients reported in Table 6.

	Time Spent on Site (Minutes)	Issue Recall
Campaign-to-User Interactivity	.36 (.64)	0.39 (.20)#
Textual Interactivity	1.31 (.64)*	0.36 (.20)
Campaign-to-User and Textual	-1.24 (.89)	-.79 (.28)**
Political Interest	-0.04 (.28)	0.26 (.09)**
Partisan Preference	-0.52 (.56)	0.09 (.18)
Ideological Preference	.13 (.54)	.02 (.17)
Online News Consumption	0.06 (.12)	-0.04 (.04)
Age	0.13 (.12)	.04 (.04)
Nonwhite	-1.10 (.50)*	-0.19 (.16)
Female	0.92 (.49)	0.30 (.15)*
Constant	4.65	1.58
Adjusted R2	.02	.07

Table 6. Regression analysis of effects on cognitive engagement
Cell entries are standardized regression coefficients, standard errors appear in parenthesis.
* p<.05, ** p<.01. # p<.10

Text-based interactivity again appeared to significantly increase the amount of time participants spent on the sites and the number of issues correctly identified as being discussed by that candidate (B=1.31, *s.e.*=.64, p=.05). By contrast, campaign-to-user interactivity appeared only to affect the second measure, again in nearly identical fashion as text-based interactivity (B=.39, *s.e.*=.20, p=.07). Further, contrary to what one might expect based on theories of selective attention, these effects appear in the results despite including control variables for partisan and ideological preference, and we found no statistically significant results for the effects of partisan and ideological identification on cognitive engagement. Time spent on the sites and issue recall were unaffected by whether subjects viewed a site that was either consistent or inconsistent with their political preferences. We also found a slight negative relationship

between race and time spent on the site, and a slight positive relationship between gender and recall of issues, though these findings are unrelated to our central hypotheses.

The unexpected outcome of these analyses concerns Hypothesis 3 (the interaction term). As the estimates in Table 6 reveal, we find a significant and negative effect of the simultaneous presence of both forms on issue recall (B=-.79, *s.e.*=.28, p=.00). Indeed, subjects in the combined high-text-based, high-campaign-to-user conditions are estimated to recall nearly one fewer issue than those in other conditions. We believe such an outcome may be the result of a sensory overload effect, whereby site visitors were literally distracted from the text of the site by the joint presence of both sets of interactive features.

Discussion

The principal patterns in our findings can be summarized as follows. First, end-users of political websites are just as likely to perceive the rhetorical features of site content as they are the feature-based aspects as *interactive*, according to the sense of website interactivity operative in their thinking on such matters. Second, not only does text-based interactivity rival campaign-to-user interactivity in terms of user perceptions, but text-based interactivity appears to have a stronger effect than campaign-to-user interactivity on cognitive engagement, although our evidence suggests a positive relationship for both forms.

Studies of interactivity effects on political sites that rely on other conceptualizations of the concept (Puopolo, 2001; Reed, 1999) might therefore be missing an important dimension of interactivity. The higher levels of issue recall and longer time spent on high text-based interactivity sites in our study indicate, not surprisingly, that participants were reading the additional text boxes and endorsements added to the text-based versions. As noted, scholars of online campaigning stress the need for candidates to establish a rapport with visitors through their campaign sites (Bimber & Davis, 2003; IPDI, 2002). These aspects of candidate representation come through in the sites' verbal expression and photographs, and they were noted and remembered by participants. In fact, in open-ended explanations for their response to the site, participants specifically remembered examples of loaded language and negative campaigning in the site text. Moreover, photographs of the candidates with their families that were captioned or alt-tagged drew largely favorable comments about the candidates' attractiveness and family orientation. These comments may explain the greater level of cognitive engagement (as reflected in time spent on site) for the text-based interactivity condition. Users spent more time on the text-based versions and better remembered their content because there was more text and it was expressed in a more readable and lively fashion than in the control condition.

As compared with the minimal interactivity (low/low) condition of each site, the campaign-to-user interactivity version had a noticeable effect as well. Users spent slightly more time on this site version and had a statistically significant higher recall on issue positions. This higher level of cognitive engagement may be due to the simple fact that, when users are clicking on hyperlinks (e.g., donate button, volunteer button, site poll radio buttons, and events notices), they are making decisions about where to go next as they read. Kaplan (2000) explains this heightened attentiveness by noting that link cues (and other feature-based cues) offer a deeper cognitive engagement than plain text. Kaplan notes that the reader encountering link cues weighs alternatives and makes choices. Readers consider the choices that link cues offer. They also comprehend the cue both as an element in the site text and as a signal as to where the link leads. They "develop a contingent sense of the hypertext they are reading and continually modify their expectations and forecasts as the reading progresses" (p. 226). These micro-decisions and anticipations may increase cognitive engagement and thus recall of site content.

Finally, our results present an interesting anomaly. Though we found positive and significant main effects for text-based and campaign-to-user interactivity on different measures of cognitive engagement, the co-occurrence of both caused a significantly *lower* level of issue recall. The co-presence of both text-based and campaign-to-user interactivity may have led to overload, thus decreasing participants' ability to recall candidate issue stances. Teo, Oh, Liu, and Wei (2003) exposed users to low, medium, and high levels of interactivity and cautioned practitioners "not to provide too much interactivity. The level has to be optimized for the constraints of users' neural bandwidth and skills. If too much interactivity is provided than users can take [sic], it will be unlikely to hold their attention very long" (p. 300). Similarly, Bucy examined effects on users of both user-to-system and user-to-user interactivity on online news sites and found what he described as the "interactivity paradox" (2004, p. 65). This confirmed his hypothesis that comparatively more interactive tasks will generate more confusion and disorientation than non-interactive tasks. He concluded that "subjects evidently enjoyed news site interactivity and the active involvement it

entailed more than reading electronic text, but this form of online participation produced a certain amount of disorientation, exacting a cognitive and emotional cost" (p. 65). Thus it is possible that high levels of interactivity actually serve to decrease users' attention to content. The present study provides reason to explore these matters more fully as online campaigning continues to grow.

Conclusion

Our experimental design focused on two distinct forms of interactivity frequently found on political candidate sites in the 2002 U.S. House, U.S. Senate, and gubernatorial campaigns (Bimber & Davis, 2003; Foot et al., 2003). By focusing on user-to-campaign interactive features and text-based interactivity in the site text, we emphasized interactivity as a function of user perceptions, communication structure, and communication context. We found that the forms of quasi-interactive (reactive) interactivity used in this genre of sites had an effect on user perceptions as reflected in greater cognitive engagement, thus confirming Rafaeli's observation that "increased mindfulness [could] be a direct effect of interactivity" (1988, p. 124). Our study did not include other forms of media-centric interactivity (e.g., multimedia downloads) or user-to-user interactivity (e.g., discussion boards) found on national campaign sites. While such forms may be important on some sites, such as those for presidential campaigns, where campaign budgets, and the audiences are much larger (Bimber & Davis, 2003), we believe that future effects research on political website interactivity should include examination of campaign-to-user and text-based interactivity alongside multi-mediated and fully-interactive forms.

Furthermore, user response to either text-based or campaign-to-user interactivity showed a positive influence on the amount of time spent on the site and users' ability to recall candidates' issue stances. When both forms of interactivity were combined, however, the level of issue recall was reduced. This phenomenon suggests many questions for researchers interested in interactivity effects: Where is the threshold for user stimulation caused by interactivity? To what extent does variation in the number of features, the forms of interactivity in the verbal and visual text, and the combination of multiple forms affect user recall and response? To some extent, these are usability questions, but they also relate to campaign strategy as campaign managers and site designers decide where to put their emphasis.

Future research on political candidate Web site interactivity should also aim for large, representative samples of the voter population. Our own recruited sample of 351 participants exceeded sample sizes in prior studies of interactivity on political sites (Stromer-Galley & Foot, 2002; Sundar et al., 2003), but it was comprised of undergraduate students in a particular university and thus limits our ability to generalize from the findings. In future research that takes into account users' favorability toward candidates in response to their sites, issues of partisanship, representativeness, and sample size should all be taken into consideration.

Finally, future research on interactivity can benefit from devoting attention to common practices of site producers alongside its concern with theoretical conceptions of interactivity emerging in the literature. Recent large-scale studies of candidate Web presentation provide a clear picture of how candidates are actually using the Web in their campaigns (cf. Foot et al., 2003). Kiousis (2002), McMillan (2002), Rafaeli (1988) and others have made important contributions in distinguishing forms of Internet-based interactivity in regard to their media form, technological structure, communication context, communication function, user perceptions, and other factors. Our understanding of these phenomena and their effects will benefit to the extent that empirical and theoretical work in this area can maintain a fruitful dialogue.

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Notes

1. According to Rafaeli (1988), noninteractive sequences occur when there is no reciprocity, such as when a person sends a message to another, that second person sends a message to the originator, but the respondent's message is not related to the originator's in terms of content or interest. This often occurs when there is no cognitive engagement by communicants in the

exchange. Hewes' (1996) socio-egocentric theory of group interaction reminds us that communicators can feign meaningful cognitive engagement by referencing key words and ideas in another speaker's utterance. In this sense, a long conversation can be little more than a series of loosely connected monologues disguised by polite references to each other's statements. Thus, there is no guarantee of cognitive impact; nonetheless, the presence of quasi or fully interactive exchanges at least shows the potential for cognitive engagement beyond the reluctant observance of turn-taking rituals.

2. Participants were made aware that this portion of the site was functionally inoperative.

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