Credibility and Interactivity: Persuasive Components of Ideological Group Websites

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Abstract. The quickly growing presence of ideological groups on the Internet has garnered interest into how these groups use technology to persuade others. This study extends current research on the influential effects of website credibility and interactivity to the context of ideological group websites. Results of this study indicated that credibility and interactivity had direct and interactive effects on outcomes of agreement with the ideology, negative affective responses, and strength of argument when responding to the website. A number of these results may be due to (in)consistency with previous beliefs or violations of expectations regarding ideological group websites. Limitations and future directions are also discussed.

Keywords: Ideological groups, websites, credibility, interactivity

1 Introduction

The Internet and various forms of new media have allowed ideological groups to have a growing presence on the World Wide Web, prompting interest in how these groups use this technology to persuade others. Ideological groups hold clear, persistent values and beliefs and provide a structure or mental model to help their members interpret and navigate the world [31], [45]. As a result, ideological groups can fulfill a number of basic human needs, such as providing a sense of identity and strategies for acting

upon one's environment [3], [46]. Group ideologies range from social movements to political or religious causes¹ [45], and the widespread nature of ideological groups underscores their ability to perpetuate shared beliefs and motivate action [45]. The Internet provides an outlet for meeting these goals, and research is needed to understand how these groups use websites to exert influence.

Traditionally, it has been difficult to study ideological group communications due to their limited accessibility [14]. However, the Internet has become critical to these groups and serves as a central way for group members to communicate, interact, and build relationships [40]. An online presence enables recruitment of members who would be unwilling or unable to attend in-person functions or meetings [22]. In addition, the Internet provides an economical and less regulated way to reach individuals directly [4], [26] while fostering an international appeal and tightly controlling the group's image [12], [18]. There is sparse research on how aspects of website technology influence those who browse ideological group websites. One central goal of websites is to persuade its visitors to think and/or act in a particular way [11], but much of the website research to date has been done in marketing or political domains. Ideological group websites offer an important and rich extension to this literature, and we investigate two persuasive tools commonly seen on websites – credibility and interactivity. Specifically, we manipulate these website features to assess their impact on viewers' thoughts, feelings, and behavior.

1.1 Credibility

The level of credibility attributed to information is generally based on the overall believability of the information and/or its source [16], [11]. Trustworthiness and expertise of the message source are two traditional components of credibility [9], [17], [27], [35]. However, theory and research has expanded the construct to include other factors such as authority and character [28], experience [16], [35], goodwill [29], and external support [30].

Credibility is theorized to be one of the main ways in which a message can persuade [34], and sources high in credibility are generally found to be more persuasive than sources lacking credible properties [17], [27], [35]. Credible sources influence opinions, attitudes, and behavior [17], [41, [33]. Wilson and Sherrell's (1993) meta-analysis showed that a credible message from an expert source is a powerful source of attitude change. Furthermore, Pornpitakan (2004), citing Braunsberger (1996), points out that advertisement research has found that interacting with a more credible source results in more positive attitudes regarding a brand and its product. Presenting credible arguments on a website may therefore help ideological groups accomplish their goal of indoctrinating their members with their beliefs [3] and evoking attitudes consistent with their viewpoints. Furthermore, website features themselves, independent of the website sponsor, have been found to have an influence on credibility perceptions [10]. Therefore, we propose the following:

Examples include English Defense League (EDL), Sierra Club, People for the Ethical Treatment of Animals (PETA), and National Rifle Association (NRA)

Hypothesis 1: Viewing high-credibility websites will lead to more agreement with the ideological position presented on the website than viewing low-credibility websites.

1.2 Interactivity

Website interactivity refers to features of websites that allow participation by visitors such that they can actively control what information to access and and/or engage in two-way communication with the website host or other visitors [15], [23], [25]. Hyperlinks [8], website search capability, online bulletin boards [25], chatrooms, and drop-down menus [48] are some examples of interactive website components. Websites with these features are seen as more interactive than those without them.

The core function of website interactivity is to facilitate engagement with other users, members, and the website sponsor [15], [24], and the literature on interactivity oftentimes affirms interactivity's ability to create a highly involved and cognitively engaging website experience [20], [24], [36]. As a result, interactivity enhances attitudes and trust towards a website, the website sponsor, and its featured product [7], [19], [42], [43], [48]. Interactive websites have also been linked to favorable viewpoint adjustments [20] and greater acceptance of website information [5]. In addition, interactive websites increase satisfaction and reduce frustration by decreasing feelings of being ignored or manipulated [24] and are seen as more appealing than less interactive websites [13]. Such components are also important for ideological groups, as they aim to generate positive impressions of the group and their message. Accordingly, we suggest:

Hypothesis 2: Viewing websites low in interactivity will lead to a) less agreement with the ideological position presented on the website and b) more negative affective responses than viewing highly interactive websites.

These components have not been considered in tandem, especially for the websites of ideological groups. Credibility and interactivity may interact to influence reactions to the website. For example, a credible, interactive website may appear more legitimate and therefore synergistically boost agreement and positive affective responses to the website. Another possibility may be that the legitimacy conferred by websites high in credibility and interactivity heightens awareness of the extreme nature of the ideology. This heightened salience could evoke negative responses in website viewers whose own beliefs and values run counter to the ideology, prompting more negative responses and less agreement with the ideological views. We therefore ask:

RQ1: How will credibility and interactivity interact to influence agreement with ideological views presented on the website and affective responses towards the ideological group?

Attitudes and intentions are believed to be directly linked to behaviors [1, 2], and both credibility and interactivity has been linked to behavioral intentions and be-

havioral compliance [32], [35], [49]. Credibility and interactivity could have main effects or interactive ones on behavior. Similar to agreement and affect, credibility and interactivity may work together to foster a viewer's desire to express strong arguments in response to the ideological beliefs whether they are consistent with an individual's own beliefs or against them if they are perceived as a threat to an individual's beliefs. For example, seeing a website high in credibility and interactivity may motivate someone who is against the ideology to respond with a more thorough argument as they may feel that the views expressed are a real threat to his or her worldview. Alternatively, those same individuals may react to a highly credible and interactive website by withdrawing from engaging with this significant threat to their worldview, and consequently offer weak arguments in response to comments on the website. Credibility and interactivity could also work together in other ways. For example, seeing a website high in credibility but low in interactivity may seem inconsistent, prompting someone who is in favor of the ideology to feel a need to provide a strong argument to make up for the weaknesses seen on the website. Alternatively, someone who is against the ideology could potentially react to such an inconsistency by seeing the group as illegitimate and not a threat, thereby not feeling the need to speak out strongly against the group. We therefore ask the following:

RQ2: How will credibility and interactivity function to influence strength of arguments (writing quality, persuasiveness, soundness of arguments) when responding to the group?

2 Method

2.1 Participants and Design

Participants included 212 undergraduate students from a large university in the United States. All data were collected in a lab via online survey software. Mean age of the participants was $18.5 \, (SD=1.47)$, and 24% were male (n=51). A $2 \, x \, 2 \, x \, 2$ between-subjects design was used (credibility, interactivity, and violence were each high or low), and participants were randomly assigned to one of the eight conditions. Due to space considerations, only the credibility and interactivity manipulations are examined in this paper. Their effects are considered across both violent and non-violent group websites, and violence did not have an effect in any analyses here.

2.2 Procedure

Upon arrival, participants read and signed informed consent forms which indicated they would be looking at a website and answering questions about it. Participants were led to believe the website was associated with an actual group rather than created

for the purpose of this research. They were not informed that the website was fictitious² until the debriefing. Participants first completed a set of covariate measures. Following these measures, participants viewed the fictitious website then answered a series of questions about the website and the ideology as well as manipulation check questions and additional covariate surveys. The consenting, data collection, and debriefing processes were guided by the Institutional Review Board to ensure no coercion or undue stress or strain occurred.

2.3 Manipulations

To select an ideological view to represent on this website, we conducted a survey in an undergraduate psychology class that assessed their interest and viewpoints on a variety of topics (e.g., human rights, environmental issues, animal rights, etc.) on 7point scales. We selected the topic of separation of church and state based on its importance to participants and variation with regards to agreement with the ideology (importance M = 5.81, SD = 1.31, agreement with issues M = 4.73, SD = 1.86). We then created a website for a group called "The Christian Liberty Foundation" that included content such as the history of the group, issues on which the group acts, and upcoming events. The generated content was based on typical ideological group websites, and each website contained interactivity and credibility manipulations. Manipulated facets of credibility included authority, character, expertise, goodwill, external support, experience, education, position and writing quality, and were all either high or low. For example, for external support, on the high credibility websites, studies at prominent universities were cited to support numerous claims that were made, while obscure sources were cited for those same claims on the low credibility websites. As another example, the description of the founders of the group differed across websites, with the high credibility websites indicating that one of the founders had received a Master's degree from a prominent university, while for the low credibility websites the description stated he had received a lower degree at an obscure college. Two judges with communication expertise and who were blind to the manipulations evaluated the credibility of each condition. Their ratings confirmed that the high credibility conditions included high credibility cues to a much greater extent than the low credibility conditions (M =4.44 for high credibility websites vs. M = 1.92 for low credibility websites on an 18item, 7-point scale).

We manipulated interactivity through altering the ease with which participants could communicate with and navigate the website and through the presence of external links. For example, the high interactive websites had drop-down menus and the ability to post comments, offer feedback, request information, and click on external links, while the low interactive websites did not. The interactivity manipulation check based

Website creation was assisted by a professional web developer. All versions of the website were only available by login codes. They were not accessible by the general public or indexed in search engines. Data were always collected with an experimenter present.

on Liu's (2003) measure was successful such that a *t*-test demonstrated that those in the high interactivity conditions perceived the websites as more interactive (M = 3.72, SD = .62) than those in the low interactivity conditions (M = 3.26, SD = .51), t(210) = -5.91, $p \le .001$.

2.4 Measures

Open-ended responses. After browsing the website, the participants responded to two comments they were told had been posted on the website in the past. The first comment was in favor of the integration of church and state (pro-ideology) while the second comment argued for the separation of church and state (anti-ideology). Trained raters coded the responses for numerous dimensions which were combined to create three scales: agreement with ideology ($\alpha = .85$), negative affective response ($\alpha = .76$), and argument strength ($\alpha = .85$). R*_{wg} was calculated for each of the ratings variables and ranged from .67 to .85.

Covariates. Several covariates were included in the analyses. We assessed levels of intrinsic religiosity, or personal religious commitment, using a 3-item scale from the Duke University Religion Index (DUREL; [21]). Participants responded using a 5-point Likert scale (Definitely NOT true to Definitely true) (α = .92). We measured conservatism using Ray's (1983) 22-item measure with a 7-point scale (1 = Strongly disagree, 5 = Strongly agree) (α = .76). We assessed intelligence using the Employee Aptitude Survey (EAS; [38]), a 5-minute timed measure of verbal reasoning. We measured the level to which the participants perceived themselves to be personally affected by the issue using a 1-item measure on a 7-point Likert scale (1 = Does not affect me at all, 7 = Affects me very much). Time spent on the website was also recorded. Covariates significant at the .05 level for a given analysis were retained.

3 Results

We tested hypotheses 1 and 2a, which predicted that credibility and interactivity would lead to higher levels of agreement, using one-way between group ANCOVAs. These hypotheses were unsupported. We also conducted a *t*-test to assess the perceived credibility of the websites as measured by 25 items based on the manipulated credibility facets (7-point Likert scale, strongly disagree to strongly agree, α = .96). There were no significant differences in perceived credibility in the high (M = 3.26, SD = 1.17) versus low credibility (M = 3.31, SD = 1.26) conditions, t(210) = -.303, p = .76. However, for research question 1, there was a significant interactive effect for credibility and interactivity in the responses to the anti-ideological comment when controlling for intrinsic religiosity, conservatism, and total time on website, F(1, 204) = 4.69, p = .032, η_p^2 = .02. The lowest levels of agreement resulted after viewing websites low in credibility and high in interactivity (M = 1.55, SE = .08) while the highest levels resulted following browsing websites both low (M = 1.76, SE = .08) or high (M = 1.77, SE = .09) in interactivity and credibility (See Figure 1).

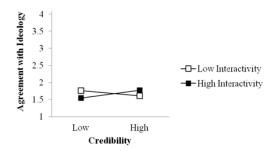


Fig. 1. Interactive effects for website credibility and interactivity on agreement

We also used between-subject ANCOVAs to test the hypothesis regarding negative affective responses. Controlling for intrinsic religiosity, hypothesis 2b was unsupported as the analyses resulted in a finding opposite as expected. Highly interactive websites actually resulted in higher levels of negative affective reactions (M = 2.83, SE = .07) than websites lower in interactivity (M = 2.59, SE = .07), F(1, 207) = 5.55, p = .019, $\eta_p^2 = .03$, when responding to the pro-ideology prompt. Follow-up analyses revealed that this was not due to differences in agreement with the ideological views across the high and low interactivity conditions (t(210) = .259, p = .796). An additional unexpected finding resulted for the credibility manipulation. Responses to the anti-ideological prompt for those who viewed websites higher in credibility had more expressions of negative affect (M = 2.89, SE = .07) than those who viewed websites lower in credibility (M = 2.55, SE = .07), F(1, 207) = 11.79, p = .001, $\eta_p^2 = .05$. Again, this was not due to levels of agreement with the ideology across credibility conditions, t(209) = -.672, p = .502. No interactive effects were found for negative affect.

Research question 2, which asked about the effects of the manipulations on argument strength, was also tested using a between-subjects ANCOVA, controlling for intelligence and the level to which they were personally affected by the issue. The interaction of credibility and interactivity was significant, F(1, 206) = 4.13, p = .043, $\eta_p^2 = .02$, when responding to the pro-ideological prompt. Viewing websites high in credibility and low in interactivity led to the strongest argument (M = 3.64, SE = .08) while viewing websites that were both high in credibility and interactivity (3.43, SE = .08) or low in credibility and interactivity (M = 3.43, SE = .08) resulted in the lowest levels of argument strength (See Figure 2).

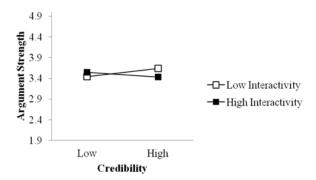


Fig. 2. Interactive effects for website credibility and interactivity on argument strength in a response to an ideologically-based prompt

4 Discussion

Persuasive technology is becoming more prominent with the rise of the Internet. This study supports the idea that website credibility and interactivity influence website visitors' perceptions of and responses to ideological views in ways that can either facilitate or impede ideological group goals. First-time visitors to an ideological website were impacted in different and sometimes opposite ways by the established credibility of the group (e.g, expertise, authority) and the ability to interact with the group's website compared to more traditional persuasive contexts (e.g., marketing messages). This may be largely due to the fact that ideologies are important for life meaning, reflecting part of peoples' identities. Participants' pre-existing beliefs on the separation of church and state may have prompted reactions to protect their identity, whether it was consistent with or threatened by the ideological group. For example, participants who may have desired more integration of church and state may have still reacted negatively to the extreme position taken up by the group such that they agreed with the issue but not the group's approach to it³. This is consistent with our finding that even the websites with high credibility cues were perceived as having low to moderate credibility. Use of a less extreme stance on this ideological view might have produced different findings and could be examined in future research. Such pre-existing beliefs connected to an individual's life meaning and identity are not likely to exist or be as strong for those products and topics that are researched in other credibility and interactivity literature, possibly leading to the discrepant findings.

Although strong main effects were not seen, their interactive effects offer important insights into the ways individuals' perceptions and responses are affected by ideological group websites. Prior research in non-ideological domains suggests that

As an example of this, part of one participant's comment stated: "While I agree with your point, you are going about it the wrong way. Name calling will not make a difference in our government."

websites high in credibility cues such as expertise and that allow visitors to easily interact with the website would lead to high levels of agreement, which we saw. However, we also found that when the website was low on both credibility and interactivity, participants agreed more with the ideological view. This may be due to their alignment with visitor expectations for websites [39]. Visitors may expect groups with greater amounts of established credibility to also have more sophisticated, advanced websites [30]. This is underscored by the finding that the lowest agreement resulted when participants viewed websites low in credibility but high in interactivity, which may have violated expectations about the website. Website visitors may expect a group with the means to create a sophisticated website to also have the ability to establish their legitimacy through their content and history. Such an inconsistency may serve to distract the viewer, or the fancy website features such as interactive abilities may be perceived as the group attempting to mask its lack of actual group credibility. More importantly, credibility or interactivity alone may not be enough to foster agreement with an extreme ideological viewpoint as shifts in agreement may be difficult to achieve due to preexisting beliefs on the topic. Unexpectedly, credibility actually boosted expressions of negative affect when participants responded to an anti-ideological prompt, regardless of agreement with the ideology. There are a few possible explanations for this. First, participants who did not agree with the ideology still saw the group's right to hold their viewpoint as legitimate and were upset that others were attacking it. Alternatively, those whose pre-existing beliefs aligned with the ideology rallied behind it and were upset when others disagreed. Another explanation is that they may have reacted negatively to the group's use of extreme measures, even when agreeing with the message itself. Or, the anti-ideology prompt simply primed more negative affect. Another unexpected finding was that interactivity led to greater negative affect. Interactive features may increase perceptions of legitimacy of the website, which can be a source of threat to non-believers, generating a negative response. Those who did agree with the group also experienced negative affect, possibly because they felt like the extreme way in which this group expressed the ideology was doing more to hurt than help the cause. However, the evocation of negative affect is not necessarily detrimental to the group's purpose. Negative affect can be a powerful source for motivation in terms of actions on behalf of the ideological group's cause [44].

Website visitors' strength of argument when responding to a pro-ideological prompt was also influenced by interactivity and credibility of the website. Low levels of interactivity boosted the effects of high credibility on argument strength while high levels of interactivity were detrimental to argument strength on the highly credible websites. When considered with the interaction for agreement, it appears arguments lower in strength were also highest in agreement with the ideology (i.e., when both credibility and interactivity are high or low). Therefore, ideological group websites that lack interactivity but present credible arguments may appear to be trying hard to seem legitimate through content even though their website is technologically unsophisticated, and those viewing the website may feel the need to articulate better arguments against the ideology to undermine the group. Additionally, websites higher in credibility but lower in interactivity may have allowed participants to read the information more thoroughly,

boosting their ability to generate stronger arguments against the ideology due to higher processing of the information provided on the website.

These findings are critical as ideological groups aim to persuade, and their websites can have functional and contextual components that can influence their ability to draw and keep members. Hate groups in particular have generated a large internet profile [12], and research on this topic may be particularly important in educating the public on how to shield themselves or better understand persuasion attempts by these groups. This research also extends work on persuasive technology to a new realm – ideological group websites – and more research is needed to understand the various ways in which ideological group websites function to persuade others. Investigations into ideological groups' use of threat (e.g., emotional appeals) and how it functions with other persuasive components such as credibility and interactivity on websites would be an important line of research, as would researching the effects of violent content.

Future research could also look at global perceptions of credibility of websites, as interactivity may have enhanced the perceived legitimacy of the website and the group. The fact that our credibility manipulations were not explicitly noticed yet still affected the participants in various ways also offers an interesting line of future research, as credibility may function in a more heuristic manner, creating a cause for concern as individuals may be being impacted by these ideological group websites without even being aware. The interactivity manipulation in this study was also limited (e.g., the external links were present but were not fully functional), and research could expand this element to fully delineate its effects.

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