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TITLE: Political Values, Political Attitudes, and Attitude Polarization in Internet

Political Discussion: Political Transformation or Politics As Usual?

ABSTRACT: The scholarly literature on the social effects of technology suggests a number of hypotheses regarding the political implications of the Internet, including that it will: make no difference (normalization); mobilize those already interested in politics (reinforcement); mobilize new types of participants with different political attitudes (mobilization); instill new types of attitudes (cultural change); and polarize attitudes (polarization). This paper will test the null hypothesis of normalization—that political discussion on the Internet does not represent people with different or more polarized political values, party identifications, ideology, and other political attitudes than does offline discussion. A 2001 representative sample mail survey of Pittsburgh, Pennsylvania residents elicited key political attitudes and political values—egalitarianism, humanitarianism, economic individualism, traditionalism, and racism. The results replicate findings from prior studies showing significant attitude and value differences between online and offline activists and discussants. But, when proper account is taken of discussion frequencies, these differences prove insignificant. For Internet users as a whole, the normalization hypothesis is supported and the mobilization and polarization hypotheses are rejected. Focusing on a particular demographic category to test the cultural change hypothesis, however, shows that Internet political discussion overrepresents younger people who are appreciably more conservative.

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The Internet offers considerable hope for a more informed and active citizenry, but it is by no means certain that it will fulfill this potential. By greatly reducing the cost of information and communication, the Internet could potentially result in revolutionary transformations of the public sphere (Bimber, 2000; Norris, 2001; Rheingold, 2000). Much depends, however, on who chooses to use the Internet for political purposes and what happens to their attitudes when they do. The Internet might benefit people who would otherwise not participate, or it might just mobilize the already politically active (Norris, 2001) or extremists (Bonchek, 1995). It could be used for thoughtful deliberation, or it might reinforce social psychological processes that lead to extreme and mistaken beliefs (Sunstein, 2001).

As with the advent of new public spaces in the past (Habermas, 1989), citizens who take advantage of the Internet need not represent the political views of the general population. The public sphere formed by the Internet need not represent general political views because of the digital divide (Katz, Rice, & Aspden, 2001; McConnaughey, Lader, Chin, & Everette, 2002; Rainie & Packel, 2001; Victory & Cooper, 2002), varying levels of political interest (Norris, 2001), varying information processing skills and inclinations (Hargittai, 2002; Verplanken, Hazenberg, & Palenewen, 1992), choices to avoid those with disagreeable opinions (Hill & Hughes, 1998; Sunstein, 2001), and polarization and information cascade processes during online discussion (Anderson & Holt, 1997; Spears, Lea, & Lee, 1990; Sunstein, 2001). The Internet can overrepresent certain political views by, among other possibilities, having more and more vocal advocates of these views.

This paper examines the representativeness of an important form of political activity on the Internet—political discussion. Political discussion on the Internet is one

of the key forms of political participation that technology enthusiasts hope the Internet

will promote (Kirschner, 1994; Rheingold, 2000). Online political discussion could

empower discussants in ways that offline discussion does not. Online discussion can

potentially reach and involve many people who are not in the discussants' offline social

network; it may help recruit participants for political causes (Hill & Hughes, 1998); and

discussants can more easily make their points by referencing instantly accessible

information.

This paper measures the representativeness of political discussion on the Internet

in terms of discussants' political values and key political attitudes such as ideology

(Converse, 1964) and party identification (Campbell, Converse, Miller, & Stokes, 1960).

The political science literature shows that political values, such as egalitarianism and

individualism, play a crucial role in determining the American mass public's political

judgments. Political values substantial affect preferences on policy issues, leaders'

performance, and candidate evaluations (Feldman, 1988; Hurwitz & Peffley, 1987;

Rasinski, 1987; Steenbergen, 1995), and are considered more determinative of public

opinion than political ideology (Sniderman, 1993). In addition, racial attitudes play a key

role in American public opinion beyond the effects of political values (Gilens, 1995).

Employing a 2001 representative sample mail survey of 1200 Pittsburgh

residents, I examine whether respondents who discuss politics on the Internet differ from

offline political discussants in terms of political values and attitudes. I also examine the

extremity of their values and attitudes. This study has advantages over prior research

along similar lines (see below). It examines a broader array of political values and

attitudes than prior research. Also, analyses here account for how frequently people with

particular values and attitudes discuss politics. Because it does not account for frequency of discussion, prior research obscures which values and attitudes are most vocally represented. The findings here support prior research when frequency is not taken into account. When it is, findings run contrary to prior research, showing that there are no significant attitude and value differences between online and offline discussion as a whole. Also contrary to past speculation, it is found that conservative young people are overrepresented in online discussion relative to offline discussion. No evidence is found for the popular theory that online discussion polarizes attitudes more than offline discussion.

THEORY AND HYPOTHESES

Norris (2001) sketches several alternative hypotheses regarding the political ramifications of the Internet—normalization, reinforcement, mobilization, and cultural change. The normalization hypothesis holds that, as Internet use becomes more widespread, political uses of the Internet will become indistinguishable from non-Internet political activity (Hill & Hughes, 1998; Margolis & Resnick, 2000). As the Internet population becomes more representative of the population as a whole, online political activity should become subject to the same structural forces affecting political activity in the general population, thus normalizing this activity. Normalization implies there will be no substantial or significant differences in political values and attitudes between those politically active on the Internet and those active generally. It also suggests that online participants will not significantly differ demographically from offline participants.

The reinforcement hypothesis maintains that the Internet will increase political activity only among those who are already interested and active in politics. Because the

Internet reduces information and communication costs, it increases the amount of political activity among those already active. Reinforcement therefore implies no value or attitude differences between online and offline political discussants. Reinforcement differs from normalization only in predicting that overall online and offline political activity will be higher for online discussants than for offline discussants, other factors equal.

The mobilization hypothesis stipulates the Internet will mobilize new types of participants. Norris (2001) suggests the Internet will stimulate participation by the young, affluent, and educated. Such people might be attracted to the non-mainstream political organizations found on the net. Norris believes the affluent and educated people who may become active on the Internet will most likely possess post-materialist values, because affluence and education give rise to post-materialism. These values include civil libertarianism, social egalitarianism, and anti-traditionalism (Inglehart, 1990). Research (see below) also indicates Internet users are more pro-business and opposed to government intervention. In short, mobilization should manifest in online political discussants being more socially liberal and economically conservative than offline discussants. In addition, because new types of people are mobilized, online discussants should be demographically dissimilar from offline discussants.

The cultural change hypothesis holds that the Internet will change social values and attitudes by serving as the meeting place of a distinctive, individualist and irreverent web culture (Norris, 2001). Among other possibilities, a distinctive Web political culture could maintain itself by socializing or persuading new Internet users. Because the mass appeal of the Internet started in 1993, with the introduction of the Mosaic web browser,

some socialization effects may already be evident among young users. Moreover, although they are relatively stable, political values and attitudes can be modified through persuasion (McCann, 1997; Rokeach & Ball-Rokeach, 1989). Thus, even older users of the Internet could show value change due to the Internet. If cultural change is occurring, Norris predicts it should lead to online political discussants being more socially liberal and economically conservative than offline discussants, just like the mobilization hypothesis.

Sunstein (2001) believes the Internet will be particularly susceptible to attitude polarization in discussion groups. A considerable literature indicates that discussions of issues in groups often results in attitudes becoming more extreme in the direction of the group members' average initial inclination (Myers & Bishop, 1971). Shared group identity enhances polarization by making social desirability considerations more important and limiting the pool of arguments available (Spears et al., 1990). Unlike with face-to-face discussion, the Internet allows a high degree of choice with respect to political discussion partners. Consequently, Sunstein argues, shared group identities should be more prevalent on the Internet and so should group polarization. The polarization hypothesis stipulates that political values and attitudes will be more extreme for online than offline political discussants.

Note that the hypotheses under consideration here are comparative—that is, they are about how online and offline participants differ in attitudes, values, and polarization. Consequently, the findings of this paper are not meant to shed light on polarization or value differences in themselves. Even if online and offline participants do not differ in level of attitude or value polarization, this does not mean that a great deal of polarization

does not occur in both environments. Also, even if online and offline participants do not differ in their values, they may nevertheless be quite different from the population as a whole. These are properly subjects of another paper.

PAST RESEARCH

Hill and Hughes (1998) examine 1995 and 1996 Pew survey data of a representative sample of Americans. They find that Internet activists (people who have ever used the Internet for political discussion and other activities) are more liberal and Democratic than the general public. Activists are less willing to ban books, more accepting of gays, more contrary to regulating pornography, and more likely to "understand" the anti-government Oklahoma City federal building bombing than the general population. They were no different than the general public regarding regulating business and helping the needy. This loosely fits a pattern of socially liberal, but not consistently anti-government or economically conservative.

In a content analysis of randomly selected Usenet political newsgroups, Hill and Hughes (1998) find that, of ideological threads, 71% were right wing and, of pro- or anti-government threads, 94% were anti-government. These results are inconsistent with Hill and Hughes' conclusions about Internet activists based on survey data. This suggests that either Usenet is not representative of Internet discussion or Internet activists in the mid-1990s participated online at very unequal rates. These results suggest the importance of accounting for the *amount* of political involvement of Internet activists.

Davis and Owen (1998), also using survey data from the mid-1990s, found that the online American public (those online at least once every few weeks) was more egalitarian and less traditionalist regarding lifestyles and families than the offline public.

They found no differences in party identification.

Norris (2001), using a 1999 Pew survey of the U.S. population, finds that people who described themselves as Internet enthusiasts also were more likely than Internet non-enthusiasts to describe themselves as pro-gay rights, pro-choice, pro-civil rights, pro-women's rights, pro-business, liberal, and republican. They were less likely to describe themselves as religious. These differences were generally small, accounting for less than a one-point mean difference on a 10-point scale, but they were significant. Using another 1999 Pew survey, Norris finds that Net users (people who go online to access the internet or email) are less likely than non-Net users to agree with traditional moral values, more likely to agree with economic laissez-faire, and more likely to embrace a Republican party identification. Correlations for scales of these questions with Net user status were .28, .34, and .08, respectively—small correlations. The results are consistent with economically conservative and social liberal Net users. Because Norris's data is more recent and Internet use is changing rapidly, her results should be given somewhat greater weight.

SHORTCOMINGS OF PAST RESEARCH

Prior research has failed to control for amount of political activity on the Internet in making inferences about the political effects of the Internet. For example, Hill and Hughes (1998) compare people who say they have *ever* used the Internet for political discussion and other activity to people who say the have *never* done so. But, people who participate do so at extremely different rates. For instance, in the current data the top 20% of political discussants (both online and offline) report a mean discussion time of 441 minutes a month. The lowest 20% of discussants with non-zero reported discussion

time report a mean of 4 minutes a month. With such uneven participation rates, the distribution of political values and attitudes for discussants could be completely different from their distribution in actual discussion. To understand how values and attitudes differ in online as opposed to offline participation, research should compare people who participate online and those who participate offline, accounting for amount of participation.

METHODOLOGICAL AND STATISTICAL CONSIDERATIONS

To address differences in political discussion rates, this paper will analyze, among other things, the distribution of values and attitudes in "discussion instances." For each respondent, the data have an indicator for approximate frequency of Internet (and overall) discussion. The frequency of people's Internet discussion for a one-year period can be used to weight the political values and attitudes of discussants. This gives an estimate of the average values and attitudes manifested in instances of Internet discussion during that year for the sample population. This approach assumes that political discussions, on average, reflect the political values and attitudes of the people who participate in these discussions—as does prior research. Instances of discussion by a person are therefore counted as reflecting the values and attitudes of the person. Thus, to get an estimate of what values and attitudes are prevalent on the Internet, each person's values and attitudes should be weighted by how frequently they discuss politics. This yields the average values and attitudes of "discussion instances" of the sample. Another way of thinking of this is that participant values are being weighted by the frequency of their discussion.

Many of the analyses reported here focus on the differences in means of political values and attitudes between various groups, such as online and offline discussants. No

controls are included for demographic and other characteristics because the hypotheses described above allow the possibility that demographic differences explain some of the value and attitude differences between groups. The primary focus of this paper is not what causes differences but whether differences exist in the first place. These differences do, however, hold implications for causal hypotheses, and these implications will be discussed.

The statistical method of choice for determining the significance of group differences is statistical bootstrapping (Efron & Tibshirani, 1993). This methodology involves using resampling of the data itself to determine the statistical distribution of parameters such as mean differences. Advantages of the method include: It does not rely on the assumption of normally distributed parameters, as does the t-test. It is robust for most kinds of parameter distributions and for small sample size. It is valid for partially non-independent data—for example, mean differences based on two variables in which some observations contain data from the same person for both variables, while other observations contain data for only one variable. It also gives valid results for weighted data.

METHOD

Participants

One thousand two hundred Pittsburgh residents of voting age were selected from Cole Information Services' "Marketshare" directory of the Pittsburgh area. Of all available directories, this directory comes closest to being an exhaustive list of adults in the Pittsburgh area. Data for the directory, which is updated biannually, comes from the Census, phone book, voting lists, obituaries, and other sources. Because of its

information sources, the directory likely overrepresents adults who have permanent residency and therefore underrepresents the economically disadvantaged. Nevertheless, the Marketshare directory is superior to alternative directories. A sample was drawn that stratified by gender, age, estimated household income, and geographical location.

Data was obtained from 524 respondents, with a response rate of 65%. Non-respondents and those who explicitly declined participation are counted toward the denominator of the response rate. Those not counted are the deceased, ineligible, and bad addresses. Death was determined by communications with people familiar with the respondent or from the Social Security Death Index. The ineligible include people who are younger than 18 years of age, not American citizens, or no longer residents of Pittsburgh. Respondents too perpetually ill or infirm to understand the survey or reply to it were also counted as ineligible. Respondents were counted as bad addresses if so indicated by the Postal Service, no valid phone number could be found via the Cole directory and several phone company directories, and the respondent did not appear in the Allegheny County Real Estate assessment web site, a comprehensive database of Pittsburgh property owners.

Survey respondents were 54% male and 46% female; had a median age of 47; and were 88% Caucasian, 8% African-American, and 4% other. Median and mean education was "Some college, No degree." Seventy-three percent of respondents owned their own home. Age-wise, the survey is representative of the population for the Pittsburgh area—the median age in the 2000 Census for Pittsburgh residents 20 years old and above was also 47. Responses slightly overrepresent males. They also overrepresent Caucasians, who make up 88% of the sample, but only 68% of the population according to the

Census. This may reflect underrepresentation of African-Americans in the Marketshare data. Alternatively, members of this group may be disinterested in politics or distrustful of how the survey data would be used. Although not a perfect random sample from the Pittsburgh area, respondents do represent a diverse cross-section of people.

Pittsburgh is an ethnically and class diverse community with a city population of 334,583 and over one million including surrounding areas, according to the 2000 Census. Neighborhoods range from suburb-like residential areas to areas of urban poverty. Although Pittsburgh is known to have a moderately high quality of life for a city its size, people intimately involved with public life in the city do not believe this leads to either an especially high level of political involvement or public dialogue.

Materials and Procedures

Respondents were first sent a one-page pre-notification letter indicating they had been selected for a Pittsburgh-wide mail survey being conducted by Community Connections, a non-profit and non-partisan community engagement project housed at Carnegie Mellon University. They were told the confidential questionnaire would arrive shortly with a small monetary gift and a coupon for a free Blockbuster video. They were also told that if they returned the questionnaire they would be entered into three lotteries in which they could win up to $300. The second mailing consisted of a similar explanatory letter, the gifts, and an 11-page questionnaire booklet, which would take about 20 minutes to complete. Three more mailings were sent. All letters stressed that we were interested in responses from everyone, not just from those interested in politics. During the period prior to the third mailing, research assistants attempted to phone all participants who had not yet returned the questionnaire.

Measures

Discussion Frequencies and Amount:

The questions for overall discussion frequency and amount were: "Think back on the times you have discussed political issues. On average, about how many times a month do you discuss political issues? [__ times a month] On average, about how many minutes do these discussions last? (Your best estimate is fine.)   [__ minutes]." These questions were preceded by a definition of "political"—any issue for which at least some people call for a government solution—and questions meant to help respondents remember their political discussions. Overall discussion frequency, which is 90% offline discussion, was converted to offline discussion by subtracting online discussion frequency.

The other dependent variable, frequency of online political discussion, was measured by the question: "How often do you go online to:... ...Express an opinion about a political or social issue to a bulletin board, on-line newsgroup, or email list? [Hardly Ever; Every couple months; Every couple weeks; 1-2 days per week; 3-5 days per week; Every day]" This question was based on Questions 63 and 66 of the Pew Research Center's Technology 1998 Survey. The online discussion question was converted to a more continuous scale by first stipulating the frequency per month represented by each response category (e.g., .5 per month for every couple months), taking the midpoint between two categories' frequencies to represent the break point at which respondents would choose one category or another, and then taking the midpoint between breakpoints to approximate the actual mean frequency represented by a response category.

To get an estimate of the accuracy of the scaling for the online discussion question, a comparable scaling for the continuous overall discussion frequency variable was tested. The continuous overall discussion frequency variable was converted to resemble the more categorical online discussion frequency variable by applying the breakpoints. The predicted mean values of overall discussion proved to be good estimates of the actual means, except for the most extreme responses. A more sophisticated approach, based on maximum likelihood estimation of a best gamma distribution, proved not to yield category mean estimates as good as the midpoint assignment method.

Political Values and Attitudes:

Political Interest—A weighted average of questions 310 and 313 of the 1952-1992 cumulative codebook of the American National Election Survey's (ANES) (1965-1992 version with response categories presented as labels on a 7-point scale). Weights were assigned by principle components analysis.

Political values—Averages of answers to Likert scale questions for humanitarianism, egalitarianism, economic individualism, traditionalism, and racism taken from the ANES. Short versions of these scales were employed. For egalitarianism, (moral) traditionalism, and racial resentment, the short scale was chosen based on William Jacoby's ANES report's recommendations regarding short scales for these items. Only one item from the racial resentment scale was used, because other items were judged too inflammatory for this survey. For individualism, one item from Feldman's (1983) recommendations for a short scale was used. And, for traditionalism, two of the three items are based on Steenbergen's (1995) recommendations for a short scale, while

the third item was selected because it has good corrected item-total correlation, best

reliability, and best average inter-item correlation according to Steenbergen.

Egalitarianism items were: We have gone too far in pushing equal rights in this

country. If people were treated more equally in this country we would have many fewer

problems. One of the big problems in this country is that we don't give everyone an

equal chance. The racial resentment items were: Over the past few years, blacks have

gotten less than they deserve. Individualism: Any person who is willing to work hard

has a good chance of succeeding. Hard work offers little guarantee of success. If people

work hard they almost always get what they want. Moral Traditionalism: The newer

lifestyles are contributing to the breakdown of our society. The world is always changing

and we should adjust our view of moral behavior to those changes. Humanitarianism:

All people who are unable to provide for their own should be helped by others. It is

better not to be too kind to people, because kindness will only be abused. People tend to

pay more attention to the well being of others than they should.

Political Attitudes—Party identification, ideology, internal and external political

efficacy were also standard ANES questions.

Demographics—Standard demographic questions from the ANES and other

sources.

RESULTS

The results are presented in sections that cover: a) whether the frequency of

political discussion, a key variable here, adequately reflects total time spent discussing—

the variable of interest; b) the reliability and validity of the frequency of discussion

questions, c) demographic differences between online and offline discussants—which are

relevant to the mobilization hypothesis; d) comparison of the political values and attitudes of online and offline users, activists, and discussants, replicating earlier work; e) comparison of the values and attitudes of online and offline discussants, controlling for frequency of discussion; f) an examination of the cultural change hypothesis; g) an examination of the polarization hypothesis; and h) a discussion of the robustness of key findings to error and bias in the frequency of discussion measures.

Frequency of Discussion vs. Time Spent Discussing

Because the survey did not contain a question about amount of time spent discussing politics online, analyses of Internet discussion instances depend on reported discussion frequencies. Amount of time spent, however, is the variable of real interest. So, it is important that frequency and amount of time spent discussing are highly correlated. The data do in fact show a *.91 correlation* (N=512) between the frequency and amount of overall political discussion (both on and offline)—which was measured. The correlation of the logged versions of these variables was *.88*. These correlations suggest that the frequency measure of online political discussion should be an excellent indicator of the amount of time spent in such discussion.

Reliability and Validity of the Frequency Measures

Measures of the frequency of political discussion are crucial to the analyses in this paper. Questions, however, can be raised regarding whether people can give answers to such questions sufficiently accurate that findings are not erroneous. Unobtrusive behavioral measures of online and offline discussion among the 524 respondents would, of course, be ideal. But, such measures would be very expensive to collect and are not available at this time. Thus, I turn to an examination of the trustworthiness of the survey

measures. Three issues are at stake here: the overall accuracy of the frequency measures (reliability), whether response errors are biased in a particular direction (validity), and how robust the findings based on the measures are to error and bias. A subsequent section will discuss the evidence that key findings are robust to error and bias, but this section considers the reliability and validity issues.

Good survey practices were followed to insure acceptable levels of error in the measures of frequency of political discussion. The frequency measures of overall political discussion and of computer-mediated discussion occurred after a definition of "political discussion" and examples of political issues. Also, they occurred after multiple questions meant to jog respondents' memories about their political discussions and their habits of computer use. These included questions about what political issues they discussed, where they discussed these issues, and how long ago their last political discussion occurred.

It was expected that respondents would base their impressions of the average frequency of their political discussions appreciably on their recollection of how long it had been since their last discussion. Indeed, average frequency of discussion and time duration since respondents' last discussion (converted into an estimate of average discussion frequency) have a high .60 correlation (p<.001, two-sided). This is a correlation that would pass in many factor analyses as evidence that two items measure the same underlying factor. To the extent these measures differ, they hopefully differ because respondents adjusted the average up or down based on their impression of how typical or atypical the elapsed time since their last discussion was—making it a more accurate measure of average frequency.

Perhaps the most compelling evidence that the discussion frequencies are not subject to excessive error can be found in another paper based on the same dataset that treats online and offline discussion frequencies as dependent variables in multivariate regressions (Muhlberger, 2002). This paper finds that a variety of demographic, motivational, and computer access variables have significant and expected effects on the discussion frequencies. Some of these effects are non-obvious theoretical predictions. For instance, variables indicating willingness to engage in public and conflictual discussion have a much stronger effect on online than offline discussion frequency. It is implausible that measures that fit complex expectations so well are largely random noise or mere concoctions.

Another concern is non-random error due to people exaggerating the frequency of their participation to present themselves favorably. While political participation questions generally do invoke social desirability concerns, this may not hold for political speech because there may well be no social norm that people should speak about politics. On the contrary, in everyday life people often follow a norm of avoiding political discussion (Eliasoph, 1998). The survey-taking context may mildly favor exaggerating amount of political discussion, but there probably is no everyday social norm stoking such exaggeration.

A number of findings suggest social desirability bias is tame for reported discussion frequency. First, the average frequencies reported are highly plausible—the frequencies are very low and very unequally distributed. Half the respondents reported brief political discussions three or fewer times a month. The top 11% of respondents account for as many discussion instances as the bottom 89%. Finally, 85% of

respondents indicated that they "hardly ever" discuss politics online, the lowest response possibility.

Second, substantial numbers of respondents were willing to take positions that run contrary to a norm in favor of political discussion. On one question, 57% of respondents did not disagree that people's political views are private matters. Fifty-two percent did not disagree that their own political views were their "own business." Forty-seven percent indicated that a statement that they avoided discussing politics because of the potential for conflict was "moderately true" to "very true." Taken together, 89% of all respondents gave a response on at least one of these questions that runs contrary to a norm favoring political discussion.

A third finding suggests social desirability bias does not affect reported discussion frequency. The question regarding time elapsed since last political discussion involves recalling a specific discussion and should, therefore, be less susceptible to social desirability bias than responses to the average discussion frequency question. Thus, if such bias exists, an estimate of the average frequency based on time elapsed since the most recent discussion should on average be lower than responses to the average frequency question. In fact, however, discussion frequency based on time elapsed since the most recent discussion has a higher average than does the average frequency question (p<.001).

Demographic Correlates and the Mobilization and Reinforcement Hypotheses

Table 1 displays differences in mean values of demographic variables for online versus offline discussants and discussion instances (see Methodological and Statistical Considerations section). With one important exception, the results are much the same for

discussants and discussion instances. Online discussants are younger and less likely to be homeowners than offline discussants. With respect to education, which is very nearly significant, the mean difference is positive for discussants but negative for discussion instances. This difference matters because the positive coefficient suggests that online discussion advantages the already advantaged, while the negative coefficient suggests the reverse. The results for discussion instances give a better understanding of whom online discussion represents, and these prove to be consistently people who participate politically at lower rates across a variety of political activities.

Insert Table 1 About Here

These results seem to support the mobilization hypothesis, namely that the Internet will politically mobilize previously inactive people. Further analysis complicates that conclusion. In a multivariate analysis of political discussion using the same data (Muhlberger, 2002), I find that age and home ownership do not significantly affect offline political discussion. This means the young and non-home owners are not disadvantaged with respect to offline political discussion. Thus, the finding in Table 1 that the young and non-homeowners speak more online than offline indicates more, not less, inequality online. On a sanguine view, this might be construed as helping to compensate for participation advantages of these groups in other political activities.

The mobilization hypothesis, however, is supported with respect to education. In the multivariate analysis, education strongly increases the amount of offline discussion, but not of online discussion. In the univariate analysis in column 2 of Table 1, education

proves *negative* and all but significant (p=.06). Thus, online discussion is more equitable

to the less education. Also, the multivariate analysis indicates offline discussion is much

lower among women, while online discussion has equal participation by women and men.

Online discussion is, therefore, more equitable for the less educated and women, but

more inequitable for the young and those who do not own homes—who are

disadvantaged in overall political activity. On the whole, then, the mobilization

hypothesis is supported, but weakly. The reinforcement hypothesis, that those already

advantaged will be further advantaged by the Internet, is not supported.

Internet Users, Activists, and Discussants

To clarify whether the current data differ from that in prior research, Table 2

compares two sets of groups—Internet users with non-users and Internet activists and

non-activists—that were the subject of prior research (Hill & Hughes, 1998; Norris,

2001) and are discussed above. Table 2 also adds a comparison more appropriate for

understanding online political discussion—online versus offline political discussants.

Online discussants are people who discuss politics online once every two months or more

often. Offline discussants are those who only discuss politics offline and do so once

every two months or more.

Insert Table 2 About Here

The first column of Table 2 shows that Internet users differ from non-users in

subscribing less to traditionalism, being more Republican, and having higher internal

political efficacy. All these findings are consistent with Norris's (2001) results based on

surveys of the American and European publics. Norris's finding that Net users embrace free-market solutions might suggest that Internet users would be more Republican and more inclined to believe in economic individualism. Table 2 shows they are more Republican but not more individualist. Table 2, column 2 also shows that Internet activists are more likely than those who are not Internet activists to agree with egalitarianism, disagree with traditionalism and racism, and be more politically interested and efficacious. These findings are consistent with Hill and Hughes' socially liberal Internet activists. Hill and Hughes' economically conservative activists would probably be more likely to embrace economic individualism than the activists in column 2. Focusing on those who discuss politics online versus thus who discuss politics offline exclusively, column 3 shows a pattern very similar to the difference between Internet activists and non-activists.

In general, Table 2 indicates that the current data largely replicate the results of previous research. Internet activists and users are more socially liberal than Internet non-activists and non-users. Moreover, the same result holds for online and offline discussants. This comparison is especially relevant to the hypotheses of this paper, which focus on differences between online and offline political discussion. Thus, results correspond largely with previous research when discussion frequencies are not taken into account. The next section, however, will take frequencies into account and will show that online discussions do not prove to be more from liberal discussants than are offline discussions.

Discussion Instances

Table 2 compares the political values and attitudes of various groups, but it does not take into account the frequency with which people discuss politics online or offline. High frequency discussants may not have the same values and attitudes as lower frequency discussants. Table 3 takes the frequency of discussion into account by examining the values and attitudes reflected in instances of discussion. The first column compares all online discussion instances with all offline discussion instances.   Column 1 of Table 3 indicates there are no significant differences in political values reflected in online and offline discussion instances. Put another way, once the frequency with which people discuss politics is accounted for, no political value differences appear to exist between online and offline political discussion. This contrasts markedly with the third column of Table 2, in which online and offline political discussants show clear value differences, not accounting for the frequency of discussion. If this result proves replicable, much of the discussion in the literature regarding value differences between people politically active online versus offline is about differences that do not really exist—at least when the frequency of involvement is taken into account.

Insert Table 3 About Here

Two features of column 1 of Table 3 provide mild support for the mobilization hypothesis. The only mean difference that proves significant at the .05 level in Table 3 is for political interest. That difference indicates that online discussion instances reflect a slightly lower level of political interest than offline instances. Similarly, internal political

efficacy proves negative and nearly significant at the .05 level. Both the efficacy and interest results indicate that people who would normally participate less, participate more online. Note that the sign of efficacy and interest are reversed in Table 3 from that in Table 2—showing the importance of accounting for frequencies.

Do these results stand up to scrutiny? Even disregarding the frequency adjustment, the results in column one of Table 3 are not fully comparable with the third column in Table 2, which compares online political discussants with those who discuss offline exclusively. In contrast, Table 3 column 1 compares all online discussion instances with all offline discussion instances, which includes offline discussion by online discussants. The comparison between online discussants and offline discussants assumes that the values of online discussants only reflect in online discussion, which they do not. Second, "online discussants" are defined as those who discuss politics once every two months or more often. They do not include those who indicated that they "hardly ever" discuss politics. Some of the people who indicated "hardly ever" probably do occasionally use the Internet to discuss politics. Others probably do not, because there was no "never" response category. Online discussion instances address this by assuming a low rate of discussion for all people who choose "hardly ever" rather than no discussion, which is implicit in the definition of online discussants. Overall, then, online discussion instances provide a more accurate indicator of mean political values expressed than online discussants.

But, the reader will doubtlessly ask what would happen if discussion instances were calculated more in accordance with the online and offline discussants distinction. In an analysis not shown in Table 3, discussion instances of people who were defined in

Table 2 as "online discussants" are compared with discussion instances of only those who counted in Table 2 as "offline discussants." Also, "hardly ever" discussions are dropped from consideration. Nothing proves significant at the .05 level, one-sided. Thus, even with changes to make the analyses just like those in Table 2 column 3, taking into account discussion frequency results in no significant differences in political values.

A final consideration is that weighting the values by uneven discussion frequencies necessarily expands the standard error of the estimated mean difference. Thus, it may be that the results in Table 3 do not show significant differences only because the variances of the mean differences have grown dramatically. This does not, however, appear to be the case on closer examination. The average bootstrapped standard error for the significant or nearly significant mean differences in column 3 of Table 2 is .34, but the average for the same six coefficients in Table 3 column 1 is .42, a small difference considering most questions are on a scale of 0 to 10. A more plausible explanation of the null findings of Table 3 focuses on the systematic weakening of already weak mean differences in Table 3 compared with Table 2. The average absolute mean difference for the six significant or nearly significant differences in Table 2 column 3 is .68, but the same coefficients in Table 3 column 1 are .34—half of Table 2.

It is also worth noting that none of the variables in Tables 2 or Table 3 column 1 have particularly large mean differences relative to the standard deviations of their variables (see "Mean Dif / Variable S.D."). For example, the largest mean difference in Table 2 column 3 is for racism, and that is -.3 of a standard deviation. Given that it generally takes at least three standard deviations to account for much of the data, the

differences discovered would not imply society-altering conclusions even if they were significant.

Table 3 column 1 shows that online discussions are no different than offline discussions in terms of the ideological orientations of discussants. This runs counter to the mobilization hypothesis, which suggests that Internet discussions should be more from socially liberal participants. These findings also run counter to the findings of Table 2, which show that the data support the mobilization hypothesis when the data are analyzed by methods used in prior research—namely, when discussion frequencies are not taken into account. Taking frequencies into account is a better methodology, so results from prior research may have been misleading.

Cultural Change

Column 2 of Table 3 presents a test of Norris's cultural change hypothesis—that the Internet is socializing a new generation into socially liberal and economically conservative values. The column compares online and offline political discussion instances by those 32 years of age or younger. Persons aged 32 at the time of the survey were 24 at the advent of the mass Internet, with the introduction of the Mosaic browser. At age 24, people may well have had friends or siblings in college, increasing the likelihood of their exposure both to the Internet and its distinctive early culture. The result in column 2 are remarkable—numerous significant mean differences despite a much smaller sample and many differences of sufficient size to dwarf those in Table 2 as well as those reported in the literature. Also surprising is the ideological orientation of the online discussion instances, which, contrary to Norris's cultural change hypothesis, are not socially liberal but thoroughly conservative—more like Hill and Hughes'

newsgroup postings. Among the young, online discussion instances are disproportionately from people who are more Republican, conservative, racist, traditionalist, and inegalitarian than are offline discussion instances. (This is with a one-sided p-value, which might be plausible given the consistency of the pattern observed. With two-sided p-values and a .05 significance level, online discussion instances are disproportionately from people who are more Republican, racist, and inegalitarian.)

Norris's socializing mechanism cannot be at work here because it should yield people who are more socially liberal, which raises the possibility that the differences observed in column 2 are not due to cultural change. Perhaps the Internet is not making this younger generation more conservative, but rather is drawing more young conservatives. If the Internet is not creating more conservatives, then the younger generation as a whole should not be significantly more conservative than those older than 32 years of age, other factors equal. A comparison (not shown) of mean differences in the political values of younger (<=32) versus older political discussants indicates the younger generation as a whole is more liberal, rather than more conservative. The younger generation is more egalitarian (bootstrapped, two-sided p=.05), less traditionalist (p<.001), less racist (p=.26), more liberal (p<.01), and more Democratic (p=.88). This implies, other factors equal, that the Internet is attracting rather than creating more young conservatives, and the cultural change hypothesis is not supported. Of course, other factors may not be equal. For instance, social conditions may be making the younger generation more liberal as a whole, disguising the Internet's creation of young conservatives. A stronger test of the cultural change hypothesis would be desirable in future research.

Polarization

The tables do not show mean difference in extremity, but there is little to show. For online vs. offline political discussions (Table 2, column 3), only one extremity difference proves significant—ideology with an extremity mean difference of .26 (bootstrapped p=.05, one-sided). That is, on average the ideology of online discussants is .26 of a scale point farther from their ideology mean than is the ideology of offline discussants. This is consistent with the polarization hypothesis, but the difference is quite small—the S.D. of the variable is eight times as large as the difference. Once the frequency of online and offline discussion are taken into account (Table 3), the difference in ideological extremity disappears. In Table 3, the only significant extremity mean differences are for: a) political interest in the first column, with a mean difference of .14 (S.D. of the variable is .82) and b) internal efficacy in the age<=32 column, with a mean difference of .78 (S.D. of the variable is 3.38). Because the amount of polarization should increase with the frequency of discussion, the failure to find significant extremity differences in political values and racial attitudes when discussion frequency is taken into account (Table 3) weighs strongly against the polarization hypothesis.

Robustness of the Findings

This section discusses whether key findings in this paper are robust to error and bias in reported frequency of discussion. The analyses discussed in this section focus on the average frequency of discussion, because a continuous measure of this frequency is available while it is not available for the average frequency of *online* discussion. Nevertheless, the analyses here prove reassuring as well about the online discussion measure. Findings prove highly robust in a variety of tests.

One test is whether the findings might be different if average frequency of discussion were derived not from the question specifically measuring this frequency but instead inferred from the amount of time elapsed since the last recalled political discussion. Because of the specificity of this elapsed time question, some might argue it is the more reliable indicator of discussion frequency. For reasons cited earlier, this author believes this alternative measure will contain more error. The key analyses in Table 3 were re-done substituting the measure based on elapsed time for the average frequency measure. The only substantive difference between Table 3, column 1 and the new analysis is that the mean differences for political interest are now somewhat less significant, with $p<.05$ (all p-values one-sided) rather than $p<.01$. This suggests the new measure of frequency may contain more error. The signs of all mean differences remain the same, except for racism. As for Table 3, column 2, which compares online and offline discussion below the age of 32, the new analysis does not show a single mean difference significant at the .05 level. It shows weak trends toward significance for the five significant terms in column 2 ($p=.17$ on average), with all mean differences in the same direction as column 2. Again, this is consistent with greater error in the alternative measure of average discussion frequency. These alternative analyses do not suggest that the findings of the original analyses are incorrect, only that the alternative measure has more error.

Another concern is that random error in reported frequency might somehow lead to faulty conclusions. Random error, however, may do little more than decrease the statistical power of the analysis. There is sufficient statistical power in the key Table 3, column 1 analyses—otherwise there would not be five significant mean differences in

column 2, a comparable analysis with a much smaller number of observations. Nevertheless, to test whether random error makes a difference, the analysis in Table 3, column 1 was repeated, but with random error added to the average frequency weights. The errors were set to normally distributed with two-thirds of the errors covering 50% of the size of the original frequency weight (though never less than one). That is, a frequency of 8 with a set percentage error of 50% has a two-thirds chance of receiving an error within plus or minus two (50% of 8 is 4). A frequency of 20 would have an error with a two-thirds chance of falling within plus or minus 5. This error structure corresponds to the intuition that there will be more error in large than in small frequencies. The re-analysis of Table 3, column 1 with this substantial added error found no substantive differences from the original analysis. The mean differences do not change signs, political interest remains significant at the .01 level, and no other coefficient becomes significant at the .05 level.

Social desirability bias in reported frequency of discussion might be a greater threat or perhaps not. Bias is most likely to affect results if it is more prevalent among people with certain value and attitude orientations than others, something that does not seem likely. Robustness to bias was tested by subtracting a value from discussion frequency. The amount of the value was 50% of the existing discussion frequency value (with a minimum adjustment of 1). Thus, a monthly discussion frequency of 10 was adjusted to 5, and a frequency of 20 was adjusted to 10. This variable adjustment coincides with the intuition that people will exaggerate their discussion frequency by a fixed percentage and not an absolute amount. The re-analysis of Table 3, column 1 with this fixed percentage change found little substantive difference from the original analysis.

The mean differences do not change signs, political interest remains significant at the .01 level, and only one other coefficient becomes significant at the .05 level. The exception is internal efficacy, which becomes significant (p=.04). A test was also done in which 50% of discussion frequency was added, and no substantive differences were found.

SUMMARY AND DISCUSSION

Respondents in this study discuss politics online at a low but not negligible rate—9.8% of all discussion (Muhlberger, 2002). Even low rates of political discussion may serve an important role in signaling the public regarding which policies are in their interests (Lupia & McCubbins, 1998). Nevertheless, for the Internet to have substantial political effects, these effects would have to be quite large given the low overall level of Internet political discussion. The Internet, however, will most likely constitute a much larger percentage of all political discussion in the future. If so, whatever political effects the Internet will have at that time could matter greatly. Any effects of the Internet today could be a portend of things to come.

This paper comes to a number of key findings: Taking into account frequency of an important form of political activity, political discussion, this paper finds no evidence of the mobilization hypothesis (Table 3 Column 1). That is, liberals do not discuss politics more online than offline, relative to conservatives. Also, no evidence is found for the Sunstein (2001) thesis of polarization of political views online—political attitudes and values are no more extreme online than offline. This echoes research showing online political discussants prefer exposure to diverse views on the Internet (Stromer-Galley, 2002). The reinforcement hypothesis—that the Internet will further stimulate political activity only among those already inclined to act—also proves incorrect. Internet

political discussion more equitably represents the less educated and women than offline discussion, though only to a small extent (Table 1). On the other hand, it overrepresents the young and non-homeowners, but these are groups that, at least in other political activity, tend to be underrepresented. The real importance of mobilizing different demographic groups, however, is that doing so might impact the values and attitudes reflected in political activity. This paper finds no such effect for the population as a whole. On the whole, then, the Internet does not appear to be stoking a transformation of politics but instead seems to be better described as resulting in "politics as usual"—the normalization hypothesis.

This is the correct conclusion looking at how online discussion represents the political values of the public as a whole. Looking more narrowly at the young, however, significant and substantial differences are found in the expression of political values online (Table 3 Column 2). Contrary to the cultural change hypothesis, however, it is found that online discussion represents conservative young people more than offline discussion. This finding suggests that the Internet might serve as a niche for people with unusual views for their demographic group, as discussed below.

This paper replicates results of prior work showing that Internet users and activists are more socially liberal than non-users and Internet non-activists. In prior work, this has been taken as evidence of the mobilization hypothesis that the Internet will mobilize more socially liberal people to political participation than does offline media. This hypothesis suggests that online political activity will be more from liberal participants than is offline activity. Prior work assumes that because online activists are more liberal than non-activists, then more online political activity must be from liberals

than conservatives. This inference, however, depends on the assumption that the amount

of political activity by liberals and conservatives is the same. This paper takes an

important step beyond prior research by controlling for the frequency of an important

form of political activity—political discussion. Taking discussion frequency into

account, comparisons show no significant overall mean differences in the political values

or attitudes of those discussing (Table 3, column 1). The values and attitudes considered

here contain a broader array than any previous research.

If these results prove replicable, previous research may have come to faulty

conclusions regarding the impact of the Internet on which political attitudes and values

will be reflected in online political activity. It comes to these faulty conclusions because

it does not take into account the frequency of political activity. If mobilization, cultural

change, and polarization are to imply important political effects of the Internet, their

impact should be discernible when the amount of political activity is taken into account.

In terms of the focus of this paper, these hypotheses should prove correct when amount of

political discussion is taken into account, not simply in comparing online and offline

activists or discussants. Mobilizing new participators does not matter for online political

discussion, if mainstream discussants overwhelm the web public sphere. If the

polarization hypothesis is correct with respect to political values and attitudes, these

should be more extreme the more people discuss politics online, but they are not. Only

the normalization hypothesis seems supported by findings here regarding the effect of the

Internet on the expression of values and attitudes in the political discussion of the

population as a whole.

This paper does not, however, end with null results. The findings indicate, instead, that prior work has posed theses that may be too broad in scope—namely, hypotheses regarding how the Internet affects expression of political attitudes and values by the population as a whole. More focused hypotheses may yet show a special role for the Internet. The cultural change hypothesis here provides such focus—it concerns differences between young people on and offline (age<=32). Findings show online discussion much more frequently involves conservative young people than does offline discussion (Table 3, column 2). This may be due to the Internet attracting more young conservatives rather than creating more conservatives, because the younger generation as a whole appears to be more liberal than the older generation. Thus, the findings do not support the cultural change hypothesis, albeit a more rigorous test of this hypothesis is needed. They do suggest, however, an "online niche hypothesis"—that the Internet may serve as a discussion niche for people with views unusual for their social position. A future paper could explore the effects of other demographic divisions on the political values represented by online discussion.

As with any research, the conclusions here need to be tested in future studies. The fact that findings here replicate results from previous nationwide surveys suggests that a nationwide survey would yield similar conclusions. Nevertheless, the conclusions would ideally be tested in a study of nationwide scope rather than just in a specific city. Additional types of political activities should be measured, and behavioral measures should supplement survey measures. Also, a more systematic content analysis of a broad array of Internet discussion sites would be a useful check on the data here. Finally, the findings here should not be taken as a *fait accompli*. The political ramifications of the

Internet depend on what people and organizations do with it. The findings suggest that if the Internet is to have a real impact on politics in the United States, government, foundations, and political organizations will have to make a concerted effort to create new kinds of Internet political contexts and to mobilize people into these contexts. Online democratic deliberation, an issue of great interest to this author, may be one such effort.

BIBLIOGRAPHY

Anderson, L. R., & Holt, C. A. (1997). Information cascades in the laboratory. *American Economic Review, 87*(5), 847-862.

Bimber, B. (2000). The study of information technology and civic engagement. *Political Communication, 17*, 329-333.

Bonchek, M. S. (1995). *Grassroots in cyberspace: Using computer networks to facilitate political participation.* Paper presented at the Midwest Political Science Association, 53rd Annual Meeting, Chicago, IL.

Campbell, A., Converse, P. E., Miller, W. E., & Stokes, D. E. (1960). *The american voter*: John Wiley.

Converse, P. E. (1964). The nature of belief systems in mass publics. In D. E. Apter (Ed.), *Ideology and Discontent* (pp. 206-261): Free Press.

Davis, R., & Owen, D. M. (1998). *New media and american politics*. New York: Oxford University Press.

Efron, B., & Tibshirani, R. J. (1993). *An introduction to the bootstrap*. New York: Chapman & Hall.

Eliasoph, N. (1998). Avoiding politics: How americans produce apathy in everyday life. Cambridge, England ; New York ; Melbourne: Cambridge University Press.

Feldman, S. (1983). *Report on values in the 1983 pilot study*. Ann Arbor, MI: NES (National Election Suvey) Board of Overseers 1984 Planning Committee.

Feldman, S. (1988). Structure and consistency in public opinion: The role of core beliefs and values. *American Journal of Political Science, 32*(2), 416-440.

Gilens, M. (1995). Racial attitudes and opposition to welfare. *The Journal of Politics, 57*(4), 994-1014.

Habermas, J. (1989). *The structural transformation of the public sphere : An inquiry into a category of bourgeois society* (T. Burger & F. Lawrence, Trans.): Cambridge, MA : MIT Press.

Hargittai, E. (2002). Second-level digital divide in internet use: Mapping differences in people's online skills. *First Monday, 7*(4).

Hill, K. A., & Hughes, J. E. (1998). *Cyberpolitics: Citizen activism in the age of the Internet*. Lanham, MD: Rowman & Littlefield.

Hurwitz, J., & Peffley, M. (1987). How are foreign policy attitudes structured? A hierarchical model. *The American Political Science Review, 81*(4), 1099-1120.

Inglehart, R. (1990). *Culture shift in advanced industrial society*. Princeton, N.J.: Princeton University Press.

Katz, J. E., Rice, R. E., & Aspden, P. (2001). The Internet, 1995-2000: Access, civic involvement, and social interaction. *American Behavioral Scientist, 45*(3), 405-419.

Kirschner, B. (1994). PEN Lessons: An interview with Ken Phillips. *Public management*(12), 13.

Lupia, A., & McCubbins, M. D. (1998). *The democratic dilemma: Can citizens learn what they need to know?* Cambridge, U.K.; New York: Cambridge University Press.

Margolis, M., & Resnick, D. (2000). *Politics as usual: The cyberspace "revolution"*. Thousand Oaks: Sage Publications.

McCann, J. A. (1997). Electoral choices and core value change: The 1992 presidential campaign. *American Journal of Political Science, 41*(2), 564-583.

McConnaughey, J. W., Lader, W., Chin, R., & Everette, D. (2002). *Falling through the net II: New data on the digital divide*. Washington, D.C.: National Telecommunications and Information Administration.

Muhlberger, P. (2002). *Access, skill, and motivation in online political discussion: The democratic digital divide.* Paper presented at the Prospects for Electronic Democracy Conference, Pittsburgh, PA. Available from: http://communityconnections.heinz.cmu.edu/papers

Myers, D. G., & Bishop, G. D. (1971). Enhancement of dominant attitudes in group discussion. *Journal of Personality & Social Psychology, Vol. 20*(3), 386-391.

Norris, P. (2001). *Digital Divide: Civic engagement, information poverty, and the internet worldwide*. Cambridge; New York: Cambridge University Press.

Rainie, L., & Packel, D. (2001). *More online, doing more*. Washington, D.C.: The Pew Internet and American Life Project.

Rasinski, K. A. (1987). What's fair is fair--or is it? Value differences underlying public views about social justice. *Journal of Personality & Social Psychology, 53*(1), 201-211.

Rheingold, H. (2000). *The virtual community: Homesteading on the electronic frontier* (Rev. , 1st MIT Press ed.). Cambridge, Mass.: MIT Press.

Rokeach, M., & Ball-Rokeach, S. J. (1989). Stability and change in American value priorities, 1968-1981. *American Psychologist, 44*(5), 775-784.

Sniderman, P. M. (1993). The new look in public opinion research. In A. W. Finifter (Ed.), *Political science: The state of the discipline II* (pp. 219-245). Washington, D.C.: American Political Science Association.

Spears, R., Lea, M., & Lee, S. (1990). De-individuation and group polarization in computer-mediated communication. *British Journal of Social Psychology, 29*(2), 121-134.

Steenbergen, M. R. (1995). *Compassion and american public opinion: An analysis of the nes humanitarianism scale*: Report to the Board of Overseers of the National Election Studies.

Stromer-Galley, J. (2002). *The diversity of political conversation online: User's perspectives.* Paper presented at the Euricom Colloquium, Nijmegen, The Netherlands.

Sunstein, C. R. (2001). *Republic.com*. Princeton, N.J.: Princeton University Press.

Verplanken, B., Hazenberg, P. T., & Palenewen, G. R. (1992). Need for cognition and external information search effort. *Journal of Research in Personality, 26*(2), 128-136.

Victory, N. J., & Cooper, K. B. (2002). *A nation online: How americans are expanding their use of the internet*. Washington, D.C.: U.S. Department of Commerce.

Table 1: Mean Differences in Demographic Characteristics For Online and Offline Discussants

and Discussion Instances

Variable	Online Political Discussants Vs. Offline Discussants	Online Political Discussion Instances Vs. Offline Discussion Instances
	Mean Difference (Mean Dif/Variable S.D., p-value)	Mean Difference (Mean Dif/Variable S.D., p-value)
Female (Dichotomous)	.04 (.07, .28)	.03 (.06, .34)
Education (Grades Completd)	.36† (.15, .08)	-.42† (-.17, .06)
Age (Years)	-9.55*** (-.54, <.001)	-6.87*** (-.39, <.001)
African-American (Dichot.)	-.02 (-.07, .30)	-.01 (-.03, .59)
Home Owner (Dichotomous)	-.17*** (-.39, <.001)	-.17** (-.37, .01)
N	On=78; Off=394	On=333; Off=3,241

Note. N varies slightly by variable because of missing data. All p-values are bias-corrected

bootstrapped, with resampling N=3000. Discussion instances weight the data for frequency of

discussion.

***p<=.001; **p<=.01; †p<.10 All p-values are one-sided due to directional hypotheses.

Bootstrap resampling was correctly conducted on individuals, not discussion instances.

Table 2: Mean Differences in Political Values and Attitudes for Various Online and Offline

Population Groups

Variable	Internet Users Vs. Internet Non-Users	Internet Activists Vs. Internet Non-Activists	Online Political Discussants Vs. Offline Discussants
	Mean Difference (Mean Dif/Variable S.D., p-value)	Mean Difference (Mean Dif/Variable S.D., p-value)	Mean Difference (Mean Dif/Variable S.D., p-value)
Egalitarianism	.13 (.05, .32)	.74** (.28, <.01)	.85** (.32, <.01)
Econ. Individualism	-.20 (-.10, .14)	-.30† (-.14, .09)	-.38† (-.18, .08)
Traditionalism	-.58** (-.21, .01)	-.68** (-.24, .01)	-.76* (-.28, .02)
Humanitarianism	-.10 (-.05, .31)	.17 (.08, .21)	.16 (.08, .24)
Racism	-.23 (-.07, .24)	-.90** (-.28, <.01)	-.95** (-.30, <.01)
Ideology (Liberal)	.18 (.08, .16)	.36† (.17, .08)	.45† (.21, .07)
Party ID (Democrat)	-.54** (-.24, <.01)	.02 (.01, .50)	.16 (.07, .16)
Political Interest	-.10† (-.12, .08)	.18** (.22, .01)	.04 (.05, .33)
Internal Pol Efficacy	1.58*** (.47, <.001)	1.18*** (.35, .001)	.70* (.21, .04)
Externl Pol Efficacy	.21 (.06, .29)	.25 (.08, .23)	.38 (.12, .15)
N	Users=357; Non=167	Actv=115; Non=409	On=78; Off=394

Note. N varies slightly by variable because of missing data. All p-values are bootstrapped, with

resampling N=3000.

***p<=.001; **p<=.01; *p<=.05; †p<.10 All p-values are one-sided due to directional

hypotheses.

Table 3: Mean Differences in Political Values and Attitudes for Online and Offline Discussion

Instances

Variable	Online Vs. Offline Political Discussion Instances	Online Vs. Offline Political Discussion Instances for Age<=32
	Mean Difference (Mean Dif/Variable S.D., p-value)	Mean Difference (Mean Dif/Variable S.D., p-value)
Egalitarianism	.45 (.17, .14)	-1.21* (-.46, .02)
Econ. Individualism	-.16 (-.07, .23)	-.28 (-.13, .28)
Traditionalism	-.20 (-.07, .34)	1.59* (.59, .03)
Humanitarianism	-.16 (-.08, .31)	-.54 (-.27, .10)
Racism	.20 (.06, .32)	1.81* (.56, .01)
Ideology (Liberal)	-.18 (-.08, .33)	-1.48* (-.69, .05)
Party ID (Democrat)	-.43 (-.19, .14)	-1.34** (-.60, <.01)
Political Interest	-.26** (-.32,< .01)	-.31† (-.38, .07)
Internal Political Efficacy	-.84† (-.25, .05)	.21 (.06, .41)
External Political Efficacy	.74 (.23, .09)	-.59 (-.18, .16)
N per Month	On=333; Off=3,360	On=106; Off=898

Note. N varies slightly by variable because of missing data. N is based on monthly discussion

frequency. All p-values are bias-corrected bootstrapped, with resampling N=3000.

***p<=.001; **p<=.01; *p<=.05; †p<.10 All p-values are one-sided due to directional

hypotheses. Bootstrap resampling was correctly conducted on individuals, not discussion

instances.