The Role of Online Deliberation on Citizens' Attitudes

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Abstract—In this paper, an experiment was conducted to assess the impact of online deliberation on citizens' attitudes. Specifically, this research compared pre and post deliberation opinions of participants who deliberated online via an asynchronous platform regarding the issue of political opinion polls. Results indicate that online deliberation had a positive effect on citizens' attitudes since it was found that following deliberation participants changed their views regarding public opinion polls. Specifically, online deliberation improved discussants perceptions regarding the reliability of polls, while suppressing their negative views about the misuse of polls by media, polling organizations and politicians.

Keywords—Online deliberation, attitudes change, opinion polls, e-democracy.

I. INTRODUCTION

PUBLIC deliberation has been regarded as an integral part of democracy [1], [2]. According to [1] democratic decisions should be based on "informed, enlightened, and authentic" opinions of citizens which can be achieved through political deliberation. However, several theorists posit that it is almost impossible to manage large-scale deliberations due to the size and unruliness of the public [3] as well as the cost of organizing such events. These impracticalities of an "ideal public deliberation" turned researchers' attention to other more innovative solutions for deliberative democracy such as "mini-publics" (e.g., consensus conferences, citizen juries, planning cells, deliberative polls) [4]. These mini-publics are comprised of ordinary citizens who are characterized by some kind of representativeness [4] and engage participants in "symmetrical, face-to-face, and equal deliberation" [3]. Besides the face-to-face forms of mini-publics, online deliberative events have been proposed by a number of researchers as another solution to the deficiencies of mass-public deliberation [5]. Indeed, a new stream of research suggests that the Internet is a viable channel through which large-scale deliberations can be made practical [6].

There exist conflicting viewpoints regarding the impact of new technologies on democracy. On the one hand, there are the "cyberoptimistics" who argue that the Internet is an effective platform for deliberation [7] that encourages different points of views [8] to be heard from people who were

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not likely in the past to participate in political discussions and were marginalized [9] or indifferent to politics. Moreover, the anonymity on the Internet along with the absence of physical presence improves the quality of discussion since participants feel free to express their sincere opinions on an equal basis with other online discussants [10]. Hence, a more "enlightened exchange of ideas" is encouraged [11]. It is also argued that new technologies can foster debates which are based on rational argumentation [12]. This argumentative aspect of online discussions could be attributed to their asynchronous and written format [10].

On the other side, the "cyberskeptics" highlight a number of obstacles regarding the deliberative potential and maturity of online discussions. For example, several scholars point out that the Internet tends to increase inequalities in representation [13]. The digital divide threatens the quality of online deliberations since most of the times these discussions are dominated by like-minded individuals [14]. This compatibility between online discussants leads to a polarization of views [10] that sabotage the basic requirement of deliberation which is the exchange of different viewpoints [12]. In addition, the sincerity of participants is not strongly secured as people on the Internet have the choice to conceal their identities using nicknames [10]. Another important caveat in online discussions is the predominance of "flaming" and the use of offensive and hostile language [13]. However, as Wright [15] notes researchers should not worry whether the Internet has a "revolutionary" or a "normalization" impact on deliberative democracy but rather emphasize on what are the effects of Internet. He further points out that experimental designs can provide fruitful insights regarding the impact of online deliberations.

Until now, most of the studies on online deliberation have focused on analyzing the content and quality of deliberations that take place among usenet newsgroups and discussion forums [11], [14], [16] whereas few studies have examined the impact of online deliberation on participants using experimental designs. Towards this end, the purpose of the present study is to examine the impact of online deliberation on citizens' attitudes.

II. EFFECTS OF ONLINE DELIBERATION

The effects of offline deliberation are well established in the literature. According to [17] offline deliberation helps citizens become more informed about the issue of discussion. Moreover, it is argued that deliberation has a positive impact on citizens' attitudes [2] since citizens often "revise preferences in light of discussion, new information, and claims made by fellow participants" [18]. The deliberation's effect on attitude change is particularly evident in experimental designs

such as deliberative polls [19].

Similar positive effects on citizens' attitudes have been reported by researchers in the context of online deliberations [20]. For example, the online deliberative poll conducted by [21] was related to a number of American policy issues (i.e., military intervention, trade and economic relations with other countries, and global environment) and entailed real-time small-group discussions via voice-based software. Results showed that post-deliberation opinions of participants altered significantly in six out of nine policy statements. Specifically, participants become more supportive of (1) spending on foreign aid, (2) democratization, (3) global development, (4) human rights protection, (5) environmental protection, and (6) fair trade. Hence, results of the first online deliberative poll were quite encouraging regarding the impact of online deliberation on citizens' attitudes [19].

The study [22] report the results of an online deliberation experiment which examined the effects of computer-mediated deliberation on citizens' views about energy issues in Finland. The experiment was a live-event based on small-group discussions that took place through webcams. Findings indicate that online participants changed attitudes in six out of nine statements about energy issues. For example, participants became less supportive about the creation of another nuclear plant and the use of coal and peat in energy production in Finland. On the other hand, after the online deliberation discussants held more positive attitudes regarding the need for improved energy saving and policy.

Price [23] investigated the effects of deliberation that takes place in computer-mediated environments. Toward this end a random sample of American citizens was surveyed prior to and after real-time electronic discussions. Discussion topics focused around the 2000 US presidential elections and health care reform issues. Although, in most of the issues discussed, participants did not change significantly their attitudes, on the issues where significant changes were observed citizens moved toward more rational views and agreed with the opinions promoted by policy elites.

The aforementioned positive effects of online deliberation on citizens' attitudes should be interpreted with care since the outcomes of deliberation are highly context specific depending on the issue under discussion [24] and the way online discussions take place. Indicative of these constraints is the study of Min [25] which reported the findings of an online deliberation experiment around gun-related issues. Participants were students who deliberated under the supervision of a moderator through a chat room and after reading written material. Although, online deliberation increased significantly the knowledge and efficacy of participants, no significant changes were found regarding their opinions on the discussion issues after the deliberative event.

Based on the preceding analysis, it can be argued that there is a need for further exploitation of the impact of online deliberation on the attitudes of citizens.

III. RESEARCH QUESTION

We expect that computer-mediated deliberation has an impact on citizens' attitudes. Thus, the present study sought to answer the following research question:

RQ: Whether online deliberation can produce significant positive changes on participants' attitudes about the issue under discussion.

IV. METHOD

A. Procedure

A real experiment was conducted in order to test the effects of online deliberation on citizens' attitudes. The online deliberation took place from December 30, 2014 to February 11, 2015. Participants of the experiment were students of a Technological Education Institute in a Northwestern city of Greece. A total of 149 students, registered for the Public Opinion Polls course, agreed to participate in the project. It should be noted that participants we told in advance that they would be rewarded with extra credit for the course.

The experiment was conducted via the Wordpress software. Using the Wordpress tool a website was created specifically for the needs of the online deliberative project. Participants were required to create an account determining a username and a password. Students were instructed to set usernames using their real names and surnames. Moreover, students were asked to authenticate before accessing the deliberation materials and every time they accessed the platform.

In the beginning of the project students received an email that informed them to create an account on the website and answer a pre-deliberation questionnaire that was embedded in the platform. Afterwards participants were instructed to read the written material and watch a video that were posted on the website (Fig. 1). The written material consisted of 19 pages and contained information about the issues under deliberation organized around pro and con arguments. Moreover, the online video included the recorded speeches delivered by the three experts in an offline deliberative panel held a few months prior to the commencing of the online deliberation. The use of video helps "improving deliberative quality and making online mode more comparable with the face-to-face" [26].

Fig. 1 Snapshot of the Deliberation Platform

Then participants began to deliberate online with other participants by posting text messages about their views and comments. Note, that students could join the discussion from their home computers anytime at their own convenience. Thus, the online discussion was asynchronous in nature. Moreover, another distinguishing feature of our project was the fact that discussion was not organized in smaller group

discussions. Discussions were supervised by a moderator whose responsibility was to erase duplicate messages and respond to technical questions of participants. This way we wanted to minimize the influence of moderator on the outcome of deliberation.

Students were also given the opportunity to formulate questions they would like to be answered by the three experts. These questions were relayed to our experts and their answers were posted on the deliberation website. Then students received an email which instructed them to read the answers of experts and then complete the post-deliberation questionnaire.

B. Deliberation Topic and Experts

The subject of the face-to-face deliberative poll was "Political Public Opinion Polls". The subject matter for discussion included five main areas (1) reliability-accuracy of opinion polls, (2) data manipulation in public opinion polls by media organizations, pollsters and politicians, (3) use of public opinion polls by politicians in decision making process, (4) impact of polls on political participation, and (5) impact of polls on voting behavior. The deliberation topic was chosen bearing in mind that the participants were students.

The three experts were also carefully chosen and were comprised of a well-known politician, a well reputed expert and pollster, and renowned journalist.

C. Questionnaire and Measurement of Opinions

The pre as well as the post deliberation questionnaire included 31 questions that measure the attitudes of participants around the five main issues about polls. Specifically, to measure participants' attitudes regarding the reliability-accuracy the first seven items (see Table I) were used (e.g., *polls always produce reliable results; a sample of 1000-1500 people can accurately represent the universe of potential voters*). Opinions of respondents regarding the extent to which data in public opinion polls are manipulated by media organizations, pollsters and politicians were measured using seven items. Example of items are: *Media organizations manipulate and publish selectively the results of opinion polls in order to exert influence on public opinion* and *when the clients of opinion polls are either parties or politicians then the chances of reporting results which favor them are increased*. Participants' attitudes regarding the use of public opinion polls by politicians in policy making process were measured through seven items such as: *politicians need surveys to pursue the right policies* and *politicians use polls to specify the top issues which concern the electorate and set their political agendas*. Perceived impact of polls on political participation was measured using five items (e.g., *through polls citizens can make their voices heard and participate in the policy making process* and *polls create a more democratic society*). Finally, perceived impact of polls on voting behavior of citizens were assessed through five items such as: *polls affect undecided voters and help them vote* and *polls may lead people to abstain from voting since they believe that their vote will not make a difference to the election outcome*. Responses

to all questions were elicited through five-item likert scales ranging from 1: Strongly Disagree to 5: Strongly Agree.

V. RESULTS

In order to examine the effects of online deliberation on citizens' opinions regarding polls we checked the differences between pre to post deliberation attitudes of students using independent t-tests. Results of the tests are presented in Table I.

The results in Table I showed that the online deliberation affected many attitudes of students towards polls. 10 out of 31 attitude statements exhibited statistical significant changes.

Based on the results, respondents after the deliberation were significantly ($p<0.05$) more likely to agree than before (higher mean value after the deliberation) that (1) "a sample of 1000-1500 people can accurately represent the universe of potential voters" (t=-2.905, sig=0.004), (2) "media organizations most of the times fairly present and publish the results of opinion polls" (t=-2.518, sig=0.012),(3) "politicians use polls as a source of accurate information about the expectations and preferences of the electorate" (t=-2.634, sig=0.009), and (4) "opinion polls facilitate a better communication between citizens and politicians (t=-2.314, sig=0.021).

In addition, respondents after the deliberation were significantly ($p<0.05$) more likely to disagree than before (lower mean values) that (1) "media organizations manipulate and publish selectively the results of opinion polls in order to satisfy the interests of their (sponsors)" (t=2.029, sig=0.043), (2) "media organizations manipulate and publish selectively the results of opinion polls in order to exert influence on public opinion" (t=3.186, sig=0.002), (3) "many polling organizations selectively report opinion polls results in order to influence public opinion in a certain direction" (t=2.037, sig=0.043), (4) "when the clients of opinion polls are either parties or politicians then the chances of reporting results which favor them are increased" (t=2.372, sig=0.008), (5) "results of opinion polls are manipulated by the political offices of parties or candidates in order to influence public opinion" (t=2.421, sig=0.016), and (6) politicians need surveys to pursue the right policies (t=2.450, sig=0.015).

Hence, it can be argued that there was a deliberative positive effect on participants. Online deliberation induced discussants to become more in favor about the accuracy and reliability of polls as it increased the low mean scores of attitudes found prior to the online experiment. Moreover, students after the deliberation became more supportive of the proper use of polls by media and politicians since their attitudes about the fair representation of polls by media and the use of polls by politicians as an information source about citizens' expectations increased. Another positive effect was the fact the online deliberation made participants more supportive of the polls' impact on citizens-government communication.

TABLE I
DIFFERENCES BETWEEN PRE AND POST DELIBERATION ATTITUDES

Items		Mean Scores	T-Value/Significance
Reliability-accuracy of opinion polls			
In general, the process of polling as conducted in Greece is reliable.	Pre	3.06	0.177/0.860
	Post	3.04	
Polls always produce reliable results.	Pre	2.62	0.144/0.886
	Post	2.61	
A sample of 1000-1500 people can accurately represent the universe of potential voters	Pre	2.20	-2.905/0.004*
	Post	2.52	
Polls are an accurate snapshot of public opinions at a particular point in time.	Pre	3.14	-1.317/0.189
	Post	3.28	
Answers given by respondents in polls reflect their true beliefs	Pre	2.21	-0.277/0.782
	Post	2.24	
Respondents will give their answers based on what they believe is the most socially acceptable/favorable or the most popular, rather than their true opinions.	Pre	3.25	0.339/0.735
	Post	3.22	
Respondent have the particular knowledge required to answer the questions of opinion polls	Pre	2.38	-1.000/0.318
	Post	2.48	
Data manipulation in public opinion polls by media organizations, pollsters and politicians			
Media organizations most of the times fairly present and publish the results of opinion polls	Pre	2.63	-2.518/0.012*
	Post	2.87	
Media organizations manipulate and publish selectively the results of opinion polls in order to satisfy the interests of their (sponsors)	Pre	3.86	2.029/0.043*
	Post	3.69	
Media organizations manipulate and publish selectively the results of opinion polls in order to exert influence on public opinion.	Pre	3.77	3.186/0.002*
	Post	3.48	
Many polling organizations selectively report opinion polls results in order to influence public opinion in a certain direction.	Pre	3.81	2.037/0.043*
	Post	3.63	
When the clients of opinion polls are either parties or politicians, then the chances of reporting results which favor them are increased.	Pre	3.94	2.372/0.018*
	Post	3.73	
Results of opinion polls are manipulated by the political offices of parties or candidates in order to influence public opinion.	Pre	3.56	2.421/0.016*
	Post	3.33	
Polls reported often conceal the real opinion of respondents	Pre	3.14	1.526/0.128
	Post	3.00	
Use of public opinion polls by politicians in decision making process			
Politicians need surveys to pursue the right policies	Pre	3.65	2.450/0.015*
	Post	3.43	
Politicians and political parties use public opinion polls to assist them to the development of their election campaign strategies	Pre	3.79	0.537/0.592
	Post	3.74	
Election campaigns are dominated by public opinion polls	Pre	3.60	-1.743/0.082
	Post	3.76	
Politicians use polls to specify the top issues which concern the electorate and set their political agendas.	Pre	3.55	1.752/0.081
	Post	3.38	
Politicians use polls to persuade the public for or against a certain political position.	Pre	3.90	1.622/0.106
	Post	3.77	
Politicians use polls to make the right political decisions.	Pre	2.59	-0.523/0.601
	Post	2.64	
Politicians use polls as a source of accurate information about the expectations and preferences of the electorate.	Pre	3.03	-2.634/0.009*
	Post	3.30	
Impact of polls on political participation			
Polls provide a way for citizens to stay informed about the top political issues and the opinions of the public towards them	Pre	3.51	0.152/0.879
	Post	3.50	
Opinion polls facilitate a better communication between citizens and politicians	Pre	3.10	-2.314/0.021*
	Post	3.32	
Opinion polls serve as a communication channel between citizens and government and an indirect form of public participation	Pre	3.26	-0.887/0.376
	Post	3.36	
Polls create a more democratic society	Pre	3.00	-1.197/0.232
	Post	3.13	
Through polls citizens can make their voices heard and participate in the policy making process	Pre	3.00	-1.424/0.156
	Post	3.16	
Impact of polls on voting behavior			
Results of election polls may affect the voting behavior of the public.	Pre	3.79	-1.003/0.317
	Post	3.88	
Polls affect undecided voters and help them vote.	Pre	3.60	0.488/0.626
	Post	3.55	
Polls may lead people to not vote for the party or candidate that appears to be losing the elections.	Pre	3.45	0.253/0.800
	Post	3.42	
Polls may lead people to not vote for the party or candidate that appears to be winning the elections	Pre	3.25	-1.303/0.194
	Post	3.39	
Polls may lead people to abstain from voting since they believe that their vote will not make a difference to the election outcome.	Pre	3.46	-0.125/0.901
	Post	3.48	

*Significant at the p<0.05 level.

Interestingly, online deliberation was able to suppress the negative views of participants about the misuse of polls by media, polling organizations and politicians. As a consequence, students after the deliberation became less skeptical to the general idea that polls are deliberatively manipulated by pollsters, media, and politicians in order to influence the public opinion. Thus, participants decreased their mistrust towards the use of polls by media and politicians.

Note, that deliberation moved towards the informed and sophisticated opinions of experts. However, no significant changes have been found after the deliberation regarding the attitudes of citizens about the impact of polls on political behavior.

VI. Conclusion

The present study examined the impact of online deliberation on citizens' attitudes regarding opinion polls. Results suggest that computer-mediated deliberation had a positive effect on participants as it induced changes in opinions. Specifically, participants held more positive views about the accuracy and reliability of polls while they decreased their negative opinions about the relationship among pollsters, media, and politicians.

Our online project differs from other online deliberation experiments. For example, we did not use small-group discussions during our deliberations. Moreover, the mode of deliberation was asynchronous while the sample used in our study was not representative since we relied on students. Another differential feature of our study is that we did not use control groups in order to compare attitudes of participants after deliberation with attitudes of respondents who did not participate in the deliberation. Future research could focus on the impact of different aspects of online deliberation on attitude change. For example, by surveying participants during different moments of virtual deliberation (i.e., after reading the written material, after online discussion, after reading experts' answers) fruitful insights could be yielded about which specific feature of deliberation causes changes in opinions. Moreover, conducting two parallel deliberations, one face-to-face and one online, can reveal whether online deliberation has similar effects compared to traditional face-to-face deliberative events.

Acknowledgment

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