**Online and Engaged: An Experiment Related to Online
News and Political Interest**

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ABSTRACT

Youth's low level of political engagement creates concerns about the health of our democratic system. This paper examines whether new media, specifically online news sources, can address low levels of political interest among youth. The paper reports the results of an experiment conducted in 2010 and 2011 where a random sample of Grant MacEwan students were exposed to a variety of online news sources. Unlike other experiments in the field, the experimental manipulation reflects the varied ways in which online news sources reach Internet users, e.g., use of traditional news organization websites, news forwarded through social networks, and use of a variety of other untraditional news sources. Interest in local politics increased significantly for youth who were exposed to the news sources (n=108) as opposed to those youth who were not exposed to these news sources (n=91). In addition, political interest increased significantly after news source use compared to prior to use (n=47). The experimental design also allowed for an examination and validation of the methodological quality of the experiment, i.e., testing effects and attrition. In sum, the results affirm the potential of online news sources to stimulate youth's interest in politics. These findings provide support for the argument that the Internet could become a tool to encourage youth to become involved in politics.

LITERATURE REVIEW

Declining Voter Turnout

Within political science and sociology, there is growing concern about youth's low levels of political engagement and what that could mean for the health of our democratic system (Delli Carpini, 2000; Livingstone et al., 2005; Lupia & Philpot, 2002; McLeod, 2000; Norris, 2000; Putnam, 2000; Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006). If the next generation has weak political interest, they will be unlikely to develop the civic and political skills required to deal with collective problems, such as climate change. If an entire segment of the population is not participating in the political process, their interests may not be adequately addressed in government policy.

In both Canada and the United States, the voter turnout rate is approximately 15-20 percentage points lower for youth than the general population (Census Bureau, 2009; Elections Canada, 2008). Youth's low levels of engagement are reflective of a broader trend of declining voter turnout among the general public (Census Bureau, 2009; Figure 1). The recent federal elections in Canada marked new lows in voter turnout in Canada. In 2008 and 2011, approximately 60% of eligible voters cast their ballots, whereas in the past (1945-1993) voter turnout varied between 70% and 75%. Voter turnout by age group is not as readily accessible in Canada. Using 2008 voter turnout data, Barnes (2010) reports an overall turnout rate of 58.8% for all eligible voters with 44.5% of those in their early twenties turning up to vote. The most dramatic drop in voter turnout among young people is among high school dropouts (Hooghe, Stolle, Maheo, & Vissers, 2010).

In the United States, voter turnout is still relatively low, but the situation has improved. The 2008 American presidential election affirms a turnaround in a trend of decreasing engagement. The trend reversal was first observed in 2004 and the 2008 election reinforced this trend. The reason for this turnaround in the United States is unclear. In terms of the 2008 elections, some attribute the change to President Obama's charisma, others to his grassroots activism, and others point to the role of technology in mobilizing youth to get to the polls (Vacari, 2010; Bowden, 2010). Other explanations include the history-making election, i.e., the possibility of electing the country's first African American president. Since the turnaround was

first observed in 2004, it is possible that the cause is not related to President Obama, but instead to a changing political culture in the United States.

Youth were the only group to significantly increase their voter turnout in the 2008 American presidential election, compared to the 2004 American presidential election (Census Bureau, 2009). As such, the explanation of their changing behavior may relate to President Obama and his campaign. Despite this improved turnout, youth are still significantly less likely to vote (15 percentage points) than other adults (Census Bureau, 2009).

Media and Political Engagement

The media has been a prime target for blame in citizen's low levels of civic and political engagement (Putnam, 2000). Youth and the public, more generally, are believed to be watching television, playing video games, updating their status on Facebook, or watching YouTube videos, instead of participating in civic and political life. In a meta-analysis piece, I present evidence that Internet use does not lead to a decline in civic and political behavior (Boulianne, 2009). Instead I found a small positive correlation of Internet use with civic and political behavior, e.g., talking politics, donating to social or political causes, and working with community members to solve a collective problem. The problem with the studies in this field is that they rely on cross-sectional surveys, which can assess correlation not causation. In addition, it is unclear whether Internet use is causing a change in civic and political behavior or if these behaviors are motivating Internet use. The causal direction is critical to understanding whether the Internet will reinforce the engagement of a select group of citizens or whether the Internet could stimulate engagement among a broader set of citizens, addressing the trend of declining levels of political engagement (see Boulianne, 2011). In other words, can the Internet (with its diverse applications) motivate youth, who tend to be uninterested and unengaged, to get involved in civic and political life?

In a recent paper (Boulianne, 2011), I argue that the Internet is different from other news media in terms of the level of effort and attention required to use this news source, its information sharing capability, and diversity of public affairs content. All of these features combine to enable online news sources to reach and mobilize citizens who were previously uninterested and unengaged in the process. Using panel data from the American National Election Study 2008-9 panel study, I find some support for the idea that online news stimulates political interest, which in turn affects level of political talk. Rather than the Internet being merely a tool for those already interested and engaged, the Internet can expand the group of citizens who are interested and engaged in civic and political life. While these panel data make a more convincing case for causality compared to cross-sectional data, my research is left with the problem of attribution. How do I attribute the change in patterns of political interest to changing patterns of online news use, instead of Obama's charisma, his grassroots campaign, the history-making election, or the changing political culture in the United States?

Despite employing multivariate techniques, I cannot clearly attribute the change in political interest to changes in the consumption and discussion of online news. In addition, the effect sizes among online news use, political interest, and political talk are somewhat modest. Part of the problem could be measurement in that the online news measures in the ANES focuses on the number of days that citizens accessed online news stories. The focus is on frequency of news use which inadequately assesses the depth of use or content, which could be critical to shaping political interest. The measure does not distinguish between those who read a single news story each day versus those who read a wide range of topics. Also, the measure provides

little information on the nature of the content. Past research shows that public affairs content has differential effects on political interest, knowledge, and engagement compared to news related to weather, entertainment, etc. (Norris, 1996; Shah, 1998). Furthermore, the study focuses on a cross-section of the population. Older cohorts are differentially situated in the political system, compared to younger citizens. They are more informed, knowledgeable, and more engaged. Newspaper readership is more common among older people (Keown, 2007; Milan, 1995; Norris, 2000b; Pew Research Center, 2006). In addition, they are further along in the development of their political identity. Their news media use, current levels of engagement and stage of psychological development are different from youth. As such, exposure to online information may have little effect on their levels of knowledge and engagement.

Youth, Online News and Political Engagement/Interest
I recommended further research on youth, because if the Internet is going to have any large scale effects, it would be for this group who are intense users with low levels of political engagement. The sample size in the 2008 American National Election Study is not large enough to allow an analysis of youth (only), given the number of correlates that need to be accounted for to isolate the effect of news use on political interest.

Comparing younger users to other age cohorts is important for several reasons. First, younger users are among the savviest users and their age cohort has the highest penetration of the Internet (Cho, Gil de Zuniga, Rojas, & Shah, 2003; Fong, Wellman, Kew, & Wilkes, 2001; Livingstone et al., 2005; NTIA, 2002). Computer skills and Internet access should be greater among young people, compared to older cohorts. Skill differences may be expected to be less varied among youth, given that computer training was a standard component of school curriculum for this age group. This age group tends to have greater Internet access, facilitated by government initiatives around connecting schools. This unique relationship to this technology makes young adults interesting for studying the effects of this technology.

Second, young adults, particularly youth, are at a critical life stage where the effects of media may be increasingly important and influential (Arnett, 1995) and when they have newly acquired cognitive skills to turn political information into knowledge (Eveland, McLeod, & Horowitz, 1998). A third reason for paying attention to young adults is that their low levels of engagement and media use is of increasing concern and may be perceived as an threat to the continuing health of a democratic system (Delli Carpini, 2000; Livingstone et al., 2005; Lupia & Philpot, 2002; McLeod, 2000; Norris, 2000; Putnam, 2000; Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006).

Preliminary research affirms that the impact of the Internet on engagement may be different for different age groups. For example, Shah and colleagues (Shah, Kwak, & Holbert, 2001a; Shah, McLeod, & Hoon, 2001b) find that the effects of informational uses of the Internet on engagement are strongest among younger users. My research affirms such findings in the Canadian context (Boulianne, 2007) Other research also suggests that online or new media are more likely to influence youth's voting behavior, compared to older adults, compared to those without access to new media, or comparing web information to other information sources (Iyengar & Jackman, 2004; Kaid & Postelnicu, 2005; Pasek, Kenski, Romer, & Jamieson, 2006; Pew Research Center, 2000).

Howe's (2006) work suggests that part of the reason for youth's low political involvement is related to a lack of political knowledge. Several studies have focused on online news and political knowledge, but research is far from conclusive (see discussion of literature in

Tewkbury & Rittenberg, 2008). Other studies attribute youth's low political involvement to a lack of political efficacy (Kaid, McKinney, & Tedesco, 2007) and have designed experiments related to online media and political efficacy (Tedesco, 2007). However, I would argue that political interest precedes political knowledge and efficacy and thus, greater attention is required on the role of political interest in affecting these variables as well as engagement. A variety of factors may influence political engagement, such as voting, including being asked to vote, being available on election day, and the competitiveness of the election. These factors are beyond the media's influence (competitiveness of the election could be an artifact of media coverage, e.g., Alberta's provincial election 2012). Political interest is likely more malleable by the media than political engagement. Changes in political engagement can be more difficult to ascertain, because these changes occur over a longer time period than attitude change. As such, this research focuses on political interest with the assumption that political interest is an antecedent to political engagement, efficacy, and knowledge

  The only experiment that considers online news and political interest is Lupia and Philpot's (2005) study. The study is a rarity in the use of an experimental design and for its focus on political interest. The data was collected in 2000 using an online panel recruited by Knowledge Networks. The manipulation was exposure to the Web White & Blue Network -a network including several news organizations. Some respondents were also directed to specific websites, such as CNN, Fox News, and the New York Times. Respondents were exposed to one or two websites for 5 minutes each. The research design had several weaknesses, such as weak measures of political interest. Instead of assessing political interest, a scale was created that asked about whether the site inspires the participant to learn more about politics, to talk about politics, and to vote in the November election (see Lupia & Philpot, 2005 pg.1132). In addition, the exposure was for a short period of time, e.g., 5 to 10 minutes, which is unlikely to provide any substantive effects on political interest. In addition, the study did not include a manipulation check, which is critical for field experiments. As another weakness, the study relies on websites and does not consider the alternative methods through which people consume online news. For example, many people access news sources through their social networks. Finally, the manipulation is restricted to the news stories that the researchers have defined. One of the key mechanisms through which online news can stimulate political interest is by expanding the stories and sources of information available to citizens. That said, the findings provide some affirmation of the possibility that online news could influence youth's, more so than older people, level of political interest, if they evaluate the website positively (Lupia & Philpot, 2005). In sum, by increasing access to information, the Internet could be important in changing youth's currently low levels of political engagement. This unique relationship to the technology makes young adults interesting for studying the effects of this technology.

METHODS
Sample
Why study Canadian youth? If I do find a relationship between online news and political interest among Canadian youth, this finding would rule out campaign, candidate, election or culturally specific effects. If the experimental data affirm findings from the ANES panel data, e.g., a positive relationship between online news and political interest, this would support my argument about a media effect. These findings would also support my argument that the Internet could help stimulate civic and political activity among a broader base of citizens, including youth who have historically low levels of political interest and engagement. Finally, studying Canada is

important, since Canada's voter turnout is still on a decline, unlike the American voter turnout rate. As such, this research will specifically address the health of the Canadian democratic system.

I recruited first-year students at Grant MacEwan University (Edmonton, Alberta, Canada) to participate in this experiment. The choice of sample is partly based on convenience and practicality, but also based on their similarity to Canadian youth more generally. The socioeconomic background of these first-year students is probably more reflective of Canadian youth in general, because of the lower tuition costs and different admission standards at MacEwan compared to neighboring post-secondary institution. The institution is transiting away from being a community college. Community colleges are arguably more representative of the general public than top-ranked universities (Hooghe, et al. 2010).   First-year students are likely more representative of Canadian youth, in general, than their colleagues who are closer to degree completion.

The study was conducted as a pilot test in 2010, then repeated with a larger sample in 2011. I contacted the Registrar's office to obtain a list of students. This list of approximately 4200 students each year was screened to ensure students had a Canadian mailing address and to exclude students who are enrolled in English as a Second Language classes at the University. Then, I stratified the list by gender, then randomly selected participants for this study. Approximately1600 students were invited to participate in the study (800 males, 800 females; ages 18+) over the course of the two years of data collection. During each wave, students were sent a pre-notification letter by mail asking them to participate in a study about their general interests and hobbies (January 2010, 2011). They were informed that they would receive an email with the link to the survey in a few days. The wave 1 pre-notification letter included a $5 cash incentive (a subsample in 2010 received a $10 incentive, see Boulianne, Forthcoming). Wave 2 began approximately 7 weeks after wave 1 began (March 2010, 2011). At wave 2, participants were invited to an in-person meeting, which included completion of another short survey. Participants who attended the wave 2 meeting were given a $15 incentive (a subsample in 2010 received a $10 incentive, see Boulianne, Forthcoming).

Approximately 59.6% of participants (AAPOR Response Rate 1) completed the first wave. Approximately 17.5% of participants (AAPOR Response Rate 1) completed the second wave. The poor response rate at wave 2 is partially explained by scheduling issues. Approximately 30% of participants agreed to participate, but we were unable to find a meeting time that accommodated the research assistants (who were full-time undergraduate students) and the participants. Figure 2 provides more details about the number of participants allocated to each group and the number that completed the project at various phases.

My research design is unique in that I rely on a random sample of students, rather than recruit students from a particular class or from a specific discipline. Recruiting from a single discipline can be problematic for several reasons. First, a discipline-specific sample likely differs greatly from the population of youth, compared to a cross-section of university students. For example, the demographic make-up of disciplines can be highly unrepresentative, e.g., over or under-representation of women. Furthermore, political interest, the key variable under analysis, can vary greatly by discipline. For example, recruiting participants from political science classes would produce a sample biased towards politically interested youth. Additionally, recruiting from a particular class can be problematic, because the class content may produce a change in the outcome between the pretest and posttest. For example, class discussion of current events in sociology classes may produce a change between the pretest and posttest measurements that is

unrelated to the manipulation. Many experimental studies using student samples do not attend to this issue, e.g., communication or social science students are used to study patterns of online news use with little regard as to their representativeness of the student body or youth in general (e.g., D'haenens, Jankowski, & Heuvelman, 2004; Knobloch-Westerwick & Meng, 2009). Of course, imperfect response rates comprise the randomness of the sample in that participants self-selected to participate in the various waves of the project.

Design
I used the Solomon four-group experimental design (Figure 2). The design involves assigning half of participants to the control group and half of participants to the experimental group who receives the manipulation. Unlike the classic experimental design, half of the sample is assigned to receive the pretest (e.g., invited to participate in wave 1) and the other half does not receive the pretest survey. This design has clear advantages over the classical experimental design in terms of examining methodological quality, including testing effects and response bias. Participants may remember the politics-related questions from the pretest/wave 1 survey, which may affect their decision to participate in wave 2 and their responses during the posttest survey. Specifically, if politics is of little interest to them (an appropriate expectation given the literature), they may decide not to participate in the next wave, which will detrimentally affect the validity of the study. The combination of the pretest survey with the manipulation (e.g., using online news) may provide additional clues to respondents about the specific hypothesis being testing, which may influence their posttest/wave 2 responses. They may decide to affirm what they think the researcher is investigating or disconfirm it if the hypothesis is not consistent with their own ideas. In the Solomon four-group experimental design, approximately half of the participants will receive a pretest and half will not. This design will help assess if testing effects emerge.

All multi-wave projects lose participants at the various waves of the project, especially when there is a time delay in the administration of the waves. The diminishing response rate can cause concern for response bias, i.e., those who participate are different from those who do not participate. In this study, response bias is a particular concern, because of the greater effort required to participate in wave 2 compared to wave 1. As a result, the response rate diminishes. The possibility of response bias can be evaluated by comparing those who participated in wave 1 (only) to those who completed both wave 1 and wave 2. Unfortunately, the design cannot rule out response bias by comparing participants who did not complete wave 1 and those who did participate at wave 1. However, at wave 2, there is another set of "fresh" participants who are not exposed to the pretest and thus, have little basis on which to surmise the specific topic of the project. If there was a response bias effect, this effect would be observable through a comparison of "fresh" participants to participants who fully completed the project. Again, this is another advantage of the Solomon design over the classic experimental design. Response bias can be assessed at wave 2 by comparing different sets of experimental groups (and control groups) to each other in terms of level of political interest.

Pretest/Wave 1 and Posttest/Wave 2 Surveys
Participants were not told the specific purpose of the study. Respondents were informed that the survey is part of a project by researchers in the Department of Sociology. The pretest and posttest surveys contained questions about levels of political interest, general patterns of media use, as well as other questions unrelated to the experimental topic (course enrollment, mobility,

community attachment, volunteering). The pretest (wave 1) and posttest (wave 2) surveys were delivered via web survey using Survey Monkey. Web surveys reduce the costs of data collection by reducing the data entry costs related to mail surveys. A mail survey would not only be more expensive to implement, but participants may be better able to surmise the topic of the survey, e.g., politics, ahead of time and use this topic as a reason for non-participation. In contrast, a web survey presents questions screen-by-screen, which will hopefully minimize the salience of the topic. Questions about political interest and news media use were asked at the end of wave 1 survey. A mail survey would not allow the researcher to cloak the topic of primary interest, e.g., political interest, as well as a web survey would.

Manipulation
Approximately half of the respondents received the experimental manipulation and the other half did not. The experimental manipulation involved asking participants to perform a series of tasks intended to reflect how online news can influence political interest. The design of the manipulation is informed by several studies in this field, which have assessed general online news use patterns (Knobloch-Waterwick and Meng, 2009), as well as the effects of online news on political knowledge (see discussion in Tewkbury & Rittenberg, 2008), political efficacy (Tedesco, 2007), agenda-setting (Althaus & Tewksbury, 2000, 2002; de Waal & Schoenbach, 2008; Schoenbach, De Waal, & Lauf, 2005) and political interest (Lupia and Philpot, 2005).

Tedesco (2007) also used a series of tasks as an experimental manipulation. I believe that this type of manipulation offers greater validity as it reflects true and varied patterns of consumption of online news. Ideally, I would also have groups that receive only one of the specific tasks as well as groups that receive different combinations of tasks (e.g., a factorial design). However, the budget did not permit this type of design. As an improvement to Tedesco's design, I conducted the experiment in a laboratory setting, whereas his study was conducted as a field experiment. I believe that using a series of tasks as a manipulation would work better in a lab setting where the researcher has greater assurance that the manipulation was effectively delivered. Tedesco (2007) and other field experiments (Knobloch-Waterwick and Meng, 2009; Lupia & Philpot, 2005) do not include a manipulation check.

1) Respondents were asked to search for information on a political, social, or economic issue that they find to be interesting. This task reflects the value of the Internet in terms of the diversity of content, which can arguably appeal to almost all interests (Boulianne, 2011). This task allows respondents to employ both traditional news sources (e.g., *New York Times* online) and other independent news sources (e.g., Moveon.org). Previous studies focus on the use of traditional media (Althaus & Tewksbury, 2000, 2002; Lupia & Philpot, 2005) or faux media, e.g., news websites constructed specifically for the experiment (Coleman, Lieber, Mendelson, & Kurpius, 2008; Eveland et al., 2004). Both of these approaches presume what is interesting to the user. In the case of traditional media, the online editors select stories for users whereas in the faux media examples, stories are selected (and sometimes written) by the research team. Recent research on media effects explores the impact of having participants choose their online news sources (Drunkman, Fein, & Leeper, 2012). Researchers have found that media effects endure longer when participants select their sources (Drunkman et al. 2012).

2) Participants were asked to take approximately five minutes to conduct this task. The amount of time is based on Hargittai's (2002) observational study, which suggests that people take approximately 4 minutes to complete an information-searching task related to political issues. Because youth are faster searchers than older adults (Hargittai, 2002), five minutes should be sufficient time to conduct this task. Participants were asked to identify the source of their information, which offers a validity check on the performance of the task, i.e., manipulation check. In addition, these details help understand the types of issues that youth find interesting rather than presupposing content that they might find interesting. Respondents were asked if they received a political message sent to them via email or through other communication tools (e.g., Facebook message) about a political, social or economic issue during the past 30 days. If they agreed, they were asked to find the message in their records. The task is meant to capture the alternative ways in which users can assess online news. Social networks are a key mechanism for the distribution of news and this process is simplified in the online environment (Boulianne, 2011; de Waal & Schoenbach, 2008; Pew Research Center, 2004a). This search activity is expected to take five minutes. As a validity check, participants were asked to identify the content of the message and who sent them the message.

3) Respondents will be asked to visit a news website for approximately 10 minutes. To simulate natural news consumption patterns, respondents were not given any direction on what to read or how much time to spend on specific articles. They were instructed to read what interests them. Several studies exposed participants to news websites for 5 minutes (Knobloch-Westerwick & Meng, 2009; Lupia & Philpot, 2005). The short duration of their manipulation limits the possibility of enduring media effects on attitudes or judgments such as political interest. Participants were asked to report back the news stories that they read, including what was most interest to them. This report back is expected to encourage them to not only skim the information but process the information. For this part of the manipulation, I used the Edmonton Journal news website (www.edmontonjournal.com). [1]

HYPOTHESES

All hypotheses evaluate the effects of online news use on local political interest. The first hypothesis compares political interest for a group before using online news (wave 1) and after online news use (wave 2). For Group B, political interest is expected to be higher after online news use compared to before online news use.

The next set of hypotheses compares the experimental groups and control groups in terms of political interest at wave 2. Experimental groups will report higher levels of political interest than the control groups. Because of the Solomon design, there are two groups of control groups and two groups of experimental groups. As such, the data offers several different analysis strategies. First, Group A's level of political interest is compared to Group B, then Group C's level of political interest to Group D. Group B's political interest is expected to be greater than Group A's political interest, because Group B used online news. Likewise, Group C's political interest is expected to be higher than Group D's political interest, because Group C used online news. As an aggregate test of the effects of usage, the last hypothesis suggests that political interest is higher for those who were used online news (Groups B, C) compared to those who did not use online news (Groups A, D).

Core Hypothesis: Online news use increases local political interest.
   Hypothesis #1: For the experimental group (Group B), political interest will be higher after online news use (wave 2) compared to before use (wave 1).
   Hypothesis #2: After using online news (wave 2), political interest will be higher for the experimental group (Group B) compared to the control group (Group A).
   Hypothesis #3: After using online news (wave 2), political interest will be higher for the experimental group (Group C) compared to the control group (Group D).
   Hypothesis #4: After using online news (wave 2), political interest will be higher for the experimental groups (Groups B,C) compared to the control groups (Groups A,D).

There are several ways to evaluate the hypotheses above. One is to use a comparison of group means. For this analysis approach, the hypotheses can be represented at follows:
Hypothesis #1: Group B's average political interest at wave 2 will be higher than their average political interest at wave 1 ($\bar{y}_{2b} > \bar{y}_{1b}$).
Hypothesis #2: Group B's average political interest at wave 2 will be higher than the average political interest for Group A at wave 2 ($\bar{y}_{2b} > \bar{y}_{2a}$).
Hypothesis #3: Group C's average political interest at wave 2 will be higher than the average political interest for Group D at wave 2 ($\bar{y}_{2c} > \bar{y}_{2d}$).
Hypothesis #4: The experimental groups' average political interest at wave 2 will be higher than the average political interest for the control groups ($\bar{y}_{2bc} > \bar{y}_{2ad}$).

   This analysis approach is the most straightforward for interpreting changes across time and between groups. This straightforward approach helps the interpretation of results for a rather complicated experimental design with multiple experimental and control groups. A series of t-tests are performed on the group means. The t-tests examine whether the mean differences vary significantly from the null hypothesis, which expects the mean differences to be zero, i.e., the null hypothesis suggests that the two group means are equivalent.
   However, the comparison of means approach is weak for several reasons. First, it does not take into account heterogeneity among participants (Frees, 2004, pg.7-9). The comparison of group means does not take into account that participants start out with different levels of political interest. For example, those participants who completed the project in 2010 may start out with different levels of political interest than those who participated in 2011. Second, the change in political interest at wave 1 and wave 2 will differ in magnitude for different participants, whereas the comparison of group means computes the average change based on the means at two points in time, which assumes a homogeneous effect among participants. Furthermore, the comparison of group means approach is weak for assessing how testing effects might affect the observed relationship between online news use and political interest. Such an analysis requires a multivariate analysis approach, which accounts for testing effects when estimating the effect of online news use on political interest.
   In response to the weakness in the group mean comparison approach, I present a regression model that looks at lagged effects, which is the wave 2 political interest score minus wave 1 political interest score. This lagged variable takes into account the differing magnitude of change for the various participants. When completing this analysis, the sample size is restricted to those who participated in both waves (n=101). The lagged analysis provides another set of statistics to test Hypothesis #2 listed above. In this case, the focus is on the slope and its statistical significance. The regression model focuses on the slope for a single variable about

group assignment – a dummy variable reflecting whether or not the individual is assigned to the experimental group or control group.

Hypothesis #2: The slope of political interest on group assignment is positive ($b_{yx} > 0$ group assignment: experimental group=1, control group=0; y=change in political interest from wave 1 to 2 with a possible range of -4 to +4).

A third set of analyses explores an ordinary least squares regression model of wave 2 scores for all groups. Again, the focus is on the slope and its statistical significance. The hypothesis examines whether there is a significant difference in political interest for those who used online news compared to those who did not use online news. This analysis specifically addresses Hypothesis #4 listed above.

Hypothesis #4: The slope of political interest on group assignment is positive ($b_{yx} > 0$ group assignment: experimental group=1, control group=0; y political interest with a range of 0 to 4).

RESULTS
Figure 2 displays the mean values for political interest at various points in times for the various groups. On a scale of 1 to 5, the average level of political interest at wave 1 was 2.4 with a standard deviation of .95. The variable was normally distributed around the mean. Using SPSS, participants were randomly assigned to be part of the experimental group and the control group. The random assignment process created two groups who had equivalent levels of political interest at wave 1 ($p>.10$). That said, attrition from wave 1 to wave 2 complicates this matter. For those participants in Group B (experimental group) who completed both waves of the project, the average level of political interest was slightly higher than their control group counterparts at wave 1 (2.6, n=47 versus 2.4, n=54). However, the difference of .2 was not statistically significant ($p>.10$).

Groups A and B's levels of political interest were measured again at wave 2. Group B's political interest is expected to be higher at wave 2 than wave 1, because they used online news sources before reporting their wave 2 political interest (Hypothesis #1). Figure 2 presents averages that demonstrate a higher average political interest for the experimental group at wave 2 compared to wave 1. At wave 2, the experimental group, on average, reported a level of political interest of 3.0 ("moderately interested"), compared to wave 1 where the average was somewhere at the midpoint between "moderately" and "slightly" interested in local politics ($p<.05$ Table 1). This finding supports Hypothesis #1.

Figure 2 also presents the average political interest at wave 2 for the control group. There is a significant difference in political interest between the control group (Group A) and the experimental group (Group B) at wave 2 ($p<.001$ Table 1). The difference is .8, which is almost one complete category on the 1 to 5 scale for political interest (2.2 versus 3.0). At wave 2, the experimental group, on average, reported a level of political interest of 3.0 ("moderately interested"), compared to the control group whose average is closer to "slightly" interested in local politics. This finding supports Hypothesis #2.

As mentioned, the comparison of group means is problematic for several reasons. These group means do not account for the different starting points of participants in terms of political interest and do not account for differences in magnitude of change from wave 1 to wave 2. These factors are important, because the attrition from wave 1 to wave 2 produced an experimental

group with slightly higher levels of political interest than the control group (2.6 versus 2.4) although the difference was not significant ($p>.10$). Furthermore, average political interest decreased slightly from wave 1 to wave 2 for the control group (p>.10), which may exacerbate the difference between the control and experimental group making it appear that online news had a significant effect ton political interest. This decline in political interest is not due to the experimental manipulation. As such, a lagged variable model is critical to an accurate analysis of these data. The lagged variable takes into account the different starting points of individuals within each group and focuses on changes in political interest across time accounting for values at wave 1.

Table 2 and Figure 3 present the results of an analysis of the lagged variable of political interest. On average, political interest for the experimental group increased from wave 1 to wave 2 ($p<.01$ Figure 3). Again, the findings affirm Hypotheses #2. The regression analysis of lagged scores affirms that the experimental groups reported a positive and significant change in level of political interest between wave 1 and wave 2 ($p<.01$ Table 2). The y-intercept reflects the change in political interest scores from wave 1 to wave 2 for the control group. The coefficient documents the decline in political interest for the control group between waves 1 and 2.

Incorporating Group C and D into the analysis allows us to test the third and fourth hypotheses. In this regression analysis, the dependent variable is level of political interest (range 0 to 4) at wave 2 for all groups. As demonstrated by the comparison of Groups A and B, Groups C and D's group average scores on political interest differed at wave 2 (Figure 2). Groups C (experimental group) reported, on average, higher political interest at wave 2, than Group D group (control group). This finding provides support for Hypothesis #3 ($p<.001$ Table 1). The size of the difference in group means is comparable to the difference in group means for Groups A and B. Again, the difference is .8 almost one complete category on the 1 to 5 scale for political interest (2.0 versus 2.8).

Because the magnitude of the change is comparable for Groups A and B as Groups C and D, I combined the two experimental groups (Groups B, C) and combined the two control groups (Groups A, D) for another test of the differences in the two group means. The experimental groups, on average, reported higher levels of political interest, than the control groups, as stimulated in Hypothesis #4 ($p<.001$ Table 1). In terms of the analysis of group means, the only significant difference among the four group means is between the experimental groups and the control groups. In other words, the group means for the two experimental groups are not significantly different from each other; the group means for the two control groups are not statistically significant from each other ($p>.10$). Political interest is higher for those who received the experimental manipulation at wave 2 (Groups B,C) compared to those who did not receive the experiment (Groups A,D) at wave 2. This findings was replicated in a regression analysis (Table 3). Political interest was .731 units higher for the experimental group, compared to the control group *(p<.001* Table 3). In sum, political interest at wave 2 was higher for those who used online news sources, compared to those who did not use online news sources, as suggested in Hypothesis #4.

Testing Effects and Response Bias
As explained in the description of the Solomon four-group design, I am concerned about possible testing effects as a result of participating in the pretest survey at wave 1. Political interest may have changed as a result of participating in the pretest survey, because of the cues that the pretest survey provided. To assess whether the pretest survey created a testing effect, I introduced a

variable to the regression model that identifies whether or not the individual had been invited to participate in (and completed) the pretest. Groups A and B would have a value of one on this dummy variable, whereas Groups B and C would have a value of zero on this variable. There were small differences in political interest based on whether or not the individual had completed the pretest; however, the difference was small ($p=.09$).

Related to testing effects is the idea of response bias. In this scenario, the pretest could have provided cues about the objectives of the research project. When participants were invited to participate in subsequent waves, they could have self-selected to not participate, because they have a low interest in online news and politics and they remember these questions from the pretest survey. This concern is fueled by attrition from wave 1 and wave 2 of the study. To assess response bias from attrition, I compared the average level of political interest for those who dropped out of the study after the pretest (in other words, do not sign up to participate in the second in-person wave of the project) and those who completed both waves of the project. The difference was not significant ($p>.10$). Additionally, I explored the possibility of response bias by comparing the difference in political interest between the control and experimental groups, regardless of whether the groups received the pretest. The difference in political interest for Groups A and B is comparable to the difference in political interest for Groups C and D (Figure 2). In both cases, the difference was .8, which is almost one unit on the political interest scale. As such, those who completed the pretest survey respond similarly to the experimental manipulation as those who did not complete the pretest survey, i.e., those participants who were "fresh" in the project.

DISCUSSION
Overall, the results affirm the value of online news in increasing political interest among a random sample of students at a Canadian university. When online news is operationalized to include a variety of news sources on a variety of topics, news exchanged through social networks, and news acquired through online versions of traditional news sources, online news can increase political interest. The findings are more definitive than Lupia and Philpot's (2005) findings, which determined that the effects of online news on political interest varied by website and by participants' evaluation of these websites.

While the findings offer some support for the hypothesis that online news increases political interest, questions remain about the degree of generalizability to a broader audience. While I posit that these first-year students are fairly representative of youth in general, this assumption merits further exploration. In particular, further research might explore the effects of online news on voter turnout among high school dropouts who have experienced the greatest decline in propensity to vote (Hooghe et al. 2010). That said, I believe that this test is conducted with a group resistant to traditional news sources and reluctant to participate in politics. If twenty minutes of online news use can significantly affect political interest for such a resistant or reluctant group, the effects on the larger population could be even greater. Furthermore, if online news can influence the political interest for even a subset of youth, i.e., students, this effect may help decrease the age gap in voting. The findings provide support for the argument that online news can mobilize or stimulate a wider range of the population to engage in politics. The experimental manipulation effectively increased political interest among a group that tends to be uninterested and unengaged in politics.

Further research should examine differential effects for particular groups of participants. For example, is the manipulation more effective for increasing some youth's political interest

more so than other groups? Furthermore, further research should explore the type of social, political, and economic information people are accessing online (first part of the manipulation) to examine whether this content differentially affects the magnitude of the effect of exposure on political interest.

The research design is innovative in allowing the investigation of testing effects and response bias introduced by panel attrition. Indeed, the findings suggest that researchers need to be more attentive to the effects of testing when conducting experimental studies. The classic experimental design does not allow for the examination of testing effects. The pretest survey may cue participants about the topic (and perhaps hypothesis) being investigated, which may cause participants to change their responses during the posttest or decide not to participate in the posttest measurement. This testing effect may compromise the validity of the observed findings. The Solomon four group design, which includes a fresh set of participants unexposed to the pretest survey, is a useful research design for evaluating testing effects and panel attrition.

Endnotes
1. Prior to completing the project, the Edmonton Journal website was examined for its degree of usability (e.g., easy to navigate), that its content includes topics that appeal to youth, and the interactivity of the site. These features have been found to mediate the effect of online news use on outcomes (Coleman et al. 2008; Lupia & Philpot, 2005; Tedesco, 2007). This focus group testing was completed by 10 MacEwan students who were completing a first-year sociology course. Students were brought into a computer lab and asked to use the site, then they participated in a 30 minute focus group about the website. The focus group questions were about the usability and interactivity of the site as well as whether the site contained stories that appealed to them. In general, students did affirm the usability and appeal of the site; however, they were less positive about the interactivity, citing disappointment with the comments posted to the site. They also expressed concerns about the amount of advertising on the site. The researcher decided to continue with using this site, despite these concerns, as these concerns are typical of all news websites; the concerns about advertising are common to all news sources, including print newspapers.
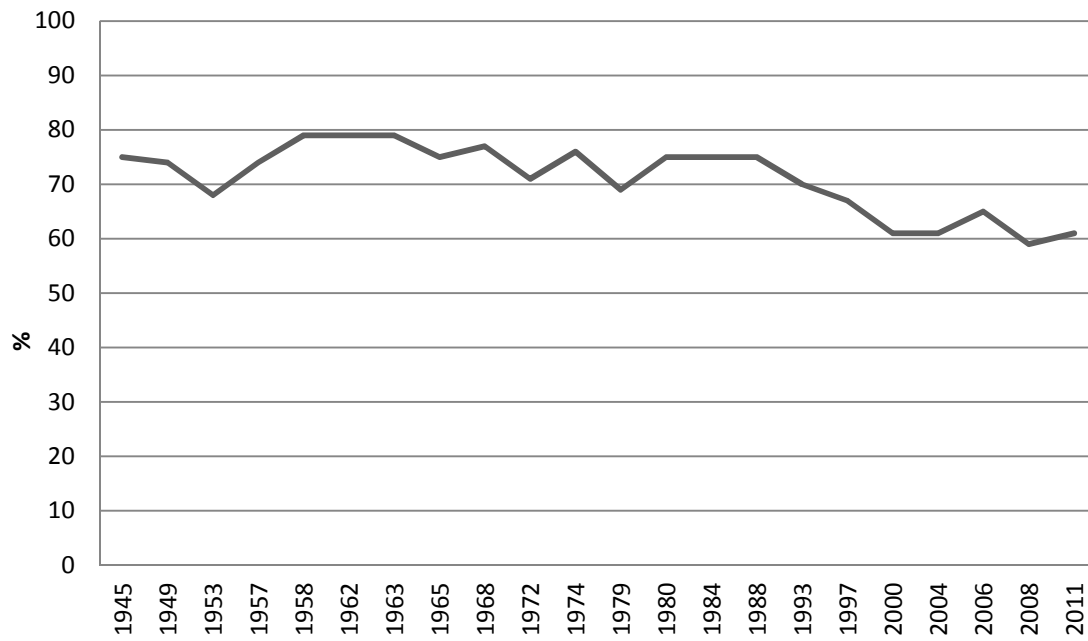
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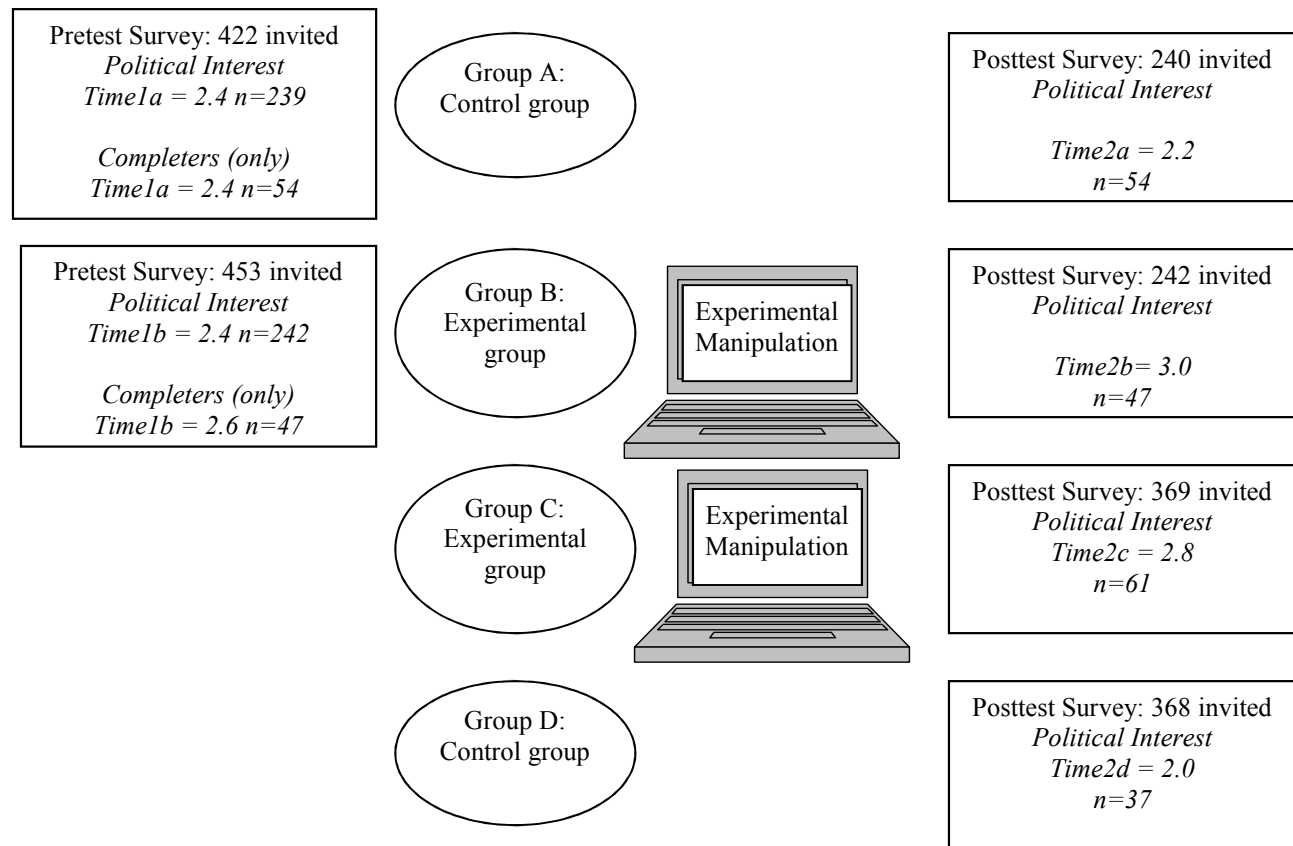
Figure 1: Voter Turnout 1945-2011

Source: Elections Canada
http://www.elections.ca/content.asp?section=pas&document=turnout&lang=e

Figure 2: Research Design and Means for Each Group

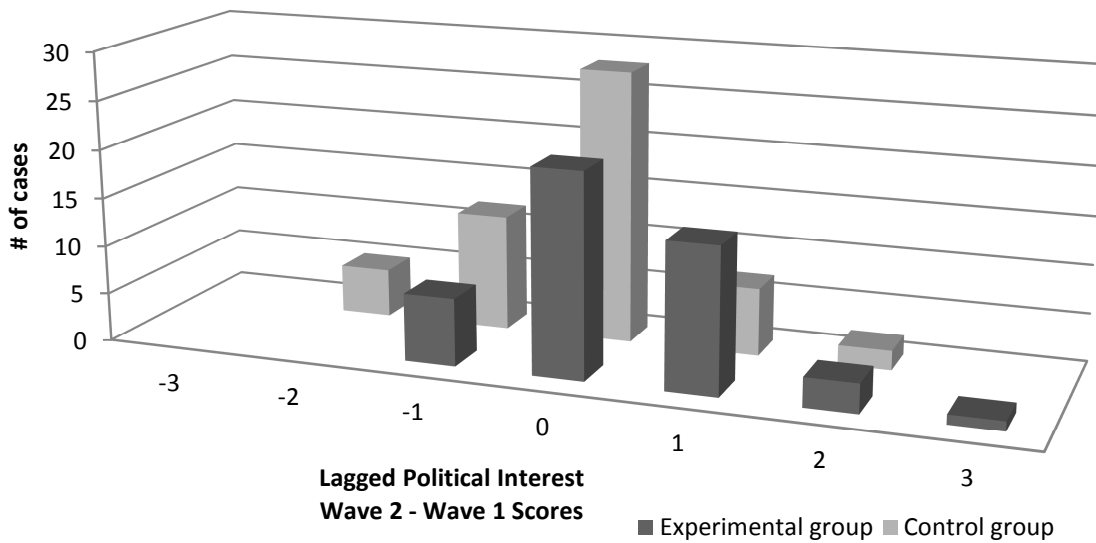|		
Pretest Survey: 422 invited *Political Interest* *Time1a = 2.4 n=239* *Completers (only)* *Time1a = 2.4 n=54*	Group A: Control group	Posttest Survey: 240 invited *Political Interest* *Time2a = 2.2* *n=54*
Pretest Survey: 453 invited *Political Interest* *Time1b = 2.4 n=242* *Completers (only)* *Time1b = 2.6 n=47*	Group B: Experimental group Experimental Manipulation	Posttest Survey: 242 invited *Political Interest* *Time2b= 3.0* *n=47*
	Group C: Experimental group Experimental Manipulation	Posttest Survey: 369 invited *Political Interest* *Time2c = 2.8* *n=61*
	Group D: Control group	Posttest Survey: 368 invited *Political Interest* *Time2d = 2.0* *n=37*

"Thinking about your local community (Edmonton and surrounding areas), how interested are you in local community politics and local community affairs?"

Response options were: not at all interested, slightly interested, moderately interested, very interested, and extremely interested

Measure Source: American National Election Study (2008-9) panel study

Figure 3: Lagged Scores for Political Interest (n=101)

Group mean experimental group (n=47): .3617
Group mean control group (n=54): -.2037
T-test (unequal variance)=3.127, mean diff=.565, p=.002

Table 1: Comparison of Means Related to Hypotheses

Group	Group	Mean Diff	T-test unequal variance	Two-tail p-value	Hypothesis
Group B Time1b = 2.6 n=47	Group B Time2b= 3.0 n=47	.36	1.78*	.08	#1
Group A Time2a = 2.2 n=54	Group B Time2b= 3.0 n=47	.78	3.937	.000	#2
Group C Time2c = 2.8 n=61	Group D Time2d = 2.0 n=37	.75	4.415	.000	#3
Groups A,D Time 2 = 2.1 n=91	Groups B,C Time 2 = 2.9 n=108	.73 (rounding)	5.775	.000	#4

Linked to Figure 2
*Based on hand-calculations. Independent samples.
http://www.danielsoper.com/statcalc3/calc.aspx?id=8

Table 2: Regression Analysis (Groups A and B) Lagged Local Political Interest (n=101)

Model:	Simple			
	b (St.Error)	B	t	p-value
Constant	-.204 (.124)		-1.64	.102
Experimental group=1 *Control group=0*	.565 (.181)	.299	3.122	.002
R-squared	9.0%			

Linked to Figure 3

Table 3: Regression Analysis (Groups A, B, C, D) of Political Interest at Wave 2 (n=199)

Model:	Simple				Testing Effects			
	b (St.Error)	B	t	p-value	b (St.Error)	B	t	p-value
Constant	1.121 (.094)		11.97	.000	.993 (.120)		8.266	.000
Experimental group=1 *Control group=0*	.731 (.127)	.379	5.749	.000	.765 (.128)	.397	5.969	.000
Received pretest=1 *Didn't receive pretest=0*	-	-	-	-	.215 (.128)	.112	1.685	.094
R-squared	14.4%				15.6%			