Evaluating the Impact of Informational and Normative Conformity on Decision Making in Online Settings

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Part I

I was touring a college with my mom and was in an area we were both unfamiliar with. It was around dinner time and both of us were hungry, so we did what everyone with Internet access does when they don't know where to eat—we looked on Yelp. Too tired and hungry to do a thorough investigation, we picked the first nearby restaurant with 5 stars and a normal price range and went to dinner. We *hated* it. How could this place get such high ratings? Then I realized that we never looked at *how many* ratings there were nor *who* was doing the rating. It could have been employees of the restaurant or customers offered a discount for doing so. Basically, I realized how unreliable social media could be. I contemplated this further and noticed that information spreads on social media based on people's perceptions of its credibility and appeal rather that its accuracy. This credibility is often based on how many "likes" a post receives. I began to explore my observations and found numerous editorials that shared my beliefs. They proposed that opinions that conformed to the norm were positively reinforced with "likes"; while opinions that strayed from it were negatively punished with a lack of "likes." These articles were lacking one thing—empirical evidence—which led me to my research.

I read up on conformity research, group polarization research, and the growing body of knowledge about social behavior online. With every article I read, my interest in the subject grew. I knew I wanted to test people's opinions after viewing social media "comments" and "likes," but I did not know what opinions I should be testing. The beauty of doing an in-house research project (a research project conducted at my high school rather than in a lab) was that I had a lot of freedom with regard to what I wanted to do with my project. Then, when completing a political questionnaire as per the request of my AP Government teacher, I realized that political

opinions was a perfect fit—especially with the candidates for the 2016 presidential election making frequent use of social media. Slowly but surely the rest of the details fell into place.

Prior to this research project, I did not view myself as a person who would pursue a STEM education and career. I have always had a natural curiosity and propensity for discovery; however, I did not realize that my thirst for knowledge would be best satisfied through my own scientific inquiry. Conducting my own research has shown me that my passion for advocacy can expand into the realm of scientific discovery. I now find myself to be a person who does not blindly accept information, but one who questions it before regarding it as fact. Through my research, I have discovered my passion for psychology. I am fascinated by the ways in which people act, think, and develop and will continue to explore these domains with fervor in college and beyond. Equally as interesting to me is that behavior can be quantitative through statistics—a field I never thought would spark my interest. Overall, I have found a love for the thrill of contributing to the vast and expanding body of scientific knowledge. My advice to high school students wishing to conduct research: find a topic you are passionate about.

Part II

Abstract

The present study aims to investigate the impact of two types of pressure to conform on decision making in an online setting. Since there has been an increase in social media usage in the political realm, the present study investigates how viewing "comments" and "likes" that are present on various social networking sites can cause a significant change in people's political opinions. Subjects received both an informational conformity condition and a normative conformity condition as participants served as their own control. For both conditions, subjects gave their initial opinions on five different political issues. In the informational conformity condition, participants viewed persuasive "comments" on one of the political issues; whereas in the normative conformity condition, participants viewed "likes" on one of the political issues. Subjects also completed the Satisfaction with Decision Scale (Holmes-Rovner et. al., 1996) after each condition. Overall, the present study illustrates the profound impact of informational and normative pressure on people's political opinions and decision satisfaction in online environments.

Introduction

People are fundamentally decision makers. Everything people do, whether consciously or unconsciously, is the result of prior or anticipated decisions (Saaty, 2008). According to the Classical Decision Theory, decision making involves three components: options or courses of action, beliefs of the options, and expectations of the outcomes. This theory emphasizes that the aim in making a decision is to maximize the expected rewards and reduce the expected punishments (Hastie, 2001). In addition, the Bechara/Damasio Model defines decision making as the ability to select the most advantageous response from an array of immediate possible behavioral choices. Cognitive processes often impact these decisions in that people use their past experiences to retrieve an associated prior reward or punishment to plan for the optimal outcome (Bechara & Damasio, 1997; Bechara & Damasio 2000). Both of these theories underscore the importance of the anticipated results of a decision.

Recently there has been a shift in the way psychological researchers study decision making; moving from the more traditional cognitive and behavioral aspects to including a neurological aspect (Krawczyk, 2002). Various studies have concluded that the prefrontal cortex, anterior cingulate cortex, and basal ganglia play an important role in decision making, specifically in anticipating the results. The prefrontal cortex is influential in estimating incentive gain (Breiter et. al., 2001; Knutson et. al., 2000; Elliot et. al., 1999), the anterior cingulate cortex is involved in cognitive conflict processing and reward recognition (Krawczyk, 2002), while the basal ganglia controls reinforcement-driven learning and decision making (Fellows, 2004). Any flaws in neural processing involved with decision making will lead to cognitive impulsivity, which is defined as a selection biased towards the choices associated with greater immediate reward, irrespective of future consequences of the choices. In other words, people will consider short-term benefits more meaningful than long-term consequences; therefore, the potential short-term benefits are more influential in a decision. (Bechara & Damasio, 1997; Bechara & Damasio 2000).

Social impact, or the influence of social force on a single target, has also been found to correlate with opinion formation and decision making (Latané, 1981). Group consensus is believed to be an integral part of society (Asch, 1951) and generally the most direct route to goal

attainment (e.g. a decision) (Festinger, 1950). This consensus serves as a heuristic about how to act, because consensus implies correctness (Cialdini, 1993). Therefore, for consensus to be constructive, each individual must contribute independently out of his or her experience and insight (Asch, 1955). When an individual disagrees with several seemingly independent sources who all hold the same position, it is reasonable to believe that the group is more likely to be correct (Asch, 1955; Mackie, 1987; Ross, Bierbrauer, & Hoffman, 1976; Wilder, 1977, 1978). However when consensus is achieved artificially under the dominance of conformity, the social process is polluted (Asch, 1951).

Conformity, which is defined as a change in behavior or belief as the result of real or imagined group pressure (Myers, 2008), has the potential to be beneficial or detrimental. It can be a strong group force that can be an important means of keeping groups together and facilitating communication (Bond & Smith, 1996) as well as easing group coordination and task performance (De Dreu & West, 2001). However conformity can also cause people to behave inhumanely (Zimbardo, 2007) as well as make bad decisions with potentially disastrous long-term consequences (Janis, 1972). In 1955, Deutsch and Gerard identified two main types of conformity: informational and normative. When people are uncertain about a situation or decision, they often turn to the group for guidance (Hornsey, Majkut, Terry, & McKimmie, 2003) even in the absence of direct group pressure (Reicher, 1984). Deutsch and Gerard coined this concept informational conformity. In contrast to this, normative conformity is based on the goal of achieving social approval. The main difference is that a person adopts a particular belief or decision under normative conformity not because he trusts its content but because he expects to gain specific rewards or public approval and avoid specific punishments or disapproval (Kelman, 1958). Additionally, in normative conformity the act of conforming to one's own expectations can enhance feelings of self-esteem or self-approval, while nonconformity can lead to feelings of anxiety or guilt (Deutsch & Gerard, 1955). The social approval that accompanies conformity serves as a powerful short-term reward.

Another type of social impact is group polarization, which refers to a situation in which members of a group (holding the same initial opinion) deliberate and end up with a more extreme opinion. This formulated group opinion moves in the same general direction as the initial opinion

(Sunstein, 2008). According to the persuasive argument theory, group polarization occurs through the content of group discussion. Group members contribute viewpoints that a single individual did not consider, which leads to more extreme beliefs (Burnstein & Vinokur, 1973; Burnstein & Vinokur, 1977; Burnstein, 1982). Similarly, Sunstein concluded that people's opinions grow more extreme after learning that their opinion is shared by others (2008). All these studies concluded the same important concept: the longer members of a group are able to participate in an exchange of information, the more likely individual opinions will change. This concept is particularly important in today's age of social media, where the exchange of information is constant.

Since much of the research on social impact (conformity and group polarization) has traditionally focused on face-to-face interaction, there is a shortage of research investigating social impact within online settings, particularly social media. As society has been shifting to more online interactions, it is has become increasingly important to focus on how conformity and group polarization can influence people in these type of environments. The Pew Center has discovered that social media usage has proliferated in the past decade. In 2005, 7% of all adults in the United States used social media; however, this number has skyrocketed to 65% in 2015. Social media usage is especially becoming more prevalent in those ages 18 through 29; as 90% of all people in the United States in this age group reported using at least one form of social media in 2015, as compared to 12% in 2005 (Perrin, 2015). These numbers are particularly important as various studies have found that group dynamics on the internet are similar to group behaviors in the offline world (McKenna & Green, 2002). A 2004 study by Baragh and McKenna supported this idea when they found that 65% of Internet users stated that they use the web for some form of social activity (e.g. email, blogs, social media).

Social media platforms, such as Facebook and Twitter, have often sought to facilitate personal expression; ironically however, the majority of social media users report that they are willing to express their opinion only if they believe their peers will accept it. This means social media has the potential to actually stifle articulation, rather than develop it (Hampton, et. al., 2014). Past studies have found that not only is conformity present in online interactions (Rossander & Eriksson, 2012), but these online interactions have the potential to foster more

conformity than face-to-face interactions because there is a lack of visual cues and physical presence, creating a sense of anonymity (McKenna & Green, 2002). Anonymity has also been found to facilitate group polarization (Sunstein, 2001).

Today there is an ever growing vast potential for social influence in online interactions as people have increasingly used the Internet to comment on everyday news articles, blogs, etc. (Rossander & Eriksson, 2012). On an average day, 26% of Facebook users "like" another user's content, which means it is then shared with, on average, 229 friends who can then "like" the content and share it with their friends. This "like cycle" allows content to spread very quickly through social media (Hampton et. al., 2011).

This is particularly important when one realizes that social media platforms, like Facebook and Twitter, have been playing an increasingly important role in United States politics over the past decade. Voters are now able to get much of their influential political information from social media. Political usage of social networking sites includes information such as discovering which candidates friends/followers have voted for or will vote for, getting candidate or campaign information, posting content related to politics or the campaign, or signing up as a friend/follower of a candidate or political group (Smith et. al., 2011). The significant role of social media in politics is proliferating. A 2014 study reported that 28% of registered voters used social media for one or more of these political uses during the 2014 campaign, as compared to 13% during the 2010 election (Smith, 2014). Moreover, 42% of people ages 18 through 29 used social media for political purposes during the 2010 election (Smith et. al., 2011). What is particularly important is that 16% of social media users have reported changing their views on a political issue after viewing a friend's content (Rainie and Smith 2012). This finding is one of the key focuses of the current study.

Based on the vast potential for social media sites to influence decision making, the increasing importance of social media in politics, and people's innate propensity to conform, the present study investigated whether social media "comments" and "likes" would influence people's opinions on political issues. The current study therefore hypothesizes that:

1. There will be a statistically significant change in people's opinions in both the informational conformity condition (after viewing "comments") and the normative conformity condition (after viewing "likes").
2. Within the normative conformity condition, participants will significantly change their opinions in a polarized direction after viewing "likes" that support their initial opinions.
3. Participants who indicate their original opinions as "indifferent" will change their opinions significantly more than those who did not in both conditions.
4. People will feel significantly more satisfied with their decisions in the normative conformity condition (after viewing "likes") as compared to the informational conformity condition (after viewing "comments").

Methods

IRB Approval

The Institutional Review Board of Plainview-Old Bethpage John F. Kennedy High School acknowledged and approved the current project before any data collection commenced. The IRB consisted of a school psychologist (PhD), a science teacher, and the district chairperson of science. The board classified this project as minimal risk because the probability and magnitude of discomfort was not greater than those ordinarily encountered in daily life. The IRB determined that participants needed to be eighteen years of age or older, needed to provide written informed consent, and needed to be informed that they were at liberty to stop at any time while they were answering the questions.

Participants

After official approval was granted from the IRB the online experiment was sent out. Participants were acquired by distributing the link, https://www.surveymonkey.com/r/opinionstudy, through e-mails and posts on social media.

Email addresses were collected from various public websites (school districts, government agencies, etc.). This allowed for the population to encompass a diverse range of cultural backgrounds from all 50 states. There was a total of 685 participants, ranging from ages 18 to 90, with mean age of 46.94 and a standard deviation of 12.46. 32.20% of the participants were male while 67.80% were females. All subjects were first required to electronically consent that they are over 18 years of age and voluntarily agree to participate in the study. No personal characteristics of the subjects were collected other than a few demographic questions.

Procedure

When all participants clicked on the hyperlink, the following message appeared:

"Hello I am a Social Science Research. Thank you for your interest in my research. I would like to survey some of your opinions on current societal issues (e.g., political, social, and economic).

If you agree to participate, you will first be asked to answer a few demographic questions. Then you will answer 5 questions about your current societal views. Next you will view public opinion on some of the same issues. You then will be asked to complete the Satisfaction with Decision Scale (Holmes-Rovner et. al., 1996). You will then repeat this process with 5 different societal issues.
All information will be completely anonymous and all answers will be kept confidential. Your contact information will be coded by a third party assistant so the confidentiality of your survey responses will remain anonymous. All subject data will be stored on a password-protected computer. Although your IP address will not be stored in the survey results, there is always the possibility of tampering from an outside source when using the Internet for collecting information. While the confidentiality of your responses will be protected once the data is downloaded from the Internet, there is always the possibility of hacking or other security breaches that could threaten the confidentiality of your responses. Additionally, because the questions deal with personal information, some questions may make the respondent feel uncomfortable. Please note that you have the ability to omit any questions that make you feel uncomfortable. If you wish to quit the study, simply exit out of the webpage.
There will be no direct benefit to you for taking part in the study. The researcher will learn more about some of the public's views on societal issues.
If you decide to participate, please answer all questions honestly. It will take you approximately 15 minutes to complete the entire study.
If you have further questions about this study or would like verification of this study's legitimacy, you may send an email to rjtesar@msn.com and my research teacher will contact you.
Thank you for participating!"

Subjects were first asked to type the following sentence: "I affirm that I am over the age of 18 and agree to participate in this study." Participants then answered demographic questions including age and gender. All of the participants received both the informational conformity condition and the normative conformity condition as participants served as their own control.

Informational Conformity (Condition 1)

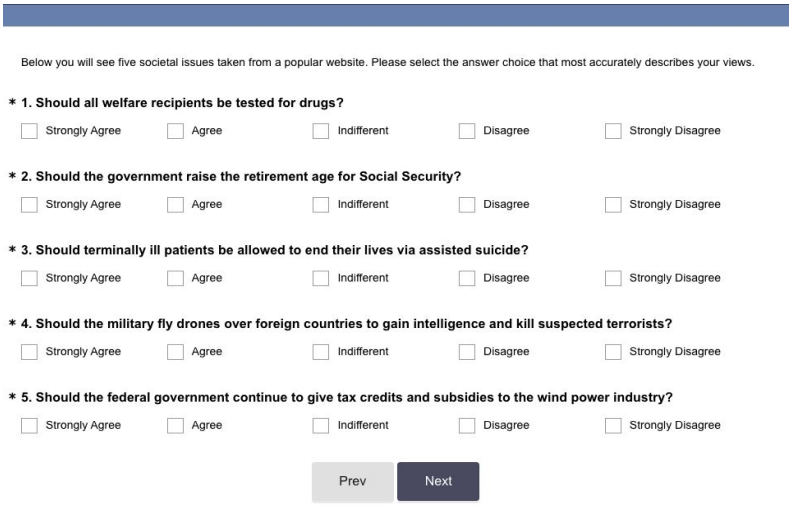

Figure 1

In order to establish a baseline, participants first reported their initial opinions on five political issues, one question per each of the following categories: social, economic, domestic policy, foreign policy, and environmental (Figure 1). These questions were selected from www.isidewith.com/political-quiz and http://www.debate.org/opinions/ .

Next, all subjects ranked these five issues in order of most important to least important in their personal opinion. The computer program then showed each subject two comments for the issue that they indicated as having middle importance (ranked third). Each comment was taken from either www.isidewith.com or http://www.debate.org/opinions/. Each subject saw one comment in support of the issue and one comment opposed to the issue (Figure 2).

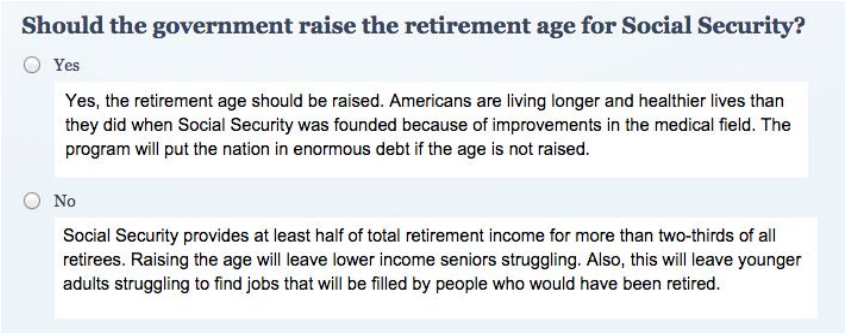

Figure 2

The present study proposes that on social media, informational influence takes the form of "comments" since a "comment" is written information of someone's opinion.

Since informational conformity occurs when people feel uncertain about a situation or decision, people therefore rely on the group as a reference point for reality (Deutsch & Gerard, 1955). To foster a situation in which people were uncertain but still had interest in the topic, the issue of middle importance was selected. Another reason the issue of middle importance was selected is because people who have very strong feelings about the subject matter are very likely to speak out, and people with very weak feelings about the subject matter are very unlikely to speak out (Hampton et. al., 2014). After viewing the comments, participants gave their opinion again on their issue of middle importance using the same 1-5 likert scale.

Since examining interactive processes requires more than input/output answers (Price et. al., 2006), subjects then completed the Satisfaction with Decision Scale (Holmes-Rovner et. al., 1996) to reveal their feelings about the decision they made (See Appendix A).

Normative Conformity (Condition 2)

Next, participants viewed another set of five questions from the same sources and in the same categories as the questions in condition 1 (Figure 3). Again, they were asked to rank the issues from most important to least important.

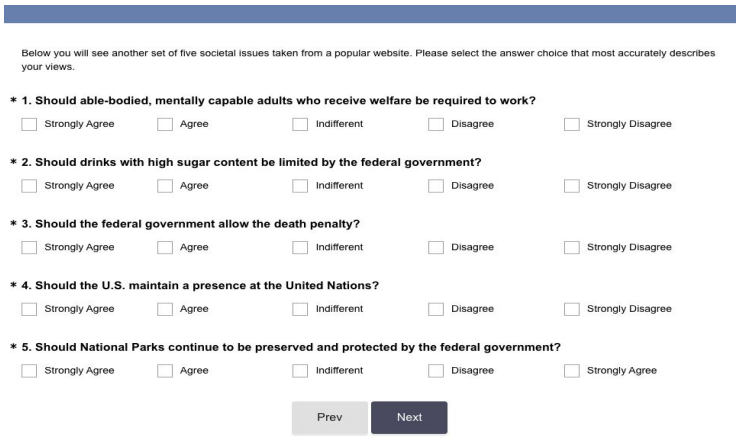

Figure 3

In contrast with Condition 1, the participants then viewed comments that included public "likes," intended to look similar to those on social network sites. Since normative conformity occurs when people feel pressure to match the group (Deutsch & Gerard, 1955), the present study proposes that viewing "likes" provides normative pressure since a "like" is a form of social approval. In contrast to the "comments," these likes were arbitrarily generated.

To keep consistent with Condition 1, participants only viewed these comments and "likes" about the issue of middle importance. The comments that subjects viewed as having "likes" were not from either of the previously mentioned websites; as these comments were little more than a restatement of the side that they supported (Figure 4 and Figure 5).

For each issue however, the participants randomly viewed one of two possible images. Figure 4 had more "likes" disagreeing with the political issue whereas Figure 5 had more "likes" agreeing with the political issue.

Figure 4 and Figure 5

After viewing the "likes," participants gave their opinion again on their issue of middle importance. Subjects then completed the Satisfaction with Decision Scale a second time.

Results

All of the data was analyzed using IBM SPSS Version 23.0. The responses to all of the participants issues of middle importance for each of the two conditions were broken down into four categories: the opinion before viewing comments alone, the opinion after viewing comments alone, the opinion before viewing likes, and the opinion after viewing likes. Participants chose responses ranging from 1 (strongly agree) to 5 (strongly disagree) and the means for each of the previously mentioned categories were calculated and tested for statistically significant differences.

One Sample Results

A one-sample t-test was conducted on the absolute value of change between responses before viewing "comments" and after viewing "comments", as well as on the absolute value of change between responses before viewing "likes" and after viewing "likes", to evaluate whether their means were statistically significant from 0, which would represent no change. The sample mean of .35 (SD=.65) for post comment change was statistically significant from 0, $t(685)=14.13$, $p<001$. Moreover, the sample mean of .32 (SD=.67) for post like change was also statistically significant from 0, $t(685)=12.68$, $p<.001$. This indicates that people's decisions significantly changed after viewing both the "comments" and "likes." This finding supports the study's first hypothesis.

Within Subjects Results

Responses before and after viewing the "like" condition (normative conformity) were broken down into three subcategories indicating whether the portrayed "likes" agreed with the original opinion, disagreed with the original opinion, or neither (when the original opinion was indifferent). Subjects who originally indicated their opinion as the most polarized (either a 1 or 5 in the likert scale) were not included. A paired samples t-test revealed a statistically significant difference between the mean number of change after viewing "likes" that supported the original opinion ($\bar{x}=.34$, SD=.73) and the mean number of change after viewing "likes" that contradicted the original opinion ($\bar{x}=.27$, SD=.60), $t(641)=1.314$, $p=.02$. This means that people changed their opinions more, in a polarized direction (e.g. from a 4 to a 5 on the likert scale), when the "likes" of the group supported the participant's initial opinion. This finding supports the study's second hypothesis.

Between Subjects Results

Mann-Whitney U tests were conducted to evaluate whether significant differences existed between the mean change in those who had indifferent opinions (indicated by a 3 on the likert scale) before viewing "comments" (group A) and the mean change in those who did not have indifferent opinions (indicated by a 1, 2, 4, or 5 on the likert scale) before viewing "comments" (group B). Group A had an average rank of 404.85, while group B had an average rank of 333.64, $z=-4.14$, $p<.001$. An additional Mann-Whitney U Test was conducted to evaluate whether significant differences existed between the mean change in those who had indifferent opinions before viewing "likes" (group A) and the mean change in those who did not have indifferent opinions before viewing "likes" (group B). Group A had an average rank of 441.73, while group B had an average rank of 336.93, $z=-4.384$, $p<.001$. These two results indicate that people who did not have solidified opinions on political issues were more likely to change their initial opinions. This supports the study's third hypothesis.

Results on Decision Satisfaction

In addition to measuring which conditions caused participants to significantly change their opinions, the present study also investigated in which conditions participants were most satisfied with their decisions, according the the Satisfaction with Decision Scale (Holmes-Rovner et. al., 1996). A paired samples t test revealed a statistically significant difference between the mean amount of satisfaction after viewing "likes" ($\bar{x}=24.47$, $SD=4.56$) and the mean amount of satisfaction after viewing "comments" ($\bar{x}=23.39$, $SD=4.37$), $t(685)=-.79$, $p<.001$. This indicates that people were significantly more satisfied with their decisions after viewing "likes" than after viewing "comments." This finding strongly supports the study's fourth hypothesis.

Discussion

The results highlight the significant effect that social media has on decision making. The study measured the changes in people's opinions when exposed to the "comments" and "likes" that are commonly found on social networking sites. As hypothesized, people's initial opinions did significantly change when presented with both "likes" and "comments." This is a particularly interesting result because in both conditions, the participants did not know the source of the information or if it was accurate. As previously stated, the "likes" were arbitrary and had no meaning behind them; nonetheless, participants were significantly influenced by them.

Additionally, the statistically significant difference showing that participants changed their opinions more when exposed to "likes" that supported their initial opinions strongly supports the notion that group polarization was present. However these results contradict the persuasive argument theory. Individuals did not adopt more extreme viewpoints because of content (Burnstein & Vinokur, 1973; Burnstein & Vinokur, 1977; Burnstein, 1982); rather, participants adopted more extreme viewpoints because of "likes" that conveyed that the clear majority of the group agreed with their initial opinions. This finding is particularly important because it indicates a disparity in group polarization in face-to-face interactions and in online settings.

The results of the present study also suggest that people who did not have solidified opinions on political issues (selected their opinions to be "indifferent" in either or both conditions) were more likely to change from their initial opinions. Therefore, those without solidified opinions are particularly vulnerable to the manipulation present on social networking sites.

In addition, the results from the Satisfaction with Decision Scale (Holmes-Rovner, et. al., 1996) revealed important insight into people's feelings about their decisions. The results concluded that people were more satisfied with their decisions after viewing "likes" as compared to after viewing "comments". Participants felt more satisfied after viewing arbitrarily generated "likes" than after reading arguments written by actual users. This suggests that when people change their decisions after viewing "likes," they are relieving the social anxiety that comes from

disagreeing with the majority as opposed to when people change their decisions after viewing "comments"; therefore, they feel more satisfied after viewing "likes". This supports that "likes" facilitate normative conformity whereas "comments" facilitate informational conformity. This is an imperative finding because it is difficult to separate the informational content of persuasive messages from normative group pressure (Prince et. al., 2006); however, the present study concludes that on social media they appear as distinct social phenomenon. This result also suggests that cognitive impulsivity, a decision biased towards options associated with greater immediate reward despite potential long-term consequences (Bechara & Damasio, 1997; Bechara & Damasio 2000), is also potent on social online media as a result of the social approval that accompanies conforming to the majority opinion.

Limitations

In the present study, is not possible to determine if people suppressed their opinions or if there would be a long-term change in their opinions. However, due to the limited time frame to conduct this experiment and the anonymity of the participants, it was not possible for the present study to investigate this. Both possibilities, people suppressing their opinions or experiencing a long-term change in their opinions, reveal the salient influence of social media.

Also, the experiment was distributed online which means that participants could have taken it on different devices and in different settings, creating potential confounding variables. However, it was essential to distribute the experiment via the Internet in order to obtain a large sample of participants.

In addition, the use of brain scanning technology to detect neural activity in the prefrontal cortex, anterior cingulate cortex, and basal ganglia would provide insight into the neural processes underlying conformity and group polarization. However, due to the limited resources of this study, there was no access to the technology to test this.

Future Work

To expand the breadth of the current study, future studies would investigate social media and conformity in domains other than politics, for example product purchasing. It would also include adolescents under the age of 18 so that the results are more representative of all ages, and so that those who grow up with social media at their fingertips can be studied. The experiment should be conducted in person, rather than online, to limit confounding variables.

Additionally, future studies would utilize brain scanning technology such as functional magnetic resonance imaging (fMRI) and electroencephalography. Since modern decision making models include neurological components (Bechara & Damasio, 1997; Bechara & Damasio 2000; Krawczyk, 2002), future studies should investigate brain activity while people make decisions and view different forms public opinion. The areas of the brain that should be investigated are those that have been previously proven to be involved in decision making, including the prefrontal cortex (Breiter et. al., 2001; Knutson et. al., 2000; Elliot et. al., 1999), the anterior cingulate cortex (Krawczyk, 2002), and the basal ganglia (Fellows, 2004). This data could be used to investigate cognitive impulsivity when making a decision after viewing social media and could reveal more similarities or differences between these social phenomena in face-to-face interactions and online interactions.

Overall, social media provides a new medium for people to interact and must be empirically investigated to give insight into modern social interactions.

Conclusion

Overall, the results of the present study strongly support the notion that social media can potentially exert a huge unconscious influence on the decision making process. Only a mere 16% of social media users have reported changing their views on a political issue after viewing a friend's content (Rainie & Smith 2012); however the findings of this study reveal that a much larger portion of users' opinions can be influenced by social media. This means that people are not aware of the powerful ways in which social media can manipulate their decisions. The findings of this study are crucial because diversity in discussion, freedom of speech, and the exchange of ideas are considered to be imperative parts of democracy; however, these principles are challenged when people form homogenous groups via conformity and group polarization (McPherson, Smith-Lovin, & Cook, 2001; Sidanius & Pratto, 2001; Sunstein, 2008).

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Appendix A (Satisfaction with Decision Scale (Holmes-Rovner et. al., 1996)

While thinking about your answer to the previous question, please complete the Satisfaction with Decision Scale. Please indicate to what extent each statement is true for you AT THIS TIME.

*** 1. I am satisfied that I am adequately informed about the issues important to my decision.**

☐ 1. Strongly Disagree ☐ 2. Disagree ☐ 3. Neither Agree nor Disagree ☐ 4. Agree ☐ 5. Strongly Agree

*** 2. The decision I made was the best decision possible for me personally.**

☐ 1. Strongly Disagree ☐ 2. Disagree ☐ 3. Neither Agree nor Disagree ☐ 4. Agree ☐ 5. Strongly Agree

*** 3. I am satisfied that my decision was consistent with my personal values.**

☐ 1. Strongly Disagree ☐ 2. Disagree ☐ 3. Neither Agree nor Disagree ☐ 4. Agree ☐ 5. Strongly Agree

*** 4. I expect to successfully carry out (or continue to carry out) the decision I made.**

☐ 1. Strongly Disagree ☐ 2. Disagree ☐ 3. Neither Agree nor Disagree ☐ 4. Agree ☐ 5. Strongly Agree

*** 5. I am satisfied that this was my decision to make.**

☐ 1. Strongly Disagree ☐ 2. Disagree ☐ 3. Neither Agree nor Disagree ☐ 4. Agree ☐ 5. Strongly Agree

*** 6. I am satisfied with my decision.**

☐ 1. Strongly Disagree ☐ 2. Disagree ☐ 3. Neither Agree nor Disagree ☐ 4. Agree ☐ 5. Strongly Agree