

No One Cares What You Like:

An investigation of how 'likes' associated with legitimate news articles published on Facebook does not influence public opinion on political topics

Helena Thatcher
PS 404: Tutorial in American Politics
Dr. K. Elizabeth Coggins
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Click, Read, Like: How influential are these three common steps?

At 6:36 AM on September 27, 2017 @realDonaldTrump tweeted “Facebook was always anti-Trump. The Networks were always anti-Trump hence, Fake News, @nytimes (apologized) & @WaPO were anti-Trump. Collusion?”¹ 65,019 people ‘liked’ and 43,300 were ‘talking’ about this tweet. At 3:38 PM Facebook’s founder and CEO Mark Zuckerberg responded in a Facebook post: “Trump says Facebook is against him. Liberals say we helped Trump. Both sides are upset about ideas and content they don’t like. That’s what running a platform for all ideas looks like... We will continue to work to build a community for all people.”²

Click, read, like: three effortless steps that could alter individual’s political opinions. In the era of the Internet, a person’s voice has evolved beyond face-to-face social interactions. Social media sites now offer an alternative web-based social network that allows users to select a group of “friends” that have access to the content they post. Armed with a computer and an email address, an individual can log onto any social media site. Within several clicks, he has an internet profile, and a voice on the Internet. Every friend he “accepts,” each news article he “likes,” and any comment he “shares” might influence the “community for all people” that Mark Zuckerberg is cultivating.

Seven months prior to the 2016 Presidential Elections, I took up the question of whether web-based social networks, specifically Facebook, could provoke a majority opinion with enough influence to change an individual user’s political opinion. A multi-method approach (experiment, survey, and interview) yielded one finding: As a respondent’s tendency toward individualism increased, their likelihood to conform to the majority opinion of their web-based social network decreased, ($p = 0.038$).³ There was not enough evidence to indicate a relationship between the homogeneity of a user’s Facebook friends’ political opinions (IV_1), exposure to politics within the user’s web-based social network (IV_2), and the user’s tendency to conform to the majority opinion (DV).

Nearly two years after the 2016 Presidential Election, and in the midst of what pundits and scholars deem “the Social Media Presidency,” I am reinvestigating whether exposure to an individual’s close ties’ media consumption (IV), affect that individual’s political opinions (DV). Specifically, this paper will investigate CNN’s political Facebook news articles with visible social cues’ (# of ‘friends’ vs. ‘others’ that ‘liked’ the article) effect on user’s opinions of hot button political topics.⁴

¹ Donald Trump, “Twitter,” Posted September, 27 2017, 6:36 AM.

<https://twitter.com/realDonaldTrump>.

² Mark Zuckerberg’s Facebook page, Accessed April, 4 2018.

<https://www.facebook.com/zuck/posts/10104067130714241>.

³ Helena Thatcher, “Logging onto Peer Pressure: The Majority Opinion Influence within Web-based Social Networks,” (Political Methods, Colorado College, 2016).

⁴ Amy Mitchell, “Which News Organization Is the Most Trusted? The Answer Is Complicated,” Pew Research Center, October 30, 2014, Accessed April 04, 2018.

<http://www.pewresearch.org/fact-tank/2014/10/30/which-news-organization-is-the-most-trusted-the-answer-is-complicated/>.

Online Social Networks and Public Opinion on Political Topics:

The initial Political Science research on online social networks focuses on how social media platforms could be leveraged to increase voter engagement, specifically registration and turn out. In 2012, scholars partnered with Facebook to conduct the seminal experiment in determining if online social networks operate the same way as face-to-face interactions. Bond *et al.* delivered randomized political mobilization messages to 61 million Facebook users during the 2010 US congressional elections. The results indicated that the get-out-the-vote and polling location messages “directly influenced political self-expression, information seeking and real word voting behavior.”⁵

Following the 2016 Presidential Election, a second body of Political Science research emerged to address the effects of false stories, “fake news,” primarily distributed through social media sites, on political opinions. Hunt Allcott and Mathew Gentzkow’s paper, “Social Media and Fake News in the 2016 Election,” provides the theoretical and empirical background for the debate surrounding the effect on political opinion of both false and accurate news articles shared through social media. Specifically, “62 percent of US adults get news on social media” and regardless of party identification or political ideology, individuals’ opinions are influenced by the news they see on social media, regardless of its accuracy.⁶

There is an apparent gap in these two sub-sections of political science literature, specifically how the presence of reliable political news articles on social media sites influences public opinion. In order to address this gap, I turned to the interdisciplinary (Psychology and Economic) theory of sequential decision modeling. Defined by Abhijit V. Banerjee in his paper “A Simple Model of Herd Behavior,” the sequential decision model occurs when “each decision maker looks at the decisions made by previous decision makers in taking her own decision.”⁷ These decisions are exhibited by social cues. For example, if a woman is trying to decide between two adjacent restaurants to dine in, she may base her decision on how crowded each restaurant is, and assume that the more heavily trafficked restaurant is better.⁸

This theory directly relates to social media sites, specifically Facebook, through the ‘like’ function. Facebook users are able to respond to a news article by clicking the ‘like’ button (indicated by a cartoon thumbs-up). The record of people who ‘liked’ the article is then attached to the article and users are able to view the ‘likes’ made by their Facebook ‘friends’ and ‘non-friends.’ Thus, a Facebook user can refer to the past users’ social cues, indicated by ‘likes,’ when deciding the importance of the article and the political topics it addresses.

⁵ Robert M. Bond, Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle, and James H. Fowler, “A 61-million-person experiment in social influence and political mobilization,” *Nature* 489 (2012): 295-298. doi: 10.1038/nature11421, 295.

⁶ Hunt Allcott and Matthew Gentzkow, “Social Media and Fake News in the 2016 Election,” *Journal of Economic Perspectives* 31, no. 2 (2017): 211-236. doi: 10.1257/jep.31.2.211, 212-213.

⁷ Abhijit V. Banerjee, “A Simple Model of Herd Behavior,” *The Quarterly Journal of Economics* 107, no. 3 (1992): 797-817. <http://www.jstore.org/stable/2118364>, 797

⁸ Ibid.

Network analysis, a Sociological methodology, examines similar patterns as herd behavior. However, network analysis places greater significance on relationships between ‘close-ties,’ because the frequency and significance of face-to-face interactions is often stronger than of those friends one does not see frequently, or friends of friends.⁹ For the purpose of this research, I will define ‘close-ties’ as anyone who is a ‘Facebook friend.’¹⁰ On January 11, 2018, Facebook introduced sweeping changes to their News Feed algorithm, including the factors (i.e. the number of the user’s Facebook friends that reacted to a post) and the degree of influence those factors hold in determining the type of content that appears in a Facebook user’s scrolling home screen. Facebook is now privileging content, including news articles, that have been liked, reposted, or commented on by the user’s Facebook friends.¹¹

The Re-conceptualization of Social Interactions

Increased globalization and technological advancements are two factors that have led to the fundamental re-conceptualization of what it means to engage in social interactions. As the COO of Facebook, Sheryl Sandberg, told NPR on April 5, 2018, the presence of commercial internet in the late 1980s brought forth “the ability for people all around the world to connect, and...have social experiences.”¹²

A consequence of the increased globalization is a greater dispersion of social networks. Prior to the invention of the telegraph machine in 1844¹³ and the construction of the transcontinental railroad in 1869,¹⁴ it was more difficult to travel away from home and remain in contact with family members. Therefore, family, friends, and professional connections were typically within one geographical hub. In comparison, as a 22-year-old, I have now lived in three states and studied abroad in five countries. I have family members, friends, and professional connections spanning the globe. Yet these thousands of personal connections have not become forgotten due to lack of physical proximity. Aided by social media platforms such as Facebook, Instagram, and LinkedIn, I know the name of my high school teammates new dog or that a friend from kindergarten just transferred colleges. Despite not seeing these individuals for years, they are still a part of my social network. This is not a unique experience. Therefore, we have an increased sense of who makes up our social networks, which is directly connected to the reconceptualization of what it means to have a social interaction.

⁹ Michael D. Ward, Katherine Stovel, and Audry Sacks. “Network Analysis and Political Science.” *The Annual Review of Political Science* 14 (2011). 245-264. doi: 10.1146/annurev.polisci.12.040907.115949.

¹⁰ Ibid.

¹¹ Mark Zuckerberg’s Facebook page.

¹² Steve Inskeep, "Full Transcript: Facebook COO Sheryl Sandberg On Protecting User Data." NPR, April 06, 2018, Accessed April 07, 2018, <https://www.npr.org/2018/04/05/599761391/full-transcript-facebook-coo-sheryl-sandberg-on-protecting-user-data>.

¹³ "Invention of the Telegraph - Samuel F. B. Morse Papers at the Library of Congress, 1793-1919," The Library of Congress, Accessed April 13, 2018, <https://www.loc.gov/collections/samuel-morse-papers/articles-and-essays/invention-of-the-telegraph/>.

Prior to technological advancements, such as the phones, the internet, and email, social contact was defined as face-to-face contact. However, with the influx of communication tools like text messages and video conferencing, individuals have begun to conflate face-to-face interactions with communication conducted through a technological device. This conflation makes it possible to consider passive exposure to people's lives –i.e. through status updates on Facebook or pictures on Instagram– a kind of social interaction. The result is that now when my mother asks about what so and so friend from high school is doing after graduation, I can provide the answer without having actually spoken to the person for years.

Since people have re-conceptualized the meaning of a social interaction and can gain the same information from social media as they would from face-to-face interactions, at least a portion of the social persuasion that stemmed from face-to-face interactions can be invoked through social media. A Facebook friend 'liking' a news article, is now equated with that friend bringing up the article over dinner. The important distinction is that we have lost the opportunity for nuance – both with body cues to signal sarcasm and the chance for extended conversation, which may highlight that the friend likes specific elements of the article but not others. Thus, with the ability for people all around the world to connect, comes the opportunity for people all around the world to persuade others. However, their tools of expression are less agile than a human interaction. This means that even if the opportunities to misuse social media platforms through the proliferation of "fake news," or "alternative facts," the power of social persuasion has still been brought to your fingertips in the form of 'like,' 'share,' and 'comment' buttons.

Hypotheses:

H₁: As the ratio of social cues increases (# of likes by 'friends' vs. # of likes by 'others') users' tendency to conform to the social cues increases.

H₂: As users' strength of previously held beliefs on an issue matter increases, users' tendency to conform to the social cues decreases.

This paper will demonstrate that social cues by close ties (# of likes by 'friends' verses # of likes by 'others') does not have an effect on altering users' opinion on hot button political topics.

Experiment Methodology:

Sample

To investigate whether exposure to an individual's close ties' media consumption (IV), affect that individual's political opinions (DV), I conducted a randomized controlled trial. The experiment was administered through a 40-question survey designed using Qualtrics survey platform. 225 subjects were recruited through Amazon Mechanical Turk (MTurk). During recruitment, participants were told they would take part in a "research survey about politics in the United States." Subjects were paid a nominal fee of \$0.50 for their time, on average about 10 minutes. The sample consisted of 201 viable subjects, after non-Facebook users or users that had never seen a news article on Facebook were removed from the sample. 54.5% of the respondents were male, 85% white, and 39.5% registered Democrat. A full copy of the survey can be found in Appendix B.

Procedure

All respondents were asked two background questions about their Facebook use. If the respondents indicated that they did not have a Facebook or had never seen a news article on Facebook, the experiment was not completed. When they answered in the affirmative, the experiment began. Participants were then shown an informational slide, alerting them to “the 3 main ways users can react to news articles on Facebook,” followed by three short paragraphs on the ‘like,’ ‘comment,’ and ‘share,’ buttons respectively. This slide was intended to cue participants to pay attention to the ‘like’ feature below each article without revealing the experiment’s specific methodology. Respondents were then asked to rank five political topics in order of importance and how much they knew about the issue (1 = most important/ background knowledge, 5 = least important/ background knowledge). The five political topics –immigration, healthcare, gun control, the economy, and race relations/ racism– were selected based upon Pew Research Center’s “Most Important Issues Facing the U.S. Today.”¹⁵ ¹⁶ These topics were not referred to as “issues,” in order to negate partisan reactions.

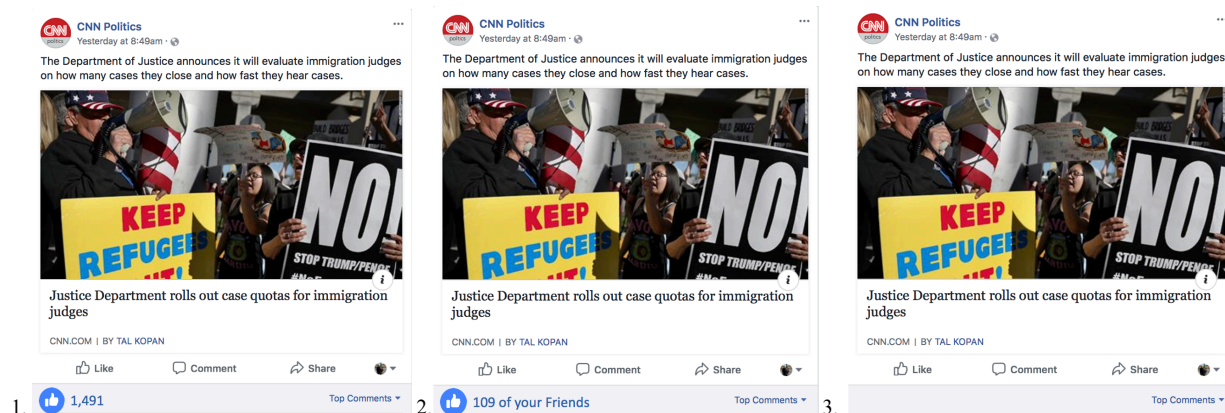


Figure 1 | Example of the CNN Facebook article on immigration with the 2 treatments, and control group. Image 1 was shown to respondents in treatment group 1 (n=68) ‘likes by non-friends’ with a range of 1,491 to 1,498 likes. Image 2 was shown to respondents in treatment group 2 ‘likes by friends,’ group (n = 67) with a range of 109-116 likes. Image 3 was shown to respondents in the control group (n = 66). The full set of CNN Facebook articles covering immigration, healthcare, gun control, the economy, and race relations/ racism can be found in Appendix A.

Respondents were then shown three screen shots of recent CNN articles published on Facebook, covering the three topics that they ranked as first, third, and fifth in order of importance (Figure 1). I chose articles from CNN’s Politics Facebook page because a study conducted by Pew

¹⁵ Martin Armstrong and Felix Richter, "Infographic: The Most Important Issues Facing the U.S. Today," Statista Infographics, July 14, 2017, Accessed April 04, 2018., <https://www.statista.com/chart/10278/the-most-important-issues-facing-the-us-today/>.

¹⁶ "Most Popular Political Issues of 2018." ISideWith. April 4, 2018. Accessed April 04, 2018. <https://www.isidewith.com/polls/popular>.

Research Center found that CNN is the most widely trusted news organization within the United States.¹⁷

Any CNN article featuring President Trump, or his immediate staff, was not used in the experiment, in order to prevent partisan bias. Subjects were randomly assigned to 3 treatment groups: 1) 'likes by non-friends,' 2) 'likes by friends,' and the control group. The 'likes by non-friends' treatment (n = 68) was shown articles with a range of 1,491 to 1,498 likes. CNN articles published on Facebook receive an average of 4,497 engagements (likes, shares, and comments); assuming there is an equal ratio of likes, shares, and comments, the average number of Facebook 'likes' per CNN article is 1,495.¹⁸ The number of likes for each article is varied within the treatment from 1,491 to 1,498 so that respondent would not detect the photograph manipulations and experiment methodology.

The 'likes by friends,' treatment (n = 67) was shown articles with a range of 109-116 likes "by your friends." The average Facebook user has 338 friends.¹⁹ When determining positive cuing (the starting ratio of likes to dislikes that invoked a change in voter opinion) Pierce *et al.* used a 3:1 ratio of likes to dislikes.²⁰ Although dislikes were not displayed on these CNN Facebook articles, I used the same 3:1 ratio to determine the number of friends that have liked each article. One-third of 338, is 112 likes. As with the 'likes by non-friends' group, the number of likes ranged from 109 – 116, in order to prevent respondents from detecting the photograph manipulations and experiment methodology. The control group (n = 66) was not presented with any Facebook likes.

After each CNN article, subjects were asked if the previous article headline had confirmed what they already thought about the given political topic. This question was specifically intended to inform my second hypothesis, that as users' strength of previously held beliefs on an issue matter increases, users' tendency to conform to the social cues decreases. All respondents were then asked to reorder the same five political topics in order of importance and how much they knew about the issue (1 = most important/ background knowledge, 5 = most important/ background knowledge). Lastly, I replicated Goldsmith *et al.*'s battery of questions that measure an individual's tendency to conform (DV). "*Tendency to conform* was measured through seven bipolar adjectives (compliant-defiant, resistant-acquiescent, agreeing-disagreeing, inflexible-adapting, cooperative-uncooperative, opposing-accommodating, differing-concurring) presented

¹⁷ Amy Mitchell, "Which News Organization Is the Most Trusted? The Answer Is Complicated," Pew Research Center, October 30, 2014, Accessed April 04, 2018.

<http://www.pewresearch.org/fact-tank/2014/10/30/which-news-organization-is-the-most-trusted-the-answer-is-complicated/>.

¹⁸ Liam Corcoran, "How Political News Boosted CNN's Facebook Engagement," NewsWhip, February 21, 2018, Accessed April 09, 2018, <http://www.newswhip.com/2017/03/inside-cnns-facebook-performance/>.

¹⁹ "47 Incredible Facebook Statistics and Facts," Brandwatch, February 13, 2018, Accessed April 09, 2018, <https://www.brandwatch.com/blog/47-facebook-statistics/>.

²⁰ Douglas R. Pierce, David P. Redlawsk, William W. Cohen. "Social Influences on Online Political Information Search and Evaluation." *Political Behavior* 39 (2017). 651-673. doi: 10.1007/s11109-016-9374-4, 659-660.

in a 7-point semantic differential format.²¹ Lastly, respondents answered several demographic questions.

Results and Analysis:

Results and analysis pertaining to H₁: as the ratio of social cues increases (# of likes by 'friends' vs. # of likes by 'others') users' tendency to conform to the social cues increases

To investigate my first hypothesis, I compared each respondent's first ranking of the 5 political topics (1 = most important, 5 = least important) to the subject's ranking after being exposed to the 3 screen shots of recent CNN articles published on Facebook, covering the topics that the respondent ranked as first, third, and fifth topic. If the second ranking was different in any way from the first (i.e. gun control was first ranked number five and then ranked number four), the response was marked as "changed." If the ranking did not change at all, the response was marked as "no change." I made no distinction between a respondent that only changed the order of two political topics versus all five political topics.

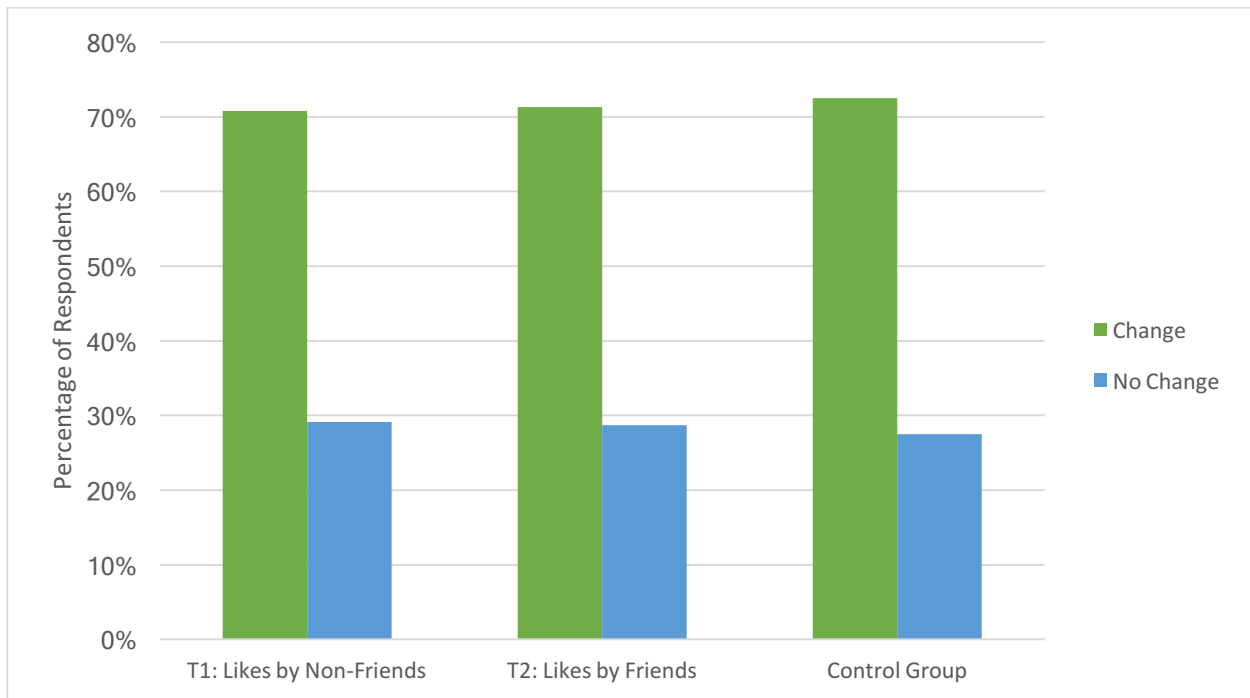


Figure 2 | Percentage of survey respondents that changed the rank order of most important political topics after being shown 3 screen shots of recent CNN articles published on Facebook, by the two treatments and the control group (T1: 1,491-1,498 likes by non-friends, T2:109 – 116, likes by friends, and the control group, no likes).

Figure 2 presents the experimental results indicating the causal effect of the number of Facebook likes on an individual's change in opinion about political topics. I determined the percentage of respondents that changed their rank orders versus those that did not change in each of the

²¹ Ronald E. Goldsmith, Ronald A. Clarke, and Barbara A. Lafferty, "Tendency to Conform: A New Measure and Its Relationship to Psychological Reactance," *Psychological Reports* 96, (2005):591-594, <https://doi.org/10.2466/pr0.96.3.591-594>.

treatment groups. This calculation yielded nearly no distinction between the treatments, with 71% of treatment 1, 71% of treatment 2, and 73% of the control group changing their rank order. The lack of distinction between the treatment groups indicates that the number of Facebook ‘likes,’ made by either strangers or friends, associated with a news article published on Facebook does not influence the user’s opinion on political topics. This means that one of the unique features of Facebook’s platform –the ability to ‘like’ other people’s or organization’s content– does not influence public opinion on political topics.

In July 2011, comScore, a media measurement and analytics company, partnered with Facebook to produce a white paper titled “The Power of ‘Like:’ How Brands Reach (and Influence) Fans Through Social-Media Marketing,” which was later republished in the *Journal of Advertising Research*.²² The paper argued that the value of an individual who has liked a brand’s Facebook page can be assessed in three primary ways: 1) “increasing the depth of engagement and loyalty among fans [defined as users that had liked the brand’s Facebook page]; 2) generating incremental purchase behavior, and 3) leveraging the ability to influence friends of fans.”²³ This third way directly informed comScore and Facebook’s conclusion that, “brands can realize significant untapped benefits by understanding and focusing on reaching the friends of their fans.”²⁴

ComScore and Facebook’s findings rely on the assumption that a Facebook user is more likely to respond positively to a product’s Facebook content, if the user sees that his/her friends have liked the product’s Facebook page or advertisements. Although my research focuses on change of public opinion on political topics, rather than advertisement metrics, my findings isolated the ‘like’ feature as unable to influence public opinion. Meaning, comScore and Facebook’s study is bolstering the incorrect assumption that Facebook ‘likes’ are an effective influencing factor that leads to change in opinion or behavior – such as purchasing decisions.

Other marketing research such as, John *et al.*’s article “Does ‘Liking’ Lead to Loving?”, contradict comScore and Facebook’s study, asserting that ‘liking’ “is simply a symptom of being fond of a brand,” rather than an effective method to change a consumer’s opinions about the brand.²⁵ “Brand attitudes and purchasing decisions are predicted by consumers’ preexisting fondness for brands, rather than if or when a consumer ‘likes’ brands on social media.”²⁶ These findings can be applied to my research because a political topic is like a brand and a consumer’s decision to purchase is similar to a user’s change in opinion. A Facebook user’s opinion is not influenced by the number of likes associated with a news article on Facebook, just as consumer is not influenced by the number of likes a brand’s Facebook page has. However, these findings

²² Andrew Lipsman *et al.*, “The Power of ‘Like’: How Brands Reach (and Influence) Fans Through Social-Media Marketing,” *Journal of Advertising Research*, (2012): 1
doi: 10.2501/JAR-52-1-040-052.

²³ Ibid.

²⁴ Ibid.

²⁵ Leslie K. John *et al.*, “Does ‘Liking’ Lead to Loving? The Impact of Joining a Brand’s Social Network on Marketing Outcomes,” *Journal of Marketing Research* 54, (2017):
<https://doi.org/10.1509/jmr.14.0237>.

²⁶ Ibid.

both within the fields of Political Science and Marketing research, directly contradict the study comScore and Facebook published proclaiming the financial benefits of cultivating as many Facebook ‘likes’ as possible.

Results and analysis pertaining to H₂: as users’ strength of previously held beliefs on an issue matter increases, users’ tendency to conform to the social cues decrease

To explore my second hypothesis, I compared each subject’s first ranking of 3 of the 5 political topics in order of importance (1 = most important, 5 = least important) to the subject’s ranking after being exposed to the 3 screen shots of recent CNN articles published on Facebook. I chose to remove the article screen shots that discussed the economy and race relations/ racism from this portion of the analysis because survey respondents appeared to classify those topics into a different kind of issue area than immigration, healthcare, and gun control (Table 1). The number of respondents that ranked each topic as the most and least important in the first rank order question. The economy received the greatest percentage of most important ranks and the lowest number of least important ranks, while race relations/ racism received the lowest percentage of most important ranks and the greatest number of least important ranks. In contrast, the number of respondents ranking healthcare, gun control, and immigration as the most and least important were closer together in range and more varied between first, second, and third. This indicates that respondents viewed immigration, gun control, and healthcare as similar issues, while the economy and race relations/ racism appeared distinct from the other three. I therefore removed respondents who ranked the economy or race relations/ racism as most or least important from this portion of the analysis so as to avoid inaccurately conflating the unique aspects of these two with the other three topics.

Table 1| The number of respondents that ranked each topic as the most and least important in the first rank order question. The economy (highlighted in green) received the greatest number of most important ranks and the lowest number of least important ranks, while race relations/ racism (highlighted in blue) received the lowest number of most important ranks and the greatest number of least important ranks.

Ranked <i>Most</i> Important Topic		Ranked <i>Least</i> Important Topic	
Topic	% of Respondents	Topic	% of Respondents
Economy	39 %	Race relations/ Racism	31%
Healthcare	26 %	Immigration	28 %
Gun control	17 %	Gun control	20 %
Immigration	12 %	Healthcare	13 %
Race relations/ Racism	6%	Economy	8%

As with the analysis for the first hypothesis, if the second ranking was different in any way from the first (ex. Gun control was first ranked number 5 and then ranked number 4), the response was marked as “changed.” If the ranking did not change at all, the response was marked as “no change.”

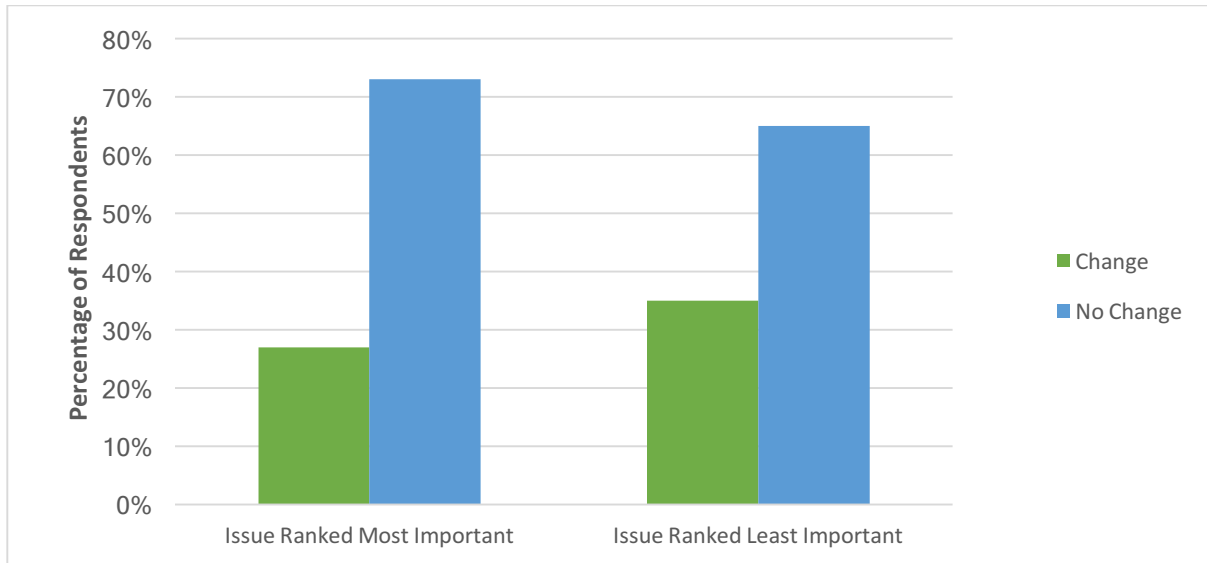


Figure 3 | Percentage of survey respondents that changed the rank order of the most and least important political topics (immigration, health care, and gun control) after being shown 3 screen shots of recent CNN articles published on Facebook.

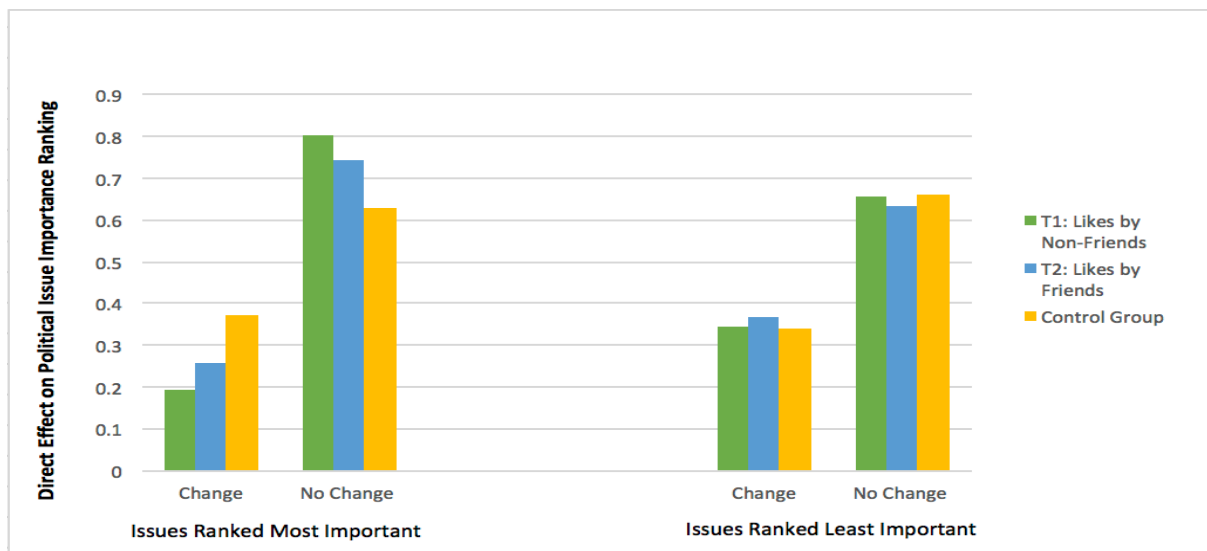


Figure 4 | Percentage of survey respondents that changed the rank order of the most (ranked #1) and least (ranked #5) important political topics (immigration, health care, and gun control) after being shown 3 screen shots of recent CNN articles published on Facebook, by the two treatments and the control group (T1: 1,491-1,498 likes by non-friends, T2:109 – 116, likes by friends, and the control group, no likes).

Figure 3 presents the experimental results indicating the causal effect of the self-reported importance of a political topic on an individual’s likelihood to change opinion. Based upon the results there is a slight increase in the percent of respondents that changed their opinion on the topic that was ranked least important (35%), compared to the topic that was ranked most important (27%) (Figure 3). This finding supports my second hypothesis, that as users’ strength of previously held beliefs on an issue matter increases, users’ tendency to conform to the social cues decreases. Additionally, this finding aligns with motivated reasoning, where readers tend to retain information that reaffirms previously held beliefs, rather than information that challenges

their beliefs. If respondents ranked the issue as least important to them, it can be assumed that they did not know a great deal about the issue. Therefore, respondents were not simply reading to reinforce previously held beliefs, because they most likely did not have firmly solidified opinions. Instead, the various elements of the CNN news article screen shot (the title of the article, the picture, and the number of 'likes' associated with the article) were more likely to invoke a change in opinion.

To further investigate this finding, I separated the 'change' and 'no change' categories by the two treatments and control group. Figure 4 presents this additional separation. When I divided the percentage of change by the two treatments and the control group, the treatments did not appear to have a significant effect. This reconfirms the findings represented in Figure 2, that the number of likes associated with a CNN article published on Facebook does not influence users' opinions on political topics.

The Power of Facebook:

On April 16, 2018 CNN.com was visited 580.87 million times and readers spent an average of 3 minutes and 49 seconds on the site.²⁷ In comparison, Facebook.com was logged onto 29.87 billion times and users spent an average of 13 minutes and 25 seconds on the platform.²⁸ My findings, strengthened by research in advertising and marketing, indicate that the unique features of Facebook's platform, such as the like button, do not directly influence public opinion. Meaning, the only difference between CNN articles published on Facebook and those published on CNN.com is 29.29 billion more site visits and an additional 10 minutes and 36 seconds. Users spend more time on Facebook than any other social media platform because of its capacity to compile updates on friends' and family members' lives, funny video clips, personality quizzes, and news articles into an endless scrolling page, known as a newsfeed.²⁹ Facebook has the power to influence because it is used by billions. People wake up, log on, scroll through, and 'like' a post without much consideration.

Facebook users rely on the 'like' button as a quick and easy way to express virtual congratulations or agreement with a friend. Yet, we have all been paralyzed with the cursor hovering over the like button beneath a photo of an ex-boyfriend or a slightly crude joke. "Will people notice I liked this? What will my friends think?" are all too frequent questions running through many user's minds. However, it appears these questions are not necessary, because the only entity noticing, recording, and using the information gained from our likes is Facebook itself. And of course, the unknown number of "malicious actors" that "took advantage of search tools on [Facebook's] platform, making it possible for them to discover the identities and collect information on most of its 2 billion users worldwide."³⁰

²⁷"CNN," SimilarWeb, accessed April 15, 2017. <https://www.similarweb.com/website/cnn.com>

²⁸"Facebook," SimilarWeb, accessed April 15, 2017.

<https://www.similarweb.com/website/facebook.com>

²⁹ Ibid.

³⁰ Craig Timberg, Tony Romm, and Elizabeth Dwoskin. "The Switch Facebook: 'Malicious Actors' Used Its Tools to Discover Identities and Collect Data on a Massive Global Scale." The Washington Post. April 04, 2018. Accessed April 16, 2018. <https://www.washingtonpost.com/>.

Prior to the Cambridge Analytica data breach, the majority of users were not aware that Facebook sells advertisements to companies with the promise of targeting users based on their likes, shares, and comments. After reports broke about the data breach, Mark Zuckerberg testified before Congress for 10 hours, answering over 600 asked by Senators and Congress people. During the hearings, Representative Michael Burgess from Texas asked: “Can the average layperson look at the terms and conditions and make the evaluation: Is this strong enough protection for me to enter into this arrangement?” Zuckerberg responded, “A lot of people probably just accept terms of service without taking the time to read through it.”³¹ The terms and conditions document that Representative Burgess referenced is six pages and 3,487 words long, roughly half the length of this paper.³² The language is difficult and convoluted.

It is simply unreasonable to expect the average layperson to determine the terms of the user agreement, or navigate the confusing privacy setting menus. Meaning, what we like, comment, and share is most likely being tracked by Facebook and sold to thousands of third party applications and companies that Facebook holds contracts with for advertisement revenue. Thus the question should no longer be centered around whether Facebook likes can influence public opinion. Rather, future research should focus on the consequence of each like: where is that user’s preference stored, who has access to that information, and most importantly how can seemingly endless data about 2 billion users worldwide be used to, exploit, manipulate or harm us?

³¹“Lawmakers Push Zuckerberg On Security, Diversity, Drug Sales on Facebook,” NPR, accessed April 16, 2017. <https://www.npr.org/sections/thetwo-way/2018/04/11/599590470/mark-zuckerberg-is-back-before-congress-for-a-second-day-of-testimony>.

³²“Statement of Rights and Responsibilities,” Facebook, accessed April 16, 2017, <https://www.facebook.com/terms.php>.

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Appendix A

The screen shots of recent CNN Facebook articles covering immigration, healthcare, gun control, the economy, and race relations/ racism that were used in the experiment. Treatment group 1: (n=68) ‘likes by non-friends’ with a range of 1,491 to 1,498 likes. Treatment group 2: ‘likes by friends,’ group (n = 67) was shown articles with a range of 109-116 likes. Control group: (n = 66).

Immigration

CNN Politics
Yesterday at 8:49am · 🌐

The Department of Justice announces it will evaluate immigration judges on how many cases they close and how fast they hear cases.

Justice Department rolls out case quotas for immigration judges

CNN.COM | BY TAL KOPAN

Like Comment Share

1,491 Top Comments

CNN Politics
Yesterday at 8:49am · 🌐

The Department of Justice announces it will evaluate immigration judges on how many cases they close and how fast they hear cases.

Justice Department rolls out case quotas for immigration judges

CNN.COM | BY TAL KOPAN

Like Comment Share

109 of your Friends Top Comments

CNN Politics
Yesterday at 8:49am · 🌐

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Justice Department rolls out case quotas for immigration judges

CNN.COM | BY TAL KOPAN

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Healthcare



CNN Politics

Yesterday at 7:02am · 🌐

Patients who visit emergency rooms are getting hit with sky-high bills. Spending on an ER visit in the US rose to \$1,917, on average, in 2016, up more than 31% from four years earlier.



\$12,000 for a bee sting? Emergency room visits are getting even pricier

MONEY.CNN.COM

Like Comment Share

1,495

Top Comments



CNN Politics

Yesterday at 7:02am · 🌐

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MONEY.CNN.COM

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112 of your Friends

Top Comments

Gun control

CNN Politics
March 27 at 4:18pm · 🌐

"Measures passed in Florida after the Marjory Stoneman Douglas High School shooting seem to have no prospects at the national level," CNN's Z. Byron Wolf writes.



There's not a 'snowflake's chance in hell' of repealing the Second Amendment

CNN.COM | BY Z. BYRON WOLF

Like Comment Share

1,496 Top Comments

CNN Politics
March 27 at 4:18pm · 🌐

"Measures passed in Florida after the Marjory Stoneman Douglas High School shooting seem to have no prospects at the national level," CNN's Z. Byron Wolf writes.



There's not a 'snowflake's chance in hell' of repealing the Second Amendment

CNN.COM | BY Z. BYRON WOLF

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CNN.COM | BY Z. BYRON WOLF

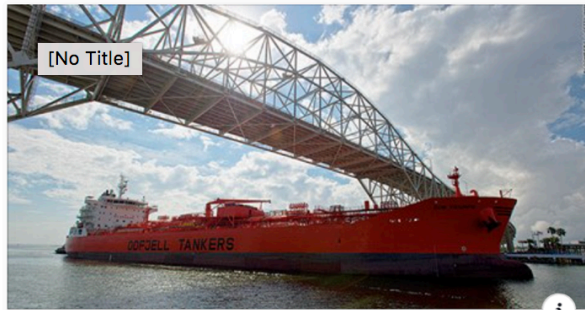
Like Comment Share

116 of your Friends Top Comments

Economy

CNN Politics
March 29 at 6:48am · 🌐

Despite the fanfare surrounding **President Donald J. Trump's** 53-page infrastructure plan, the President still needs Congress to draft legislation and appropriate money — and so far there appears to be little momentum to do so.



The mounting infrastructure crisis Washington isn't fixing fast enough

MONEY.CNN.COM

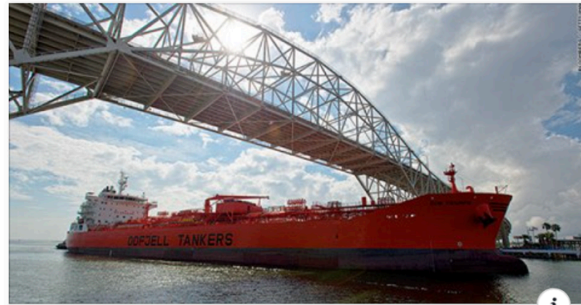
👍 Like 💬 Comment ➦ Share 🌐

👍 1,498

Top Comments ▾

CNN Politics
March 29 at 6:48am · 🌐

Despite the fanfare surrounding **President Donald J. Trump's** 53-page infrastructure plan, the President still needs Congress to draft legislation and appropriate money — and so far there appears to be little momentum to do so.



The mounting infrastructure crisis Washington isn't fixing fast enough

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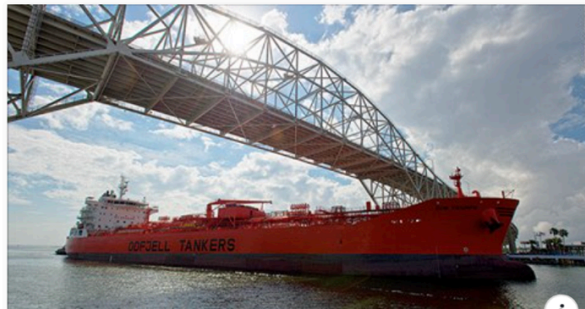
👍 Like 💬 Comment ➦ Share 🌐

👍 111 of your Friends

Top Comments ▾

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The mounting infrastructure crisis Washington isn't fixing fast enough

MONEY.CNN.COM

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Top Comments ▾

Race relations/ racism



"The significance of this occurring as our country continues to struggle with its history of white supremacy also cannot be ignored," the college's student government said



Confederate flag posters, with cotton stems attached, is found on American University campus

CNN.COM



1.1K Comments 1.1K Shares

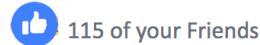


"The significance of this occurring as our country continues to struggle with its history of white supremacy also cannot be ignored," the college's student government said



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CNN.COM



1.1K Comments 1.1K Shares



"The significance of this occurring as our country continues to struggle with its history of white supremacy also cannot be ignored," the college's student government said



Confederate flag posters, with cotton stems attached, is found on American University campus

CNN.COM

1.1K Comments 1.1K Shares

Appendix B

This is the survey that all participants in the experiment received and answered.

Cover letter

We would like to invite you to take part in a research survey about politics in the United States. Please know there are no correct answers to these questions. We are interested in determining what the public thinks about important issues.

Your participation will require approximately ten minutes and is completed online at your computer. You will be paid according to your agreement with Mechanical Turk.

All of your responses are **anonymous** and there are protections to ensure your privacy. The Federal Certificate of Confidentiality makes it illegal for anyone to see or find out what your answers are in this study. Loved ones, co-workers, or anyone else can never see your answers. They are **strictly confidential**.

Thank you again for helping us with our undergraduate research on understanding what the American public thinks.

PAGE BREAK

Sorting out non-Facebook users and non-Facebook news consumers:

Instructions: We're going to ask you a few questions about Facebook.

1. Do you have a Facebook account?
 - Yes
 - No

If the respondent selects "no" the survey will end.

2. Have you ever seen a link to a news article on your Facebook news feed?
 - Yes
 - No

If the respondent selects "no" the survey will end.

PAGE BREAK

Importance of hot button political topics ³³

Instructions: First we are going to ask you a few questions about current political topics.

The order in which the topics appear will be randomized for each respondent to minimize priming.

³³ Martin Armstrong and Felix Richter. "Infographic: The Most Important Issues Facing The U.S. Today." Statista Infographics. July 14, 2017. Accessed April 04, 2018.

<https://www.statista.com/chart/10278/the-most-important-issues-facing-the-us-today/>.

"Most Popular Political Issues of 2018." ISideWith. April 4, 2018. Accessed April 04, 2018.

<https://www.isidewith.com/polls/popular>.

1. Please rank these 5 topics in order of **importance** to you.
1 = MOST Important
5 = LEAST Important
 - Immigration
 - Healthcare
 - Gun Control
 - Economy
 - Race relations/ Racism
2. Please rank these 5 topics in order of **how much you know** about them.
1 = MOST information known
5 = LEAST information known
 - Immigration
 - Healthcare
 - Gun Control
 - Economy
 - Race relations/ Racism

PAGE BREAK

Facebook Functions

Just for your reference, here are the 3 main ways users can react to news articles on Facebook.

Like Button:



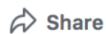
Once the Like Button is clicked by a user, the designated content appears in the News Feeds of that user's friends, and the button also displays the number of other users who have liked the content, including a full or partial list of those users.

Comment Button:



The Comments Button lets users write comment below the content. People can choose to share their comment activity with their friends, friends of their friends, or everyone.

Share Button:



The Share Button allows users to share the content to their Facebook timeline, to a friend's timeline or in a group.

Article Screen Shots

The survey then showed CNN articles published on Facebook covering all 5 different political topics. Qualtrics will time how long each respondent looks at the screenshot.

*Three sets of manipulations:*³⁴

³⁴ Douglas R. Pierce, David P. Redlawsk, William W. Cohen. "Social Influences on Online

Treatment 1: Positive cues from “others” – the news article with “1,495³⁵ people liked this article”

Treatment 2: Positive cues from “friends” – the news article with “112³⁶ of your friends liked this article”

Control group: No cues – the news article, with no other information present

See Appendix A for all screen shots.

PAGE BREAK

Importance of hot button political topic³⁷

Instructions: First we are going to ask you a few questions about current political topics.

The order in which the issues appear are randomized for each respondent to minimize priming.

1. Please rank these 5 topics in order of **importance** to you.
1 = MOST Important
5 = LEAST Important
 - Immigration
 - Healthcare
 - Gun Control
 - Economy
 - Race relations/ Racism

2. Please rank these 5 topics in order of **how much you know** about them.
1 = MOST information known
5 = LEAST information known
 - Immigration
 - Healthcare
 - Gun Control
 - Economy
 - Race relations/ Racism

PAGE BREAK

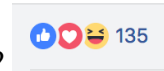
Political Information Search and Evaluation.” *Political Behavior* 39 (2017). 651-673. doi: 10.1007/s11109-016-9374-4, 659-660.

³⁵ The average number Facebook engagements (likes, shares, comments) per CNN article in Febuary 2017 was 4,487 (<http://www.newswhip.com/2017/03/inside-cnns-facebook-performance/>). Assuming there was an equal ratio of likes, shares, comments, the average number of Facebook “likes” per CNN article is 1,495.

³⁶ The average number of Facebook friends is 338 (<https://www.brandwatch.com/blog/47-facebook-statistics/>). I chose 112 likes by friends because that means for an average facebook user roughly 1/3 of their friends would have liked the article, which mimics the 3:1 ratio Pierce et al. used in “Social Influences on Online Political Information Search and Evaluation”

³⁷ Martin Armstrong and Felix Richter. & "Most Popular Political Issues of 2018."

1. Did you notice this feature in the Facebook posts you just saw?
 - a. Yes
 - b. No



PAGE BREAK

Tendency to conform measurement:

Directions: Next we are going to ask you a few questions about yourself. Please indicate how strongly you agree or disagree with each statement.

These seven bipolar adjectives will be presented in a 7-point semantic differential format.³⁸ (Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree)

1. Compliant – Defiant
2. Resistant – Acquiescent
3. Agreeing – Disagreeing
4. Inflexible – Adapting
5. Cooperative – Uncooperative
6. Opposing – Accommodating
7. Differing – Concurring

PAGE BREAK

General Questions:

Lastly we are going to ask you a few questions about yourself.

1. What is the highest level of education you have completed?
 - Did not graduate from high school
 - High school graduate
 - Some college, but no degree (yet)
 - 2- year college degree
 - 4- year college degree
 - Postgraduate degree (MA, MBA, MD, JD, PhD, etc.)

2. What racial or ethnic group best describes you?
 - White
 - Black or African-American
 - Hispanic or Latino
 - Asian or Asian-American
 - Native American
 - Middle Eastern

³⁸ Ronald E. Goldsmith, Ronald A. Clarke, and Barbara A. Lafferty. “Tendency to Conform: A New Measure and Its Relationship to Psychological Reactance.” *Psychological Reports* 96, (2005). 591-594. <https://doi.org/10.2466/pr0.96.3.591-594>, 592.

- Mixed Race
- Other (open textbox)

3. How old are you?

- 18-24
- 24-39
- 40-60
- 60 plus

4. With which party, if any, are you registered?

- I am not registered
- No party
- Independent
- Democratic Party
- Republican Party

5. Please indicate your gender

- Female
- Male
- Nonconforming