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Popping Politics: Testing Models of Polarized Echo Chambers on Social Media

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Abstract

Increased political polarization in the United States is often attributed to the rise of ideologically uniform communities on social media platforms. These polarized communities are often modeled as "echo chambers," which are defined as insular groups of users who only receive information from one side of the political spectrum. Leading scholars suggest increasing the amount of cross-partisan information that users receive to "pop the bubble" and depolarize these spaces. However, an examination of the research on online echo chambers reveals that even this solution does not always result in depolarization. This study seeks to challenge the assumption that polarized communities behave according to the echo chamber model by surveying partisans on their consumption of political information on social media. This study found that the majority of polarized individuals are likely not in entirely insular communities and do receive some information from both sides of the political spectrum. Furthermore, it seems that the diffusion of cross-partisan information does not produce changes in political views or the polarization level among partisans. Despite this data, many partisans believed other individuals were in echo chambers, displaying a perception gap between the actual and perceived amount of people in echo chambers and implying high levels of affective polarization. Finally, the model this paper advances seeks to advise future research on solutions to polarized communities.

Introduction

A common issue raised in American politics is that voters have become increasingly polarized in recent years. Political polarization is known to diminish democracy, as those with strong ideological commitments to certain parties or policies are more likely to vote for authoritarian leaders (Svolik, 2019). Partisans (defined in this paper as people who hold strong

ideological and political positions, rather than membership to a political party) are often said to be in "echo chambers," insular online communities in which an individual either only receives congenial political information or communicates online about political information solely with others who share their views.

This study seeks to test the echo chamber model by addressing the following questions:

1. Are the majority of partisans in echo chambers? More specifically, do most partisans report they never view cross-partisan information on their social media feeds?

2. Is inclusion within an echo chamber necessarily connected with high levels of polarization?

3. What is the American public's perception of the prevalence of echo chambers in the United States?

A survey was formulated to investigate these questions. The results of the survey are aggregated and analyzed below. A separate literature review was conducted and will contextualize American polarization and the political echo chambers assessed in this paper. The review contains results from experiments testing the most commonly advanced solution to echo chambers: spreading cross-partisan information across insular political spaces online.

The primary aim of this study is to discover the most robust model for how polarized communities operate on social media. If the echo chamber model continues to effectively portray the experiences of individuals within online polarized communities, solutions such as increasing cross-partisan information on partisan social media feeds may successfully reduce polarization. However, if echo chambers do not appear to accurately represent the ways in which polarized communities operate, alternative frameworks must be explored to determine a successful model.

Once an accurate model is established, the most effective solutions to polarization on social media can be designed and tested.

Literature Review

Many prior studies support the existence of polarized communities on social media. Barberá et al. (2015) revealed that on Twitter, echo chambers often form when discussion is centered around a political topic rather than a nonpolitical one. More specifically, Jiang et al. (2021) discovered evidence of echo chambers present on Twitter during the COVID-19 pandemic. While the virus was not explicitly a political issue, the pandemic was politicized because of controversies about preventative measures, including mask and vaccine mandates, school closures, and business restrictions. Separately, Cinelli et al. (2021) explored four large social media platforms and found evidence of polarized echo chambers on Facebook and Twitter. While this is only half of the platforms the study encompassed, Facebook and Twitter are both extremely large platforms with millions of participants. Baumgaertner (2014) takes on a theoretical approach. He simulated echo chambers on the digital modeling platform NetLogo, proving that the phenomenon is both possible and is able to be modeled. Sunstein (2018) demonstrates that when placed in communities with like-minded people, individuals' political beliefs will grow more extreme.

One major factor that contributes to the development of echo chambers is selective exposure, which is the tendency of individuals to only choose to view information with which they agree. To investigate selective exposure, Yeo et al. (2015) designed a study in which people were given ideologically slanted news options on an unfamiliar topic. The study found that when given no prior information on the topic, people were inclined to select news sources that aligned

with their partisan beliefs, demonstrating that people will often choose information sources that reflect their own beliefs. Similarly, Morelock and Narita (2021) provide a psychological analysis of people within echo chambers, concluding that people may voluntarily choose to be in echo chambers because they gain access to people and information that align with their beliefs. This selective exposure is motivated by human psychology. Bessi, A., & Quattrociocchi, W. (2015) posit that "confirmation bias," the idea that individuals will favor information that supports their prior beliefs, largely motivates selective exposure on social media. Similarly, in his psychological review of echo chambers, Nguyen (2018) asserts that "echo chambers" are psychological in nature: members actively discredit counter-attitudinal information, thus only accepting congenial views as relevant information.

Another contributor to echo chambers is social media algorithms. Pariser (2011) reveals this by delving into the history of social media algorithms. He asserts that the main motivation behind the creation and implementation of these algorithms was the profit and business incentive of large social media companies and that the companies subsequently designed algorithms to provide congenial content to users to ensure the popularity of their platforms.

However, echo chambers may be less pervasive than scholars first anticipated because of observations about media diets. First, Garrett (2009) found that partisans are not averse to counter-attitudinal information and will still view cross-partisan information online. In addition, Guess (2021) investigated the media diets of Democrats and Republicans and found that there was a large amount of overlap in media consumption in both 2015 and 2016; his findings suggest that either most people do not self-select primarily congenial political information or that social media platforms allow more overlap than other scholars assume. Similarly to Garrett, however,

Guess's data was collected several years ago and may not accurately represent current partisan media diets.

Currin et al. (2022) offer one potential solution for this issue: testing a mechanism labeled as "random dynamical nudges," a variable that showed agents a random variety of other agents' opinions, which were aimed at diffusing cross-partisan information in a simulated environment. Their study concluded that exposure to diverse views via random dynamical nudges could be a reliable form of depolarization. Similarly, NPR released an overview of studies testing political polarization on Facebook (Jingnan and Bond, 2023) and demonstrated that altering the Facebook algorithm so that users receive less like-minded information reduced the number of people that were within political echo chambers or receiving primarily politically slanted information. However, this method also led to decreased user time on the platform, negatively impacting the profit margins for both social media platforms and the desired outcome of social media users consuming politically neutral or moderate news. Nevertheless, Nyhan et al. (2023), one of the studies that tested algorithmic changes on Facebook within the NPR article, reported that there was no significant decrease in the polarization levels of users, implying that the dismantling of insulated echo chambers has no significant effect on polarization. Additionally, Di Tella et al. (2021) exposed Argentinian partisans to counter-attitudinal information around an important election. They even found that exposure to counter-attitudinal information appears to increase polarization among social media users, running counter to other scholars' assumptions about echo chambers. However, this study only lasted 24 hours, so its results may not necessarily remain consistent over a longer period of experimentation.

Given that the two studies performed on live subjects concluded that exposure to counter-attitudinal information is at best an insignificant method and at worst an actively harmful

one, it may be relevant to reconsider whether exposure to counter-attitudinal information is the best strategy for dismantling polarized communities. The simplest and most practical solution to dismantling polarized communities is outlined by Baumgaertner (2014): each individual should adopt an impartial worldview. However, this method fails if faced with an individual who either is unaware they are within an echo chamber or are unwilling to adopt this framework. In addition, it is difficult for any individual to adopt a wholly impartial perspective.

Research Plan

This study aimed to reevaluate base assumptions within echo chamber literature through interaction with partisan users through surveying partisan social media users at both the Republican Iowa Caucus and the Marlborough School. It focused on the question: "Are reports from partisan users consistent with the echo chamber model, or do the results suggest a different model should instead be employed?"

Study Population

This study investigated and compared the social media habits and feeds, as well as the political views of Iowa Caucus attendees and Marlborough School seniors. Iowa Caucus-goers were likely to be politically interested and informed due to the political nature of the event. Given that this was a Republican caucus, all caucus-goers interviewed identified as conservative. On the other hand, the Marlborough School contains a majority liberal student body. Only Marlborough seniors were interviewed in the interest of speaking to chiefly eligible voters. Therefore, the two separate survey locations this study used accessed voters from both sides of the partisan spectrum.

In the interest of keeping both surveys as consistent as possible, respondents were randomly approached without prior notice and asked to participate. The study surveyed a total of 20 people, split evenly between both locations.

Data Collection

The survey below was originally produced and personally conducted. All participants were recruited in-person. They were asked the following questions:

1. How would you rate yourself on this scale? (For Iowa Caucus-goers: 0 is extremely liberal, 10 is extremely conservative, For Marlborough seniors: 0 is extremely conservative, 10 is extremely liberal)

    0   1   2   3   4   5   6   7   8   9   10

2. Which of the following social media platforms do you regularly use? (check all that apply)

    ___ Facebook

    ___ X/Twitter

    ___ TikTok

    ___ Instagram

    ___ Snapchat

    ___ YouTube

    ___ TruthSocial

    ___ Other:

3. What news sources do you trust the most?

4. Do you get political news more from social media or from other media (e.g. news sites, television, talk radio, podcasts)?

5. How do you interact with political news on social media? Do you: (check all that apply)

____ Read headlines

____ Read linked articles

____ Like posts

____ Share/send posts to others

____ Comment on posts

____ Repost articles

____ Post articles that you find elsewhere

____ Write original posts/tweets

6. How would you describe the people you discuss political news with on social media? Are they:

    a. Friends and/or family members

    b. People you don't personally know

    c. About the same for both A and B

    d. Other

7. Do you ever see opposing political opinions on your social media feed? If so do you: (check all that apply)

____ Read headlines

____ Read articles

____ Dislike posts

____ Comment on posts

____ Repost articles with your own critique

8. How does clicking on an opposing political opinion make you feel? (check all that apply)

____ Interested/curious

____ Contemplative

____ Annoyed

____ Angry

____ Skeptical

9. Do you think most adults in America are trapped in social media bubbles?

10. Do you think it's important for us to find ways to pop these bubbles? If so, how could that be done?

11. What can I put down for:

Gender _____

Age or Age Range _____

Questions might have been modified or skipped in the interest of shorter interviews. In the event that not all questions were asked, questions 1, 7, 8, and 9 were prioritized. This was because question 1 provided information on the relative degree of partisanship of participants, question 7 revealed whether partisans ever saw cross-partisan information on social media, question 8 qualitatively asked about participant reactions to the potential cross-partisan information, and question 9 showed the general perception about the extent of echo chambers in America. Particularly, questions 1, 7, and 9 were used for graph aggregation below. While some participants were asked if they consented to their responses being recorded, responses were mainly transcribed by hand.

Procedure

To analyze whether the echo chamber model is appropriate for modeling polarized communities on social media, this study investigated the extent to which partisan social media users a) view counter-attitudinal political content on social media platforms and b) tend to discredit or skip counter-attitudinal political content if encountered. This study compared the results to existing literature investigating echo chambers. Sources about similar echo chamber communities were cross-referenced for analytical and synthetical purposes. In particular, this study sought to investigate whether individuals in echo chambers behave similarly to those illustrated in prior literature or if there are additional elements, namely the component of active resistance to counter-attitudinal political ideas, present in partisan individuals.

In terms of the experimental aspect of this study, the independent variable was the political orientation of the participants. This study intended to determine whether users ever experienced counter-attitudinal views or news articles on social media platforms. Nonetheless, there were many extraneous variables, including but not limited to age, ethnic background, education level, and usage of different social media platforms. All participants in the study were kept anonymous. If a transcript was recorded, there were no names or other identifying information attached.
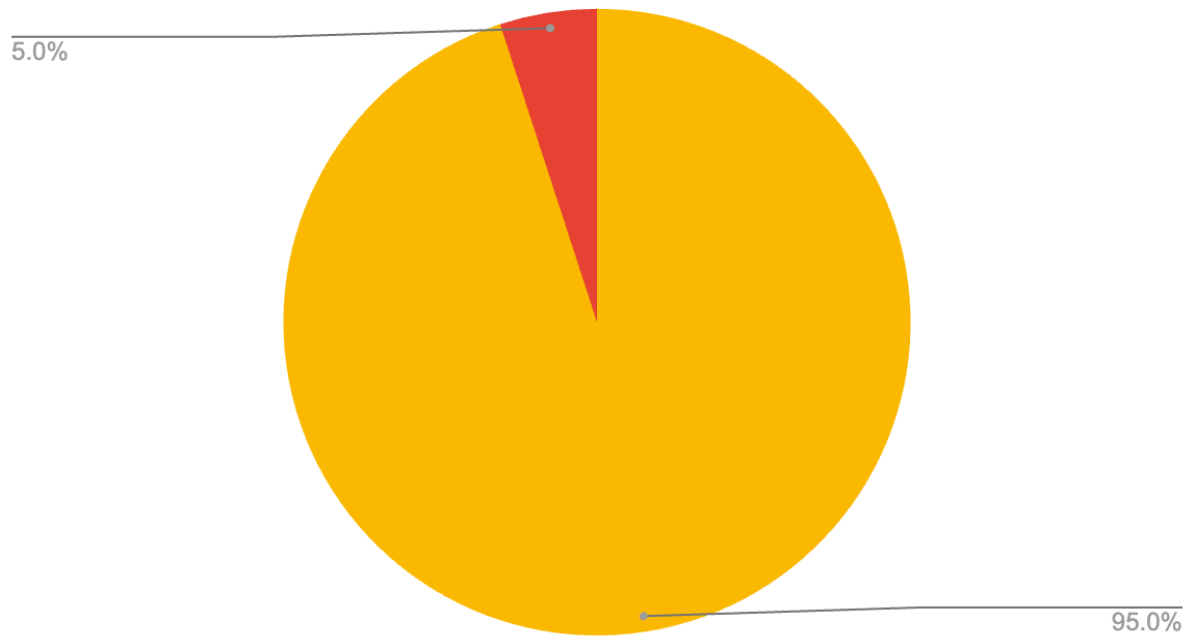
Results

Figure 1

Self-Rating of Partisanship

■ Iowa Caucus-goers ■ Marlborough Seniors
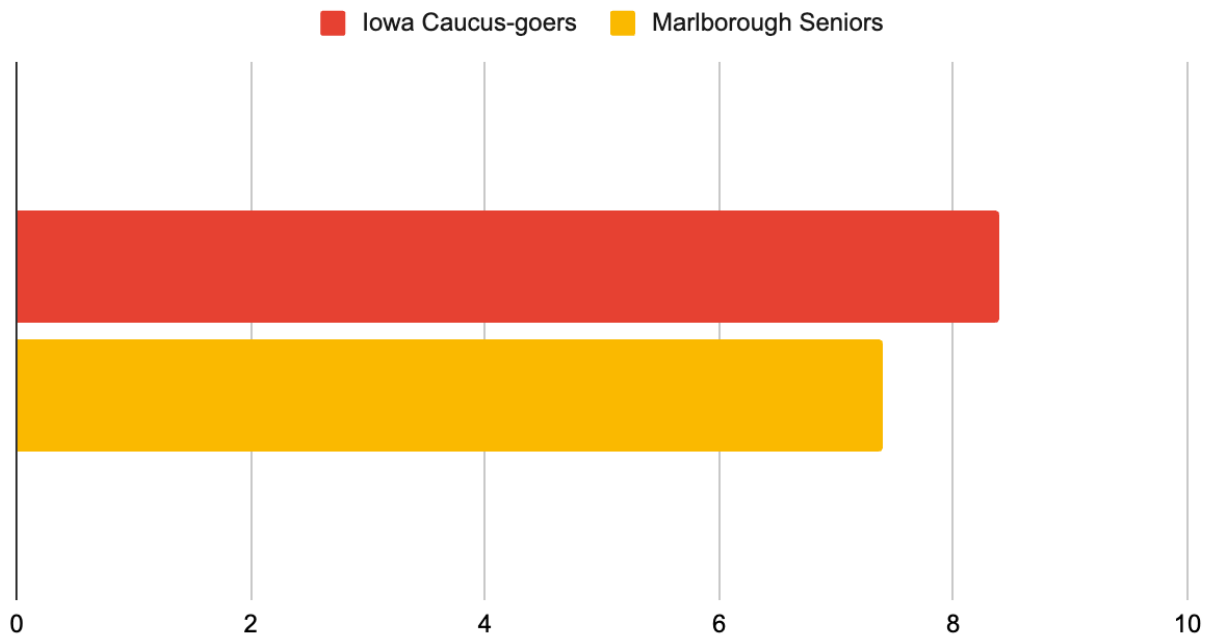
Key: The number represents the degree of partisanship self-reported by participants as delineated in question 1 of the survey
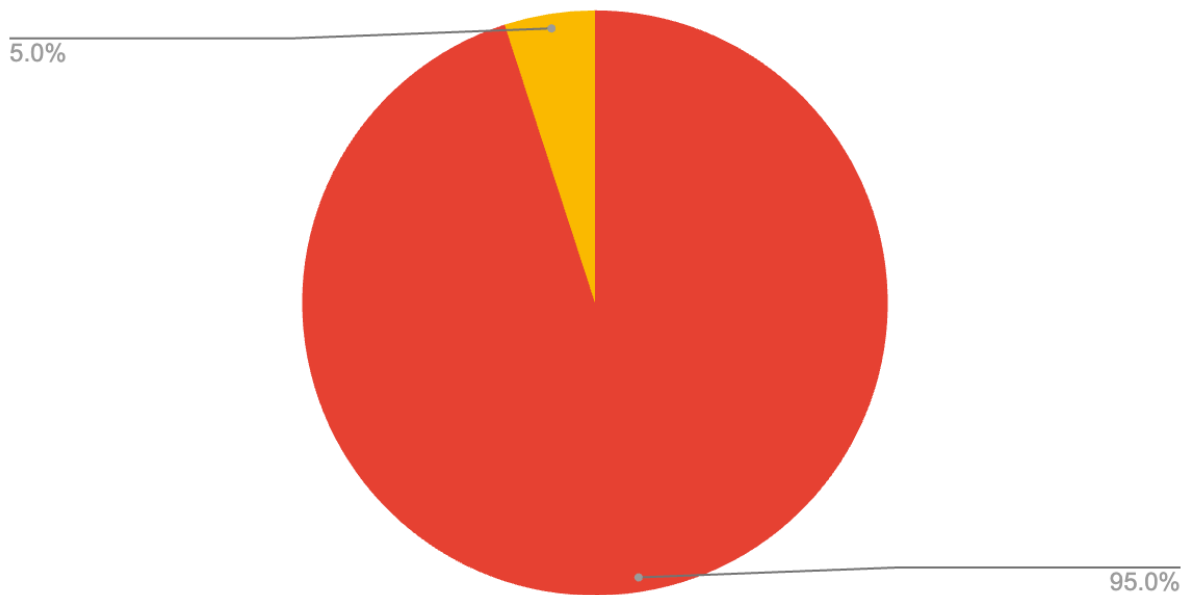
Figure 2

Percentage of Users Who Viewed Cross-Partisan Information

5.0%

95.0%

Key: 95% (yellow) of users reported viewing cross-partisan information on their social media feeds, while 5% (red) reported that they did not view cross-partisan information on their social media feeds

Figure 3

Percentage of Users Who Believe Most Americans Are In Echo Chambers

5.0%

95.0%

Key: 95% (red) said they believed most Americans only receive political information from one side of the political spectrum, while 5% (yellow) said they believed most Americans view political information from both sides of the political spectrum

When asked to rate their partisanship, as described above in question 1, Iowa Caucus-goers rated their partisanship as an average of 8.4 while Marlborough Seniors rated their partisanship as an average of 7.4 (Figure 1). 19 out of 20 said they have viewed cross-partisan information on their social media feeds (Figure 2). This result contradicts the echo chamber model as most participants who rated themselves as highly partisan had seen cross-partisan information on their social media feeds. When asked how they felt when they viewed this cross-partisan information, most participants answered that they would feel interested, skeptical, annoyed, or some combination of the three. Several participants on both sides of the spectrum reported active avoidance of opposing political views, either because they believed the views were too extreme or factually unreliable. Even though many users detailed viewing political

information from both sides of the political spectrum, participants remained polarized as their attitudes towards cross-partisan information remained largely negative. Of the 20 participants surveyed, 19 said that they believe the majority of Americans are trapped in an echo chamber. When this discovery is viewed in tandem with Figure 2, it reveals that a perception gap exists within the American public concerning the supposed number of individuals versus the actual number of individuals in echo chambers. Only one participant reported changing their political opinions because of differing political views on social media.

Discussion and Conclusion

There are three primary takeaways from this study.

First, most partisans do not meet the criteria for being in a social media echo chamber. Given that most participants reported viewing cross-partisan information on their social media feeds, it appears most American adults are not in fully insular communities.

Second, participants reported little to no change in their political opinions after consuming counter-attitudinal content on social media. The one caucus-goer who reported a shift in political views commented that his perspective changed after watching Ben Shapiro, someone that he perceived as more moderate than the caucus-goer's previous stance. However, Ben Shapiro is a commentator who would generally be characterized as very conservative, so this shift in political attitude appears to be minor. Therefore, while some political views may have changed for this individual, degrees of partisanship appear to have remained largely stationary among all participants. Other participants who consumed more cross-partisan information reported no change in their views. Thus, the commonly proposed solution to echo chambers of increasing cross-partisan news exposure seems both redundant and ineffective.

Third, 19 out of 20 participants agreed with claims that the majority of Americans are trapped within an echo chamber - after it was explained that an echo chamber means an individual is only receiving content from one side of the political spectrum. However, 19 of the 20 participants also remembered viewing cross-partisan information on their personal social media feeds. The perception gap between the actual and perceived prevalence of echo chambers, especially with the negative connotation that most participants displayed towards the concept of echo chambers, suggests participants may be experiencing affective polarization, or extreme negative sentiments towards those who are across the political spectrum from themselves. These results also imply that echo chambers are less common than scholars may presume. This study provides evidence that social media algorithms expose users to both sides of the political spectrum and that many users will voluntarily consume counter-attitudinal articles.

It should be noted that there are several limitations to this study. First, the small sample size means these results may not accurately represent the intricate diversities of the United States' partisan population. There is also the possibility that none of the respondents were sufficiently immersed in an echo chamber enough for their responses to be relevant to this study, and there may be others not represented in this study who are in more traditional echo chamber communities. Additionally, there were many distinct variables between the two separate groups in this study that may skew the results beyond a mere change in partisanship. Moreover, not all questions were able to be asked to all participants, potentially skewing the data. Furthermore, this study relied on the subjective reports of individuals to gauge their potential membership in an echo chamber and did not corroborate the responses with digital measurements of echo chambers on the reported social media platforms. Therefore, the involvement of participants in echo chambers may have been either exaggerated or diminished within their accounts. Finally,

this study was unable to note nuances when inquiring about cross-partisan information. When a participant reported that they viewed political information from across the partisan spectrum, they may have been describing exaggerated, inaccurate, or off-hand mentions of cross-partisan information.

In terms of the proposed models for polarized communities on social media, the evidence suggests users are not in fully insulated communities. The term "echo chambers" may no longer be appropriate for this field, given that both algorithms and user selectivity do not cause total isolation, even among highly partisan users. Most partisans are exposed to cross-partisan news, yet do not appear to change their political beliefs. Rather, psychological mechanisms such as confirmation bias cause polarization even when polarized communities are not fully insular. Therefore, strategies that aim to solely diffuse cross-partisan information are unlikely to depolarize individuals. Further research should be conducted on the most effective ways to overcome these psychological biases in order to reduce political polarization and revive participatory democracy.

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