How political extremism drives mass polarization through complex contagion

Working paper

ABSTRACT

The social media research field is divided on whether the mass electorate is becoming increasingly polarized on political issues. While some scholars argue that most voters have remained moderate, others have demonstrated that voters have followed political elites in becoming increasingly polarized. This ongoing debate has significant implications for democratic governance and political civility, yet it has seen little progress in the last decade. In this study, I provide a novel theoretical perspective on this long-standing empirical debate by proposing an alternative mechanism to explain issue polarization. I posit that extremist persuasion is a crucial mechanism for understanding issue polarization, as if voters have increasingly polarized policy preferences, extremist ideas should accordingly be increasingly persuasive, as polarization implies a movement away from moderation and towards the extreme. I employ a complex contagion model to test this mechanism by examining the spread of extremist views on social media. Utilizing a large corpus of tweets from the 2020 United States Presidential election, I find that voters are more likely to adopt extremist views after exposure to extremist content, relative to moderate views. These findings not only contribute to the ongoing theoretical debate surrounding political polarization in the United States but also provide novel insights on the dissemination of political extremism on social networks.

KEYWORDS

Political extremism, polarization, complex contagion, social media

INTRODUCTION

Long-standing scholarship in political behavior finds that the American electorate has sorted itself along partisan lines during the past decades [4, 24]. Specifically, it has been observed that liberal voters tend to increasingly align themselves with the Democratic Party, while conservative voters tend to align themselves with the Republican Party. This phenomenon has been widely documented in a significant body of empirical research, however, there is an ongoing debate among scholars regarding the implications of this trend. Some argue that this ideological sorting reflects consistency in political attitudes among voters, with individuals being able to effectively align their views with their respective party affiliations (Fiorina, 2005). Conversely, other scholars posit that this phenomenon of ideological sorting is indicative of a broader trend toward mass polarization among voters (Abramowitz, 2007, 2010, 2012).

Scholars studying the issue of polarization have sought to address the debate surrounding the implications of ideological sorting by examining its consequences. Many researchers have found that voters are becoming increasingly polarized on specific issues, as evidenced by the work of Abramowitz [1–3], who posits that the American electorate is shifting away from the center and towards the extremes in their policy preferences. However, other scholars argue that ideological sorting is a consequence of elite polarization, and that the electorate remains moderate on most issues, as proposed by [21] and [17]. In both cases, it is believed that mass polarization can only occur if voters' policy preferences are increasingly extremist, thus emphasizing the need to make a conceptual and empirical distinction between sorting and polarization.

The ongoing debate surrounding ideological sorting and polarization has been met with a plethora of mixed empirical findings, with some studies suggesting an increasing distance between policy preferences, while others have yielded null results. This discrepancy in findings can be attributed to the utilization of varying measurement and conceptualization strategies, as well as different data sources across these studies. Despite the extensive body of literature on the topic of issue polarization, theoretical advancements have been hindered by the preoccupation with questions of operationalization [26].

In this article, I provide a novel perspective on this debate by examining the *mechanisms* behind issue polarization. I argue that ideological sorting may polarize voters on issues by means of persuading them towards adopting more extreme positions. Voters can only be polarized on issues if they are more likely to be persuaded by political extremism. To test this mechanism, I measure the likelihood of adopting extremist beliefs relative to moderate beliefs of Twitter users during the 2020 US Presidential election. This research design allows us to move beyond past issues of operationalization. Whether voters are more or less likely to be persuaded by extremist political views is key to understanding the foundations of issue polarization. Issue polarization in the electorate is rather unlikely if moderate views are more persuasive than extremist views. Thus, the issue polarization argument is tenable insofar as voters can be persuaded by extremist views.

In this study, I offer a novel perspective on the ongoing debate surrounding ideological sorting and issue polarization by exploring the underlying mechanisms that drive this phenomenon. Specifically, I argue that ideological sorting may contribute to issue polarization by influencing individuals to adopt more extreme positions. This hypothesis is premised on the notion that voters can only become polarized on issues if they are more susceptible to persuasion by extremist political views. To test this mechanism, I employ a

research design that measures the relative likelihood of adopting extremist beliefs versus moderate beliefs among Twitter users during the 2020 US Presidential election. This approach allows for a move beyond past issues of operationalization. The question of whether voters are more or less likely to be swayed by extremist political views is central to understanding the foundations of issue polarization. Given that issue polarization in the electorate is unlikely to occur if moderate views are more persuasive than extremist views, the argument for issue polarization is only tenable if voters can be swayed by extremist views.

Aside from having implications for the literature on polarization, this study offers new findings pertaining to political extremism. Research in the field of electoral politics has yielded mixed results pertaining to voters' preferences toward extreme views. A substantial body of work has established that extreme candidates are becoming increasingly more likely to be elected compared to their moderate counterparts [6]. Conversely, other studies have found that moderate politicians tend to perform better than their extreme counterparts [5, 8, 19, 20]. Given these conflicting findings, further research is necessary to accurately gauge the persuasiveness of extremist political views among the electorate.

To test the proposed mechanism, I employ a complex contagion framework to measure the likelihood of adopting extremist and moderate beliefs among individuals. This model calculates the number of exposures to a particular political attitude required for an individual to adopt the said attitude. Utilizing Twitter data from the 2020 United States Presidential election [10] I find that both conservative and liberal users exhibit a greater propensity to adopt extremist beliefs after fewer exposures, in comparison to moderate beliefs. This finding supports the hypothesis that ideological sorting may polarize voters on issues by means of persuasion toward adopting more extreme positions.

THEORY

Issue polarization is described as a bimodal distribution of voter preferences with two peaks at the poles and a valley at the median. Voters are more likely to be at the extremes of the distribution, contrary to a unimodal distribution where most voters have median-centered preferences [12, 13]. Moreover, the issue polarization argument is concerned by the relative extremity of political preferences. Under this assumption, an electorate polarized on political issues would not need to be 'extreme enough' under an arbitrary threshold. All that is required is a valley in the distribution at the median with unknown locations of peaks [21]. This conceptual distinction is important since it makes no assumptions on the absolute meaning of extremity.

Ample scholarship provides empirical evidence that the electorate has grown apart on political issues. It find that Americans are drifting away from the center towards the extreme of the ideological spectrum. The electorate is populated by an increasing amount of 'strong liberals' and 'strong conservatives' at the expense of moderates [1, 2, 7]. However, other studies have brought nuance to this picture [22]. Fiorina, Abrams and Pope (2005) find that on key issues such as civil rights and taxation, Americans have preferences centered at the median. Moreover, Di Maggio, Evans and Bryson (1996) find that not only is mass polarization limited, but Americans have grown less polarized over time.

While most of these disagreements focus on conceptualization, past empirical strategies suffer from serious measurement error. Making inferences about the evolution of attitudes on policy preferences over time is difficult since issues have greatly evolved over the past decades. For example, the civil rights debate in the 1960s was focused on providing basic rights to Black Americans. Today, the same debate is situated in a significantly more complex and nuanced context. It is thus difficult to compare trends in issue extremity when the nature of a given political issue rapidly evolves.

To mitigate these concerns, I probe the theoretical plausibility of issue polarization by testing a largely ignored mechanism: persuasion. The underlying argument of issue polarization is that voter preferences have grown away from the center towards the extremes. Thus, if voters are polarized on issues they must be more likely to be persuaded by extremist views relative to moderate views. This theoretical mechanism is ideal to test for two reasons. First, any factors motivating the persuasion of extremism can be exerted through persuasion. Whether voters are drifted away from the center because of political elites, media discourse, or social influence, persuasion remains the medium of attitude change. Second, I circumvent the empirical difficulties associated with longitudinal studies by leveraging cross-sectional data.

EMPIRICAL STRATEGY

I model persuasion by examining the spread of political beliefs as a complex diffusion in a social network. In this network, users are modeled as nodes connected to each other via communication links. The diffusion of beliefs in this network follow a complex contagion process. Complex contagion describes a learning process in which users require social reinforcement to adopt beliefs [9, 11, 14, 15, 23, 25, 27–29, 31]. Each user is assigned to a *threshold parameter* which captures the number of times they are exposed to an attitude before adopting that attitude [18, 30, 32]. The likelihood of persuasion is measured with this threshold parameter. The probability of adopting a political attitude decreases as the threshold parameter increases. Thus, I am able to understand the persuasiveness of certain features of political beliefs, here ideological extremity, by capturing the likelihood of adopting such beliefs relative to the number of exposures a user experiences in a social network.

To test the theoretical mechanism of persuasion, I compute threshold parameters required by users to adopt extremist and moderate views. I then compare these parameters to determine whether extremist views require less exposures to be adopted by users relative to moderate views. Individuals are susceptible to be polarized on issues if they require fewer exposures to extremist views before adopting them.

Attitude adoption and exposure

I measure the adoption of political beliefs using tweet hashtags. I consider users to adopt an attitude when they author a tweet using a related hashtag. In this article, I am concerned with the adoption of extremist and moderate political beliefs. Thus, I consider users to adopt an extremist (moderate) attitude when they use an extreme (moderate) hashtag. Using hashtags as a measure of political belief adoption suffers from several limitations. First, online users might use a hashtag without endorsing its symbolic meaning. A user using #qanon does not necessarily imply that their belief system is coherent with #qanon conspiracies. They might simply be writing about the topic without conferring with these ideas. I partially address this issue by analyzing conservative (liberal) hashtags among conservative (liberal) users. This restricts the prospect that liberal (conservative) users might write about a conservative (liberal) belief system without adopting it as their own. However, even if a conservative Twitter user writes a tweet with an extreme hashtag it does not necessarily mean that they are adopting this belief system. This issue could be solved with other empirical strategies, such as stance detection methods. However, previous research finds that hashtag usage is highly associated with offline endorsement [16**?**].

Attitude adoption. There is some research that suggests that using hashtags on social media can be a way for individuals to express their political views and affiliations. For example, a study published in the Journal of Computer-Mediated Communication in 2016 found that Twitter users who used hashtags related to political campaigns were more likely to be politically active and engaged than those who did not use such hashtags. However, it is important to note that the use of hashtags is just one aspect of online political participation, and it is not necessarily indicative of a person's overall political attitudes or behaviors. In addition, the specific context in which hashtags are used, as well as the other content of the tweet or post in which they appear, may also influence how they are interpreted and understood by others.

In addition to expressing political views and affiliations, hashtags can also be used to promote political causes, campaigns, or events, and to mobilize support for specific issues or candidates. They can also serve as a way for individuals to connect with others who share similar political views, and to participate in online political discussions and debates. Hashtags can also be used to facilitate the creation and dissemination of political content on social media. For example, hashtags can be used to organize and label content related to specific issues or events, making it easier for others to find and share that content with their own networks. In this way, hashtags can play a role in shaping the public discourse and agenda around certain political issues, and in amplifying the voices of those who use them.

However, it is important to note that the use of hashtags alone does not necessarily imply a deep or committed level of political involvement. Some individuals may use hashtags more as a way to signal their support for a particular cause or issue, rather than actively participating in political activism or organizing efforts. Therefore, it is important for individuals to be aware of the potential biases and agendas of those who are using hashtags, and to critically evaluate the information and perspectives that are being presented. It is also important for individuals to be mindful of the ways in which their own use of hashtags may influence the information and perspectives that others encounter online.

In this way, hashtags can be a useful tool for understanding the political landscape and dynamics of social media, and for studying the ways in which political communication and information dissemination occur online. However, it is important to recognize that hashtags are just one aspect of online political communication, and that they may not always accurately reflect the views or behaviors of all individuals or groups. It is also important to be mindful of the potential biases and limitations of using hashtags as a source of data, and to consider the broader context in which they are used and interpreted.

Several challenges arise when identifying extremist and moderate hashtags. Classifying the political leaning of hashtags along a left-right spectrum leaves uncertainty in the ideological cut-off points. It is difficult to identify the ideological location distinguishing between moderate and extreme hashtags. Instead, I qualitatively identify hashtags known to be extremist and moderate. I present these hashtags in Table 1. First, I select #Biden 2020 and #Trump2020 as the moderate hashtags for Democratic and Republican users respectively. Second, I select #boycottgoya, #tre45on, #blacklivesmatter, #blm, #acab, #abolishthepolice, #defundthepolice, #trumpvirus and #whitesupremacy as extreme Democratic hashtags. For extreme Republican hashtags, I select #qanon, #obamagate, #wwg1wga, #whitelivesmatter and #stopthesteal. While I only analyze a single moderate hashtag relative to many extremist hashtags, #Trump2020 and #Biden2020 are found in about 50% of tweets in these data. The classification along partisan lines allow us to compare threshold parameters for both partisan identifications.

Democrat	Republican	Ideology
#Biden2020	#Trump2020	Moderate
#boycottgoya	#qanon	Extremist
#tre45on	#obamagate	Extremist
#blacklivesmatter	#wwg1wga	Extremist
#blm	#whitelivesmatter	Extremist
#acab	#stopthesteal	Extremist
#abolishthepolice		Extremist
#defundthepolice		Extremist
#trumpvirus		Extremist
#whitesupremacy		Extremist

Table 1: Hashtags used to model complex contagion

Attitude exposure. To compute the threshold parameter, I identify a Twitter user's count of exposures to each hashtag before authoring

a tweet with the same hashtag. Using a retweet network, I measure exposure when a user quotes or retweets a tweet containing the hashtag.

Following and retweet networks are two different ways to model the spread of information or influence on Twitter.

The following network represents the relationships between Twitter users based on who they follow. This can be used to model the spread of information or influence because users are more likely to see and potentially be influenced by the content of accounts they follow. The advantage of using the following network to model complex contagion is that it captures the direct connections between users and the potential for direct influence.

On the other hand, a retweet network represents the spread of tweets or information through retweets. In this case, a retweet indicates that a user is passing along a tweet they have seen to their followers. This can be used to model the spread of information or influence because a retweet can potentially expose a tweet to a much larger audience than it would have reached through the original user's followers alone. The advantage of using a retweet network to model complex contagion is that it represents a conservative measure of attitude exposure. We can be sure that the user consumed the information and passed along the retweet since they actively engaged with it.

It's worth noting that both following and retweet networks have limitations. The following network does not capture the spread of information or influence through accounts that a user does not follow, even if they are exposed to that content through other means (e.g., through search, recommendations, or being mentioned in a tweet). Similarly, a retweet network does not capture the spread of information or influence through accounts that do not retweet a particular tweet, even if they are exposed to it and potentially influenced by it.

In this article, I am concerned with the adoption and exposure to political attitudes. Tweets expressing these attitudes using hashtags are often subtle. The high level of engagement needed by the retweet network to capture exposure is thus better suited to do this task. It is quite likely that users are not exposed to all the political attitudes expressed by the ensemble of their following network, which would be a very cognitively demanding process. Thus, modeling the complex contagion processes is more appropriate with a retweet network.

Data

To model the social contagion processes, I leverage data from Twitter on the 2020 US Presidential election. Tweets were collected from January until September 2020 using the Twitter API with keyword and mention search[1]. These data contain a total of 67,181,551 tweets. This dataset was then filtered based on each hashtag found in Table 1 for a total of 31,720,529 tweets posted by 1,465,486 unique users.

[1]Keywords can be found in Chen, Deb and Ferrara 2020

RESULTS

Descriptive results

To test the theoretical mechanism previously specified, I compare the threshold parameters of extreme and moderate hashtags. If users require less exposure to extremist beliefs before adopting them, we should consider them more persuasive than moderate beliefs. In the following analyses, I compute threshold parameters separately for conservative and Liberal Twitter users while controlling for their political ideology [2].

Tables 2, 3, and 4 show descriptive statistics on the use of Republican and Democrat hashtags. The first row (*n*) shows the dataset's total number of hashtag appearances. As we may expect, moderate hashtags are more likely to be used than extreme hashtags. The second row (*unique users*) shows the number of unique users who either adopted (tweeted) or were exposed (retweeted or quoted) to the hashtag. The *adopters*, *exposed adopters*, and *sole adopters* rows refer to the number of users who used the hashtag, used the hashtag after being exposed, and used the hashtag without being previously exposed, respectively.

The *mean exposures* row shows the mean number of exposures required by each user before adopting the hashtag. This statistic is the equivalent of the threshold parameter. Higher values in the mean exposures row indicate lower persuasiveness, and lower values indicate higher persuasion.

For Republican hashtags, the average amount of exposure required before behavior adoption is greater for #Trump2020 than for all extreme hashtags. This statistic shows that conservative users are more likely to use an extreme hashtag after fewer exposures relative to the #Trump2020 hashtag. This pattern is also consistent for Democratic hashtags, with the exception of #abolishthepolice, which has a higher threshold than #Biden2020.

I finally provide the mean ideology of users who adopted, users who required exposure before adopting, and users who did not require exposure before using the hashtag. Two patterns emerge from these ideological point estimates. First, the mean political ideology of users who use moderate hashtags (#trump2020 and #biden2020) are closer to the population mean (0) compared to the extreme hashtags. This indicates that generally, users who use more extreme hashtags are also more politically extreme, validating the choice of hashtags for the analyses. Second, users who do not require exposure before adopting the hashtag are more moderate than those who require prior exposure. This finding is puzzling, especially for extreme hashtags, since one would expect users who do not require social reinforcement of extremist ideas before adopting them to be intrinsically more extremist than those who do.

Regression analysis

I test the hypothesis that extremist ideas have a higher likelihood of being adopted by online users with generalized linear models. I

[2]I compute the ideology of each Twitter user using network propagation (Barbera (2015))

	trump2020	qanon	obamagate	wwg1wga	whitelivesmatter	stopthesteal
n	27744283	3283016	471947	4114391	28369	43873
Unique users	679973	158295	230175	190999	2474	9736
Adopters	219010	17886	50333	34221	585	554
Exposed adopters	85114	7914	22047	15106	27	112
Sole adopters	133896	9972	28286	19115	558	442
Mean exposures	30	23	20	20	3	6
Mean theta (ideology)	2.7	2.94	2.93	2.94	1.88	2.95
Theta - adopters	2.19	2.62	2.73	2.77	2.14	2.92
Theta - Exposed adopters	2.5	2.79	2.87	2.87	2.27	2.95
Theta - Sole adopters	2	2.48	2.63	2.69	2.13	2.91

Table 2: Descriptive statistics for Republican hashtags

	biden2020	boycottgoya	tre45on	blacklivesmatter	blm	acab
n	7553045	136607	462576	716811	256415	3961
Unique users	419624	22429	106056	154808	43082	2044
Adopters	139222	2976	15191	27542	13239	582
Exposed adopters	49739	220	3656	4529	963	18
Sole adopters	89483	2756	11535	23013	12276	564
Mean exposures	16	5	6	5	4	2
Mean theta (ideology)	-0.843	-0.874	-0.855	-0.833	-0.773	-0.74
Theta - adopters	-0.805	-0.812	-0.845	-0.765	-0.755	-0.783
Theta - Exposed adopters	-0.844	-0.865	-0.867	-0.813	-0.792	-0.776
Theta - Sole adopters	-0.784	-0.808	-0.838	-0.755	-0.752	-0.784

Table 3: Descriptive statistics for Democrat hashtags Part I

	abolishthepolice	defundthepolice	trumpvirus	whitesupremacy
n	1058	2016	2242748	26747
Unique users	769	10064	168901	17190
Adopters	235	2904	70927	1596
Exposes adopters	4	123	20564	104
Sole adopters	231	2781	50363	1492
Mean exposures	23	2	9	2
Mean theta (ideology)	-0.848	-0.82	-0.83	-0.813
Theta - Adopters	-0.856	-0.814	-0.818	-0.8
Theta - Exposed adopters	-0.92	-0.885	-0.848	-0.836
Theta- Sole adopters	-0.855	-0.811	-0.805	-0.797

Table 4: Descriptive statistics for Democrat hashtags Part II

regress the number of exposures for each user on whether they used the hashtag or not, controlling for user ideology. The dependent variable is binary, where 0 indicates that the user never adopted the hashtag. The independent variable is each user's total number of exposures. The regression results can be interpreted as the effect of a single exposure on the likelihood of adoption. Higher coefficient estimates indicate that users require fewer exposures before adopting the hashtag. Hashtags with larger coefficients can thus be considered more efficient persuaders.

Table 5 shows the regression results for Republican hashtags. We first notice the low coefficient sizes for most of the estimated models. However, we are less concerned with the effect sizes, and more concerned by the relative sizes between extreme and moderate hashtags. As the coefficient increases in size, the relative importance of a single exposure increases. Each extreme conservative hashtag has a larger coefficient compared to #trump2020. This indicates that users are more likely to use extreme hashtags after fewer exposures, controlling for their political ideology. These results may be driven by the clarity in the signal provided by hashtag usage. Moderate hashtags are used by nearly double the amount of unique users compared to extreme hashtags. Extreme hashtags are thus more likely to be used by the same users. This means that extreme hashtags are more likely to be repeatedly used by the same users. Other Twitter users are thus exposed to these hashtags with these repeated signals from a smaller set of users. This may lead exposed users to clarify the relationship between hashtag usage and identity, which may explain increased persuasiveness. However, more investigation is needed to support this claim.

The results for liberal hashtags are more nuanced. Most extreme liberal hashtags such as #acab, #tre45on, #abolishthepolice, #trumpvirus and #whitesupremacy are more persuasive than #biden2020. However, other hashtags such as #blm, #boycottgoya and #defundthepolice have negative coefficients. This indicates that more exposures to these hashtags *lowers* the probability that a Twitter user will subsequently use them.

	trump2020	obamagate	qanon	stopthesteal	whitelivesmatter	wwg1wga
Constant	-0.501***	-1.166***	-1.223***	-2.640***	0.379	-1.3***
	(0.010)	(0.028)	(0.031)	(0.210)	(0.146)	(0.029)
Exposures	0.001***	0.004***	0.004***	0.015***	0.01***	0.004***
	(0.000)	(0.001)	(0.001)	(0.015)	(0.046)	(0.000)
Num.Obs.	679972	230174	158294	9735	2473	190998

* p < 0.1, ** p < 0.05, *** p < 0.01

Table 5: Generalized linear models for Republican hashtags adoption

Table 6: Generalized linear models for Democrat hashtags adoption Part I

	biden2020	acab	blacklivesmatter	blm	boycottgoya
Constant	-0.487***	-1.098***	-0.923***	-0.024***	0.227***
	(0.018)	(0.147)	(0.019)	(0.026)	(0.069)
Exposures	0.005***	0.022***	0.001**	-0.023***	-0.326**
	(0.001)	(0.057)	(0.002)	(0.001)	(0.014)
Num.Obs.	419623	2043	168967	43081	22428

* p < 0.1, ** p < 0.05, *** p < 0.01

Table 7: Generalized linear models for Democrat hashtags adoption Part II

	tre45on	abolishthepolice	defundthepolice	trumpvirus	whitesupremacy
Constant	-1.650***	-0.113**	-0.075***	-0.480***	-2.111***
	(0.033)	(0.251)	(0.070)	(0.017)	(0.081)
Exposures	0.031***	0.009**	-0.096***	0.01***	0.072***
	(0.002)	(0.084)	(0.020)	(0.001)	(0.019)
Num.Obs.	106055	482	8381	211570	15402

* p < 0.1, ** p < 0.05, *** p < 0.01

DISCUSSION AND CONCLUSION

The results I present show mixed evidence for the persuasiveness of extremist political beliefs. Most extreme liberal and conservative hashtags are more likely to be used by Twitter users after fewer exposures than moderate hashtags. However, some liberal extreme hashtags have the opposite effect, where users are less likely to adopt these beliefs after exposure. Further analysis is required to clarify this puzzling finding. To speak to the main hypothesis, I can argue that issue polarization is theoretically plausible given the high persuasiveness of political extremism.

The research design used in this paper has some limits in answering theoretical questions that explain issue polarization. I argue that the persuasiveness of extremist online content is imperative to issue polarization. However, the notion that users more likely to adopt extremist beliefs are also more polarized on issues remains an assumption that I do not directly test. Moreover, I do not examine trends in the persuasiveness of extremist beliefs. This presents challenges in associating the persuasiveness I capture in this study with the increasing levels of issue polarization among voters.

Further work is needed to clarify the relationship between political extremism and issue polarization. In this article, I present evidence that Twitter users are more likely to be persuaded by extremist beliefs. I lack the empirical foundation to demonstrate the theoretical mechanism of extremist persuasion explaining issue polarization. More importantly, the direction of the relationship between political extremism and issue polarization is unclear. Are voters more likely to be persuaded by extremism because they are increasingly polarized on issues? Or did voters drift from the center on their policy preferences because extremist politics became increasingly persuasive?

Finally, future work should examine the reasons why extremist beliefs are persuasive.

Political extremist beliefs can be persuasive for several reasons. One reason is that they often appeal to strong emotions such as fear, anger, and outrage. When people feel these emotions, they may be more likely to be swayed by an argument confirming their existing beliefs and offering a simple solution to a complex problem. Negative emotions can significantly alter the political behavior of the masses. Dubbed the *emotional connection*, recent scholarship has examined how negativity explains trends in polarization. Extremist beliefs can also be persuasive because they offer a sense of belonging and community to those who adhere to them. People may feel a sense of pride in being part of a group fighting for a cause, and this sense of belonging can be a powerful motivator. Extremist beliefs often rely on black-and-white thinking, which can make them appealing because they offer a clear right and wrong answer to complex issues. This can be particularly appealing in times of uncertainty or when people feel overwhelmed by the complexity of the world around them. Finally, extremist beliefs can be persuasive because they are often promoted by charismatic leaders skilled at convincing others to follow their cause. These leaders may use a variety of tactics, such as fear-mongering, manipulation, and appeals to authority, to sway others to their point of view. Finally, the personality traits of extremists can increase the likelihood of cue-taking from voters. Political extremists are shown to be ideologically inflexible, vocal on social media, and overconfident. These traits lead to higher group cooperation via the threat of punishment. Third, the issued signal emulated by extremists is arguably more precisely relative to moderates. Albeit important, signal precision is an overlooked mechanism of persuasion that can significantly affect the behavior of voters because it reduces the cost of information processing.

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