

We live in different worlds - how misinformation continues to fracture society

By Sarah Lucioni

The insurrection at the U.S. Capitol last week glaringly materialized issues that have been at the forefront of the nation for the past five years, including a [stark double standard in law enforcement](#), political culpability, and the role of media and technology in a united society. There are many lessons to learn from the Capitol Riot and days leading up to it, but a key takeaway *must* be about the efficacy of information warfare. The riot showed a clear example of societal division in the United States that has successfully stemmed from and been amplified by online misinformation.

Misleading information is not a new plague to society. Evidence of [propaganda](#) and [disinformation](#) has been around since Classical Antiquity. However, the rise of social media presents a significant development in information warfare. At the core, social media networks lack regulation, allowing individuals to freely post whatever, whenever. Posts do not require careful examination or critical thinking before sharing with a network obscured by a static device. Veiling the human connections also shrouds one's feedback system, giving way to [intermittent reinforcement](#). For example, instead of learning from others' body language elicited by a statement we say aloud, we now constantly check the number of likes and comments our posts obtain. The level of engagement isn't always the same, pushing us to post and interact with our online network more and more in search of the brain's positive and euphoric response. This insatiable craving leads to the addictive nature of social media.

Seeking this validation and connection with others, we are driven to post and interact with content that portrays our identity. This means that we will share posts without hesitation as long as they support the political party, social activism movement, sexuality, religion, race, or ethnic group that aligns with each of our individualities. The recommendation algorithms backing the media platforms learn that content matching our preferences keeps us engaged. Thus, as time stretches on, the sites continuously confirm our biases by showing us *exactly* what we want to see. Sounds great, right?

Well, while we are enjoying our personalized paradise, we are simultaneously aiding societal fragmentation. Each post we engage with helps us encapsulate ourselves within a rose-tinted bubble. This individualism is especially harmful in regards to personalized consumption of news. We simply do not live in the same world as our neighbors anymore because we each have our own tailored view of the world. Since we no longer consume the same information, we lose common ground for objective and factual evidence. Instead, we readily "verify" information we see by how often it appears in our feed. Therefore, our standards of truth shift from authoritative quality to quantity.

For example, imagine living in a town where a thick layer of clouds always obstructs the sky. Day after day, you read headlines about how the sky is purple with evidential pictures and support from Dr. X, Dr. Y, and Dr. Z. Then one day, you come across an article where Dr. B claims the sky is blue. But you've never heard from Dr. B, and this is the first you've ever heard about a blue sky. Therefore, that article must be inaccurate, and now you don't trust Dr. B. Then, a couple weeks later, there's one day where the clouds finally break, and the sky is...blue? How do you reconcile this information with all of your trusted purple sky evidence? Logically, we would conclude that the sky is *usually* purple, but today is an unordinary day so the sky is an unordinary color. Taking this analogy one step further, the town across the country never has clouds in the sky, so the people who live there know that the sky is blue. When they run across a purple sky article they scoff and wonder why anyone would believe that nonsense. The people in opposing towns grow to dislike talking to one another because both groups believe they are correct, and they don't want to pointlessly argue. While most people in our real world would agree that the sky is blue, personalized news feeds fracture societies in much the same way.

Personalized news feeds are also becoming the norm. In 2019, [a study by Pew Research](#) found that 55 percent of adults in the U.S. often or sometimes get their news from social media. Among U.S. adult social media users on each platform, Pew finds that 73 percent get their news from Facebook, 71 percent from Twitter, and 62 percent from Reddit.

To empirically confirm that American society is not consuming the same information, consider the following Reddit case study. I examined three news subreddits that cover a range on the political spectrum, namely [r/news](#), [r/politics](#), and [r/conservative](#). r/news has 22.6 million members and provides general United States and world news. Politically, the subreddit attempts to remain objective, placing them in the middle of the spectrum. r/politics has 7.2 million members and is dedicated to news and discussion surrounding U.S. politics. The subreddit tends to lean left. r/conservative has 639k members that, as the name suggests, leans right.

Every day at approximately 11:59 p.m. PST during the week of January 9-16, 2021, I collected the top 50 headlines and top 5 comments per headline. I then processed each headline and comment to find common topics and words to grasp a snapshot of the news discussed throughout the day. To find common words, I used a stemming process to map different forms of the same word to a common stem (e.g. *connections*, *connective*, *connecting* would all map to *connect*). I then categorized the most common stems into the following subcategories:

Category	Headline Stems	Comment Stems
Capitol Riot, Impeachment	sieg, cruz, polic, dead, death, riot, terrorist, trump, capitol, ted, josh, charg, arrest, offici, assault, violenc, insurrect, pelosi, remov, offic, presid, impeach, investig, remov, report, charg,	trump, capitol, polic, impeach, violenc, arrest

	protest, boebert, accus, enforc, rioter, lauren, donald, resign, hawley, penc, alleg, admit	
Social Media, Censorship	app, censor, ban, platform, parler, web, facebook, twitter, tech, ceo, follow, block, share, qanon, amazon, account, host, suspend, share, post, dorsey, media	platform, twitter, amazon, tech
General Government	hous, member, state, senat, republican, elect, nation, gop, biden, law, democrat, feder, us, mcconnel, militari, vote, lawmak, court, conserv, declassifi, american, inaugur	left, republican, elect, presid, conserv, right, polit, politician, vote, senat, us, offic, democrat, hous, biden, state
Covid	covid, pandem	
Other	say, new, call, man, target, stop, big, found, medal, support, ahead, top, black, guy, get, expect, enforc, water, metal, face, second, million, worker, detector, china, russia, document, gun, die, tell, enter, relate, use, fire, hold, activist, fine, secretari, hit, white, depart, help, free, blast, martial, respons, york, protect, bankruptci, go, look, checkpoint, polit, parti, live, hide	peopl, ground, make, go, need, like, realli, time, fuck, get, want, charg, https, would, year, one, http, know, say, take, could, use, good, big, even, think, point, call, said, state, also, day, thing, news, happen, union, country, come, guy, never, still, parti, see, free

Finally, I used a ternary plot to visualize the differences in topics between the subreddits. A ternary plot allows us to visualize 3 variables in 2 dimensions. The position of each data point tells us how frequently the word stem appeared in each subreddit compared to the other subreddits. The closer a data point is to an apex means that the word more frequently appeared in that subreddit. Data points in the middle of the triangle appear approximately at equal frequencies. The size of the data point denotes the amount of times the word stem appeared. The following visualizations show the most common word stems in the top 50 daily headlines amassed over the week.

Week Overview of Political Subreddit Headlines

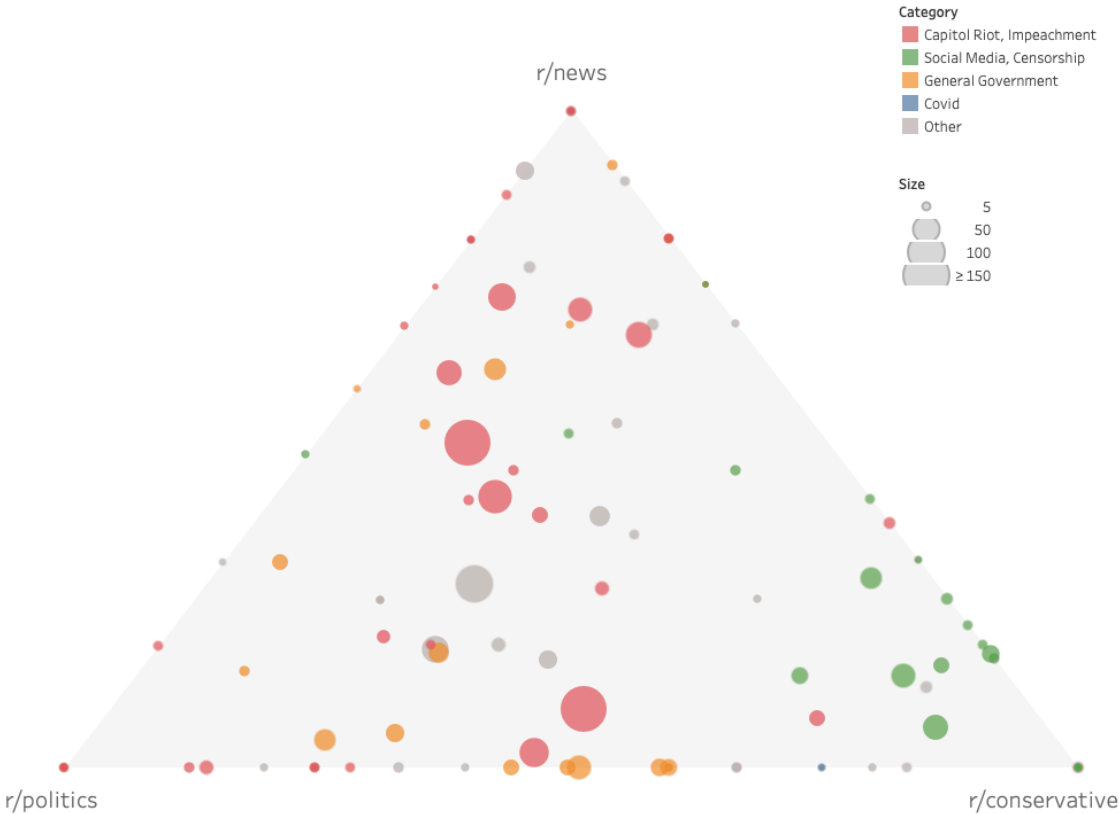


Figure 1: Most common word stems in top 50 daily political subreddit headlines, no labels

Week Overview of Political Subreddit Headlines

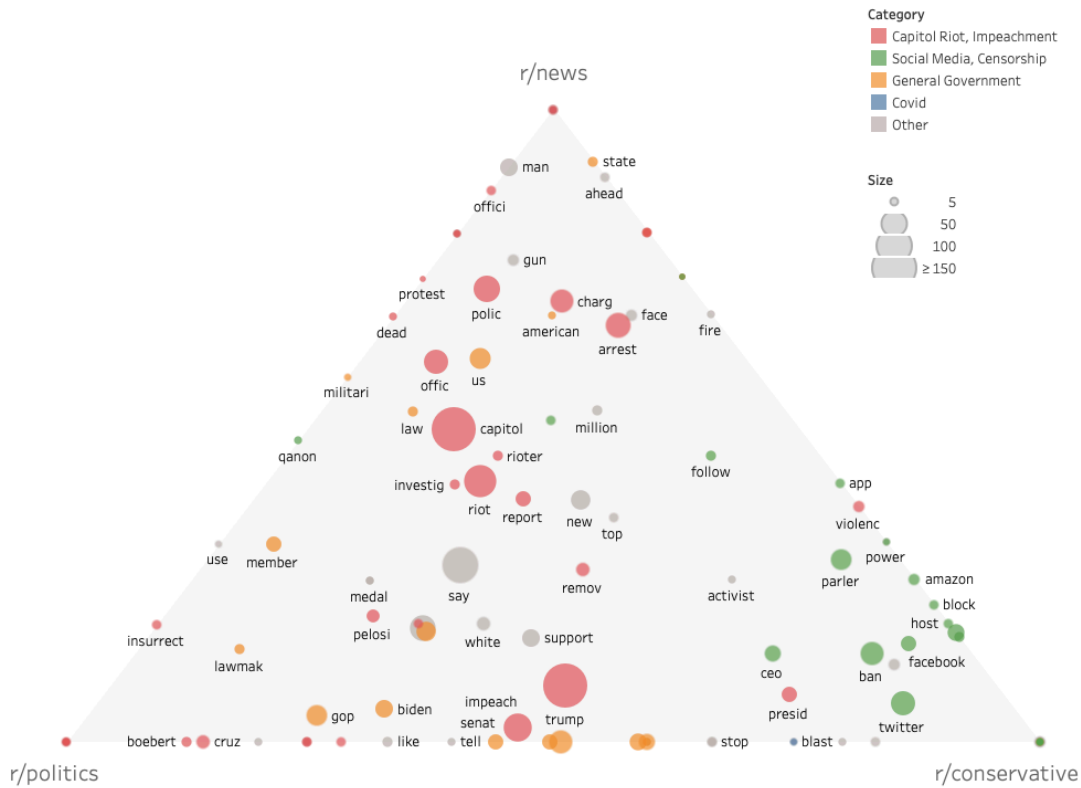
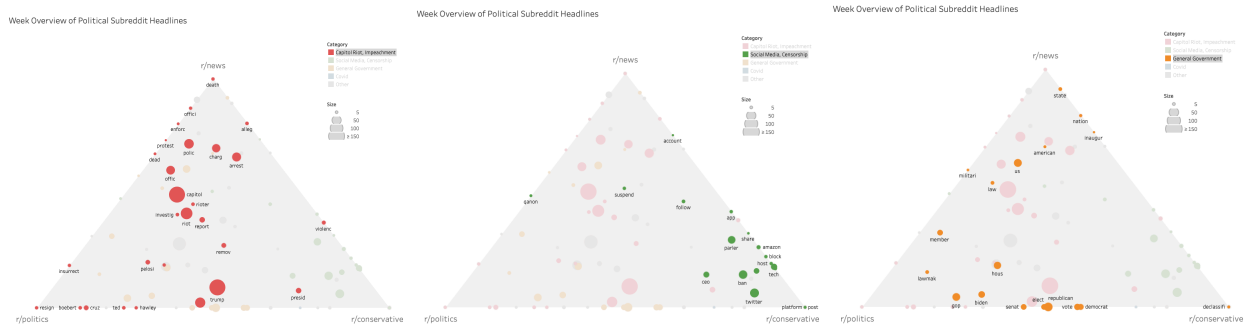


Figure 2: Most common word stems in top 50 daily political subreddit headlines, labeled



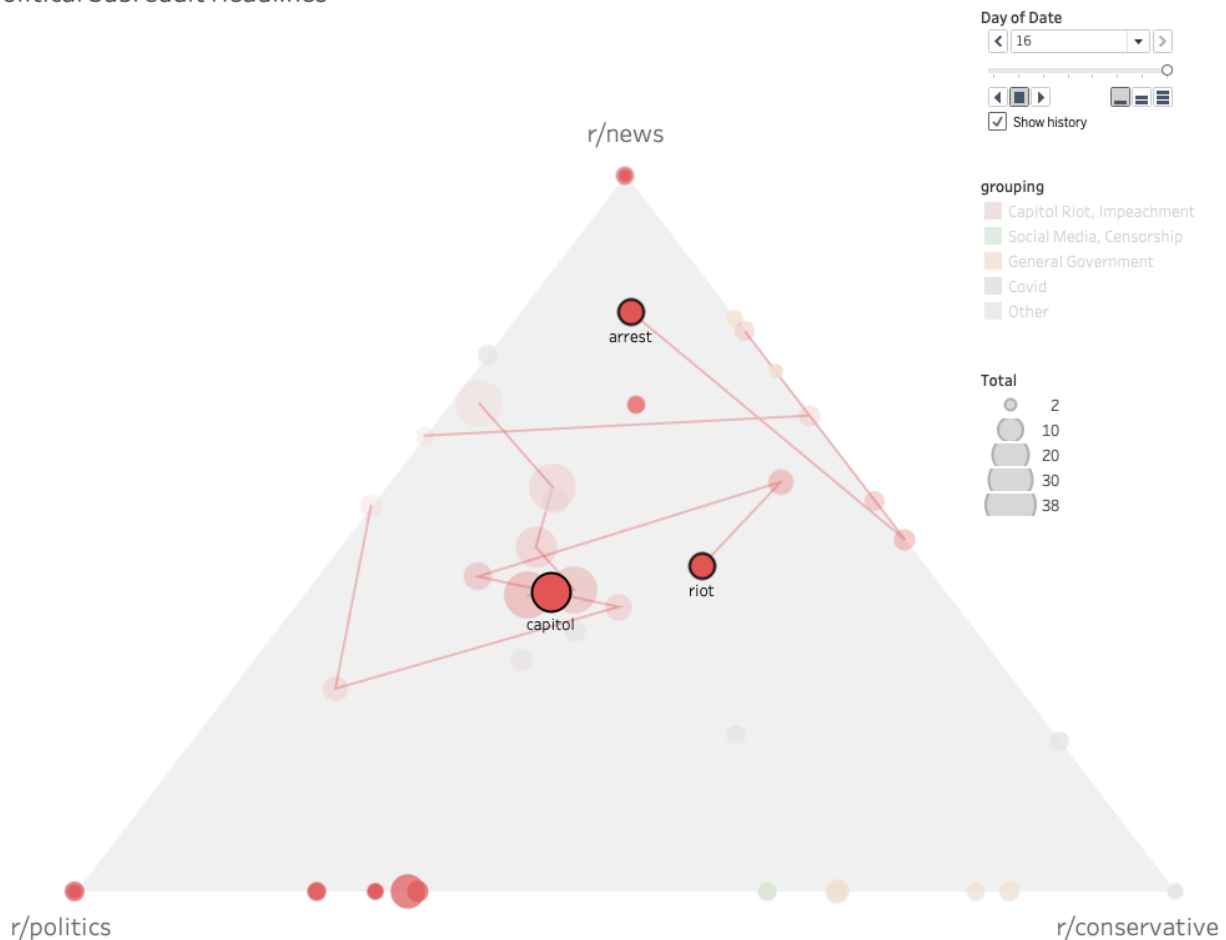
Figures 3, 4, 5: Highlighted categories from left to right: Capitol Riot and Impeachment, Social Media and Censorship, General Government

Notice how the vast majority of the green, Social Media and Censorship, data points are concentrated near the r/conservative corner while the red, Capitol Riot and Impeachment, data points are more aligned with r/news and r/politics. This means that r/conservative members are engaging with social media and censorship news (such as Trump's various account suspensions and Parler's removal) way more often than the members of r/news and r/politics. It is also clear that r/conservative members are not seeing as much news regarding the Capitol Riot and

impeachment since the red points are concentrated closer to r/news and r/politics. These plots show a discernible difference in the media consumed by varying political groups.

Specifically in regards to the Capitol Riot, the right have clearly interacted far less with the reports detailing the insurrection compared to the left and the middle which we can see by looking at the “capitol,” “riot,” and “arrest” word stems. Below shows how the subreddit interaction with these three words changed throughout the week:

Political Subreddit Headlines



Figures 6: Week history of “capitol,” “riot,” and “arrest” word stems

This shows how r/conservative members have been far less exposed to content regarding the Capitol Riot.

(As a side note, it is also shocking how infrequently all three subreddits have discussed the COVID-19 pandemic. The only mentions of “covid” come from r/news. We are seeing over 4000 deaths a day in the U.S. alone—that’s as if all the students in 8 [average sized high schools](#) died

every day. Yes, the insurrection deserves discussion, but we cannot downplay the ongoing severity of the pandemic.)

We can further see that each group interacts differently with the news by looking at the top comments. The following plots detail the most common word stems from the top comments.

Week Overview of Political Subreddit Comments

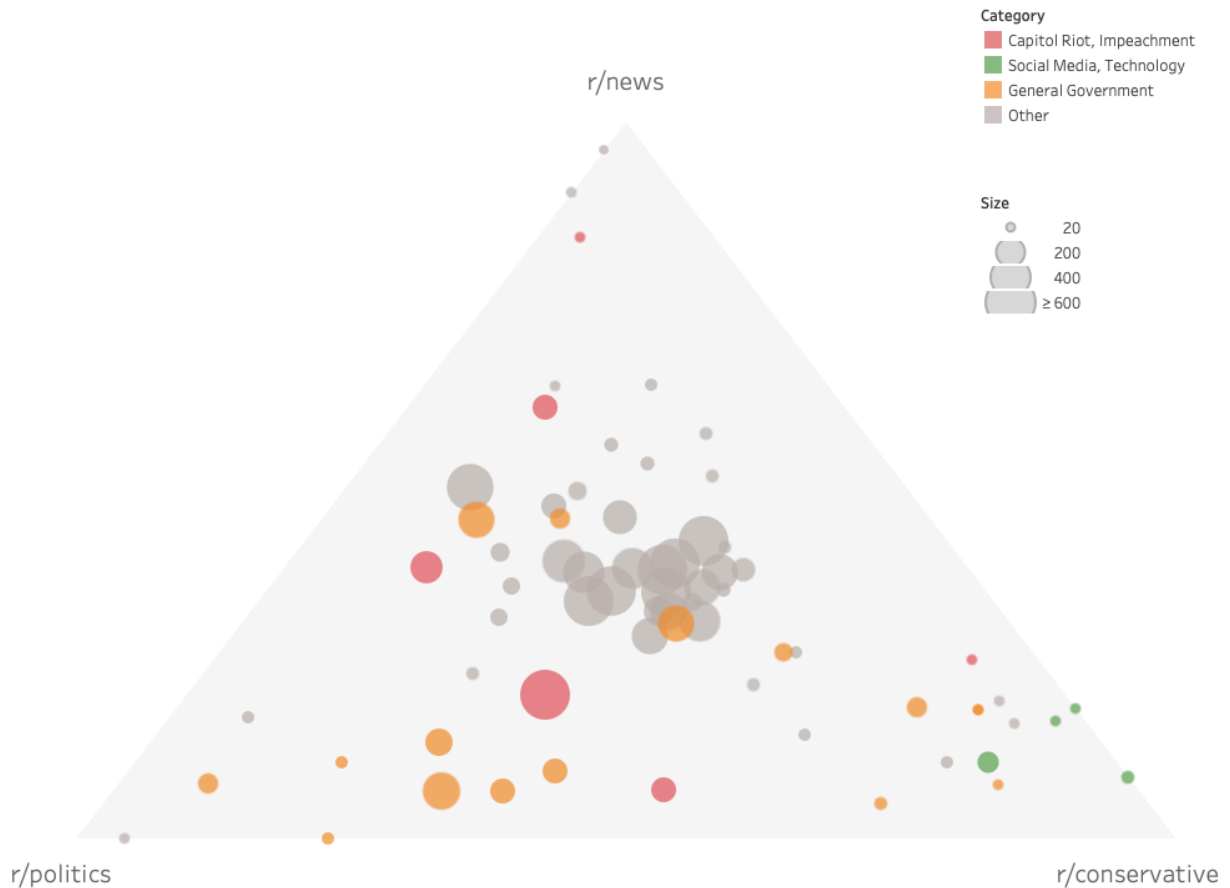


Figure 7: Most common word stems in top comments from top 50 daily political subreddit headlines, no labels

Week Overview of Political Subreddit Comments

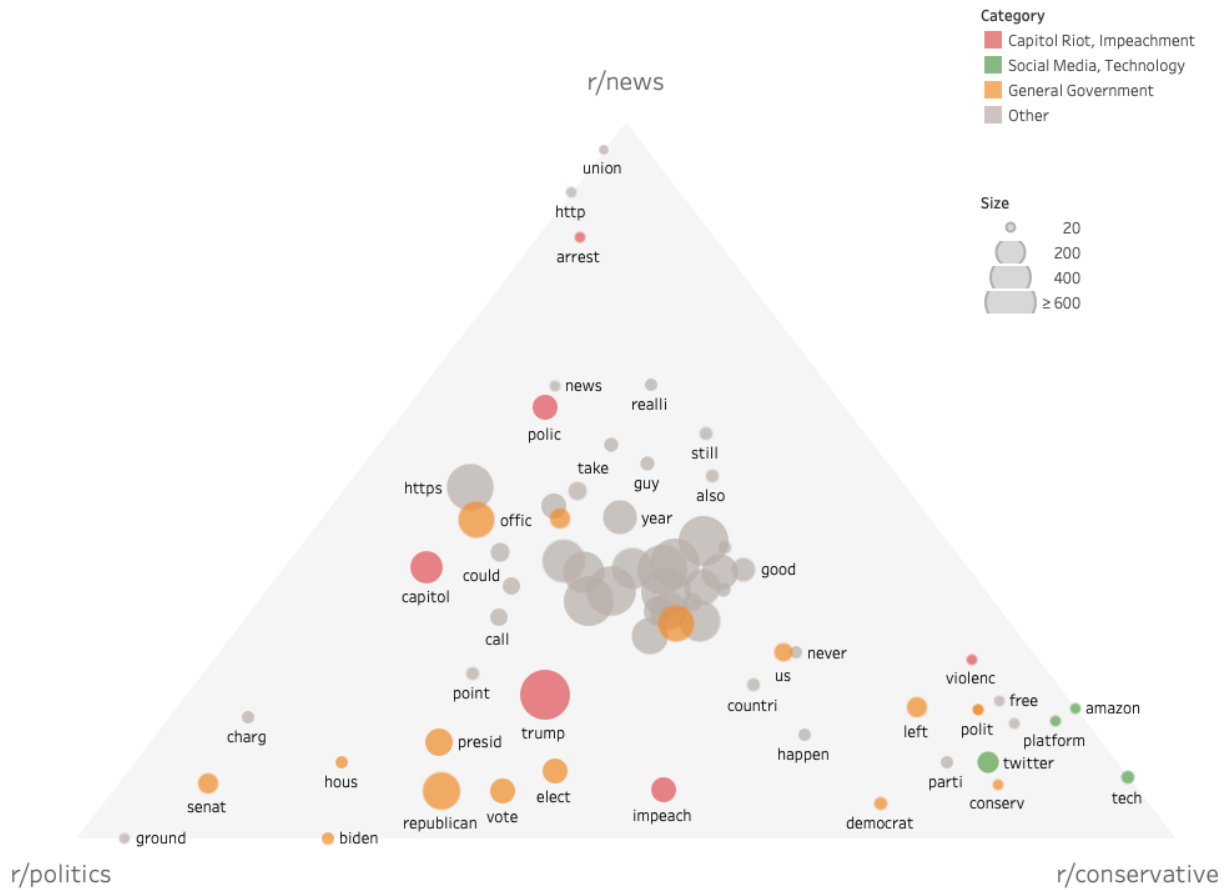
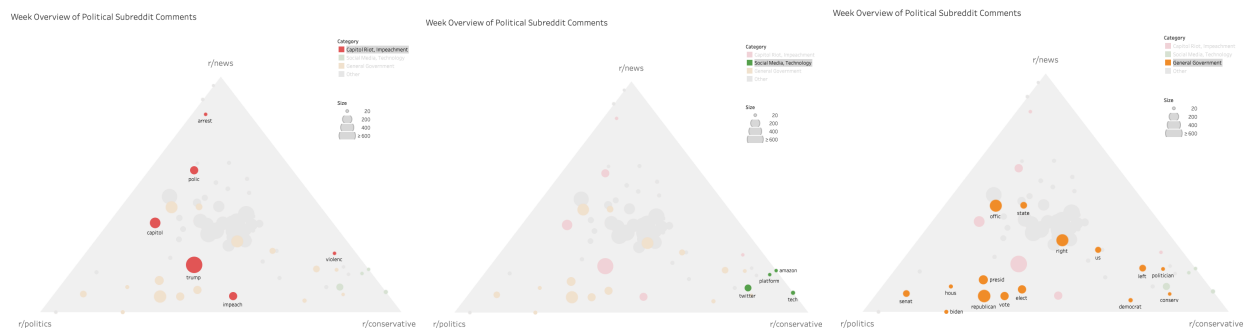


Figure 7: Most common word stems in top comments from top 50 daily political subreddit headlines, labeled



Figures 8, 9, 10: Highlighted categories from left to right: Capitol Riot and Impeachment, Social Media and Censorship, General Government

The gray data points in the middle make sense because they are common filler words such as “like,” “go,” and “would.” We see the sentiment confirmed that each political group is interacting with different news as the green points are again concentrated at the right and the red

points are more aligned with r/news and r/politics. Notice how “democrat” and “left” appear more frequently in r/conservative and “republican” appears more frequently in r/politics. These are likely comments pointing fingers at the failings of the other side. Such frustration is a byproduct of misinformation.

These personalized news feeds are harmful because they are susceptible to inconspicuous information warfare. Disinformation and misinformation are two critical tools to successful information war. From Dr. Joan Donovan’s [Media Manipulation casebook](#), disinformation is “information that is deliberately false or misleading, often spread for political gain, profit, or to discredit a target individual, group, movement, or political party.” On the other hand, misinformation is “information whose inaccuracy is unintentional, and spread unknowingly.” Consumers can easily regurgitate disinformation as misinformation due to the challenges of recognizing intentionally misleading information.

The intent of false information is to overwhelm a user, cause confusion, and undermine institutional trust (in a political context). These manipulative tools succeed by fabricating false information that capitalizes on our emotional responses to growing societal tensions such as institutional distrust, income inequality, climate change, and the rise of automation. More specifically, the manufactured false information elicits a strong emotion such as anger or excitement, pushing us to engage with and spread the information. In doing so, we lend our credibility to the false statements.

We can understand why social media networks are prime tools in amplifying misleading stories by examining how disinformation succeeds. First, disinformation based on a grain of truth makes deciphering a story’s veracity difficult. For example, hyperbolic and satirical headlines are successful formats because the hyperbolic or satirical bit evokes a strong emotion, and the sliver of truth makes it hard to debunk in a split second. Repetition and familiarity are also compelling mechanisms of disinformation. Repetitive stories become familiar, and [our brain treats that familiarity as added credibility](#). Memes are another common psychological tool. Memes rely on prior knowledge about an event. Using that knowledge to understand a meme inspires the feeling of connection to the community that shared the image. The effort exerted to digest the meme reinforces the subject matter. Additionally, memes are easily shareable and comfortably consumed.

False information also thrives on social media because it sells well. A novel story or headline is far more captivating than an objective report. Concretely, an [MIT study](#) found that on Twitter, “false news stories are 70 percent more likely to be retweeted than true stories.” The study also shows that “it takes true stories about six times as long [as false stories] to reach 1,500 people, and falsehoods are retweeted by unique users more broadly than true statements.” Thus, misinformation keeps us engaged and connected to our communities, social networks, and

devices. This constant and addictive attachment stemming from misinformation shows that false information helps keep social networks and technology providers profitable. Twitter even accepts that their network is ripe with false information, but they do not take responsibility to fix it stating in 2017: [“we, as a company, should not be the arbiter of truth.”](#) Misinformation keeps the user base active, so why should these companies be motivated to figure out a way to deter it?

Notably in recent history, the Russian government funded the St. Petersburg based Internet Research Agency (IRA) to run a widespread disinformation campaign to polarize the U.S., disrupt politics and elections worldwide, and cast a powerful light on Russia from 2012-2018 (see the [Senate Intelligence Report](#)). The Capitol Riot shows the utter success of this attack in deteriorating trust in electoral democracy and sowing division among the people of the U.S. (and it started *years* ago).

The Russian disinformation campaign succeeded by pitting a variety of Twitter accounts against one another. For instance, the IRA ran both “Right Troll” and “Left Troll” accounts. 617 Right Troll accounts were identified amassing in 663,740 tweets. These accounts rarely focused on traditional conservative policies such as taxes, regulation, and abortion. Instead, they spread “nativist and right-leaning populist messages” including supporting Trump, using the MAGA hashtag, and attacking Democrats. The accounts that contain identifying information were typically portrayed as young, attractive women. Overall, Right Troll accounts totaled nearly one million followers. The Left Troll category contained 230 accounts that amassed 405,549 tweets. The content focused on cultural identity with a strong spotlight on racial identity. However, these accounts undermined Hillary Clinton’s campaign. Right Trolls clearly supported Trump, and Left Trolls attempted to damage Clinton’s image while promoting Democratic issues.

I highly recommend exploring the IRA tweets through [Defending Democracy Together’s tool](#) to witness the sheer magnitude of the operation and to understand the struggle in identifying false information. One example surrounding the NFL kneeling protests of police brutality and racism highlights the coordinated attack to seed the polarization of our society. A Left Troll account tweeted in support which resulted in over 37,000 retweets:



@wokeluisa · 13 Mar 2018

Just a reminder: Colin Kaepernick still doesn't have a job, because in this country fighting for justice will make you unemployable
<https://t.co/AVC21iDXwb>

On the same topic, a Right Troll continuously berated the protests:



@barbarafortump · 12 Oct 2017

This @NFL player is protesting during the national anthem. Hours later, he's asking a cop for help. Oh, really? #TakeTheKneeToTheGroin <https://t.co/uNfeeipJw8>



@barbarafortump · 15 Oct 2017

Trump is scorned by degenerate rappers, distorted Hollywood, and cop-hating NFL players. Makes me proud that I voted for Trump! #trump45



@barbarafortump · 27 Oct 2017

LOL! NFL player who defied team ban with raised fist during national anthem just got terminated! #boycottNFL <https://t.co/Vk4PuQhks9>

Notice how the tweets from both sides are emotionally charged. The Left Troll makes the claim that “fighting for justice will make you unemployable” which pulls at the moral heartstrings and itches for engagement from either side (either a supporting “yes, this is so disturbing!” or an attacking “are you kidding me? He asked for it by being a cop-hating NFL player”). The Right Troll claims “Trump is scorned by...cop-hating NFL players. Makes me proud that I voted for Trump!” which is begging for a supporting “me too! #MAGA” or an attacking “you’ve got to be kidding me. Trump IS the degenerate and distorted elite.” The disinformation here has clearly been engineered to spread.

This information war is succeeding. The Capitol Riot clearly shows a disconnect in societal groups and an increasing distrust in electoral democracy and other institutions. These reactions are precisely the goal of widespread misinformation. Social media allows us to comfortably bathe in our own opinions which continually confirms our biases day in and day out. We rarely put ourselves in scenarios conducive to civil discourse about policies. Instead, topics have become increasingly emotional, to the point where it is hard to connect with someone holding an opposing view.

In order to combat this warfare, we all need to be aware that it exists. When we encounter a tweet, headline, or other post that makes us viscerally react, we need to stop and acknowledge what we are feeling and why. Before engaging with these posts that elicit strong emotions, we must understand that they specifically succeed on social media because our emotional reactions cause us to boost their spread. Do we really need to respond or share this post? Instead, it might be best to just put the phone down and walk away.

We also need to follow sources that express different opinions. Doing so is uncomfortable and frustrating, but it is necessary in order to understand the struggles afflicting opposing sides. We cannot continue to live in our rosy bubbles and expect societal fractures to heal themselves.