

NATURAL LANGUAGE PROCESSING

Twitter Topic Modeling:
#January6thCommitteeHearing

Introduction

Since Twitter is a major conversation platform for United States politics, The Washington Post would like to understand the topics that are trending within the January 6th Committee Hearings to get potential story ideas.

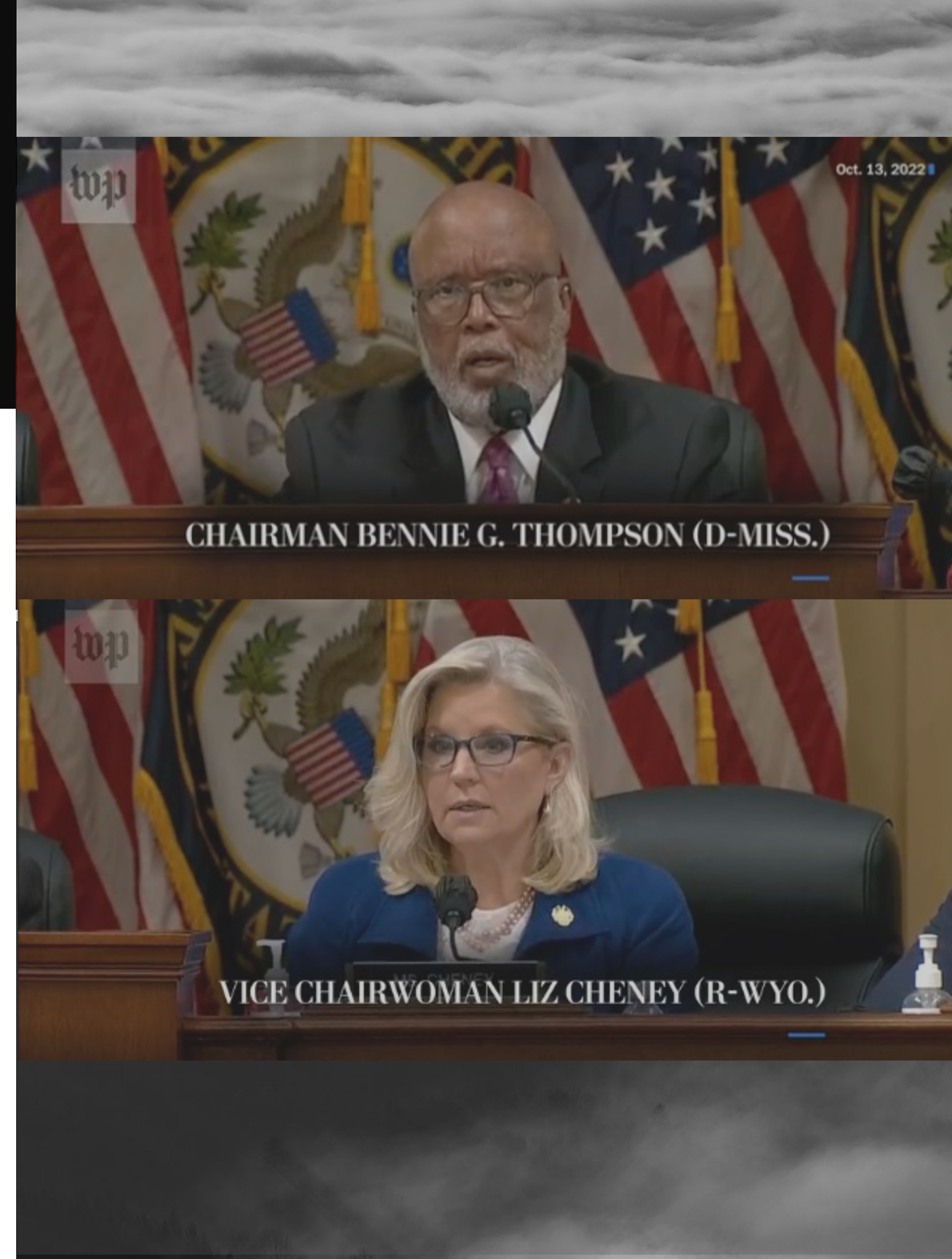


The Washington Post

Key Questions

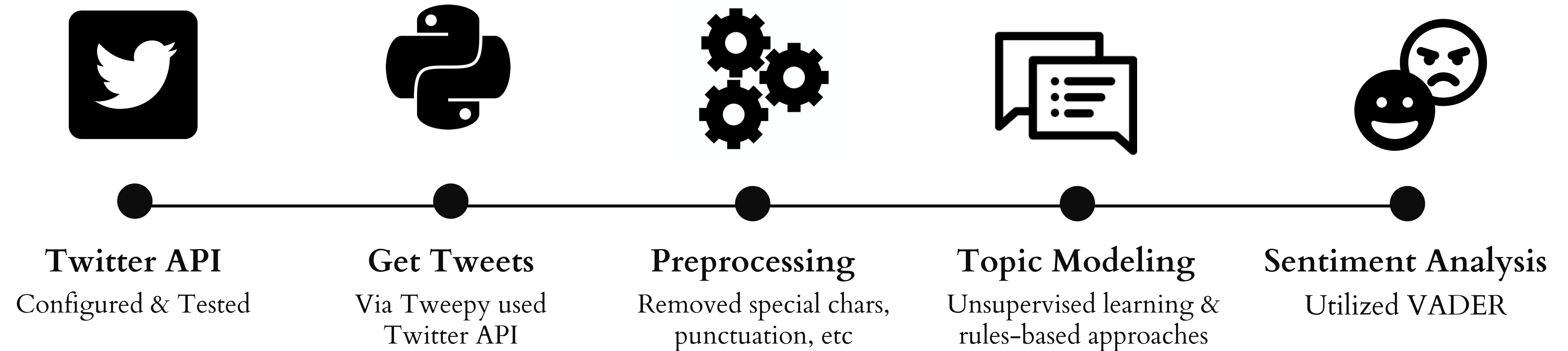
The January 6th Committee had a hearing on October 13th 2022 where they presented additional video evidence and voted to subpoena Trump.

- 🔑 What topics were most tweeted about during the Oct 13th hearing?
- 🔑 What was the primary topic associated with Trump?
- 🔑 What was the sentiment of the primary topic associated with Trump?



Getting to Answers

35,000 Tweets + Retweets



Topic Modeling

Methodology

Utilize a breadth of algorithms to uncover signals in the data that
lead to human-understandable topics

LSA

Matrix Factorization utilizing SVD on the
matrix of document terms

&

CountVectorizer

- Frequency of words in text
- Considers words that are abundant in corpus as most statistically significant
- Doesn't identify relationships between words

LSA

Matrix Factorization utilizing SVD on the
matrix of document terms

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TF-IDF

- Frequency of words in text **AND**
- Inverse Document Frequency downscales words that appear a lot across documents
- Helps in highlighting a word that is frequent in a document but not across documents

LDA

Probabilistic Modeling describes documents
by a distribution of word probabilities

&

CountVectorizer

- Frequency of words in text
- Considers words that are abundant in corpus as most statistically significant
- Doesn't identify relationships between words

LDA + Bigrams

Probabilistic Modeling & detect common
phrases using Gensim's 'Phrases()'

&

Gensim simple_preprocess

- Similar to CountVectorizer but has some additional pre-process techniques to make it easier

Matrix Factorization

Algorithm	Topic 1 Results	Topic 2 Results	Topic 3 Results	Topic 4 Results
LSA with CountVectorizer	trump, knew, responsible, called	trump, violence, democracy, mark	mark, democracy, gop, country	lost, stone, roger, video
	mcconnell, mccarthy, mitch kevin	attack, decided summoned, excuse	maga, without, love, overthrowing	help, coup yet, new
LSA with TF-IDF	kevin, backed, mccarthy, mitch, mcconell,	mark, democracy, violence, Hamill	decided, hatch, rudy, giuliani	demands, oath, unanimously, deserves
	responsible, called knew	Creating, correct, overthrowing, love	meadows, lost, yet, stone	history, voted, subpoena

Probabilistic Modeling

Algorithm	Topic 1 Results	Topic 2 Results	Topic 3 Results	Topic 4 Results
LDA	knew, trump, pelosi, amp	trump, knew, responsible, mcconnell	trump, maga, chris, thing	Trump, lost, decided, attack,
	today, like, still, fbi	called, mitch, backed, mccarthy, kevin	national, miller, person, acting	Coup, help, video, new
LDA with Bigrams	knew, trump, democracy, lost	trump, subpoena_donald, testify, voted_unanimously	trump, roger_stone, trump_lost, help	called, mitch_mcconnell, knew_trump, responsible
	American_people, break, trump_tried, accept	demands, oath_democracy, history_deserves	yet, mark_meadows, decided, rudy_giuliani	kevin_mccarthy, backed, thing

Matrix Factorization

Algorithm	Topic Name	Topic Name	Topic Name	Topic Name
LSA with CountVectorizer	Mitch + Kevin Knew	Hamill for Democracy	Hamill for Democracy	Roger Stone Video
LSA with TF-IDF	Mitch + Kevin Knew	Hamill for Democracy	Trump Hatched Coup with Meadows, Giuliani, Stone	Subpoena Trump

Topic Names

Mitch + Kevin Knew Trump Responsible

Mark Hamill for Democracy – Against Trump

Trump Hatched Coup with Meadows, Giuliani, Stone

Roger Stone Video

Subpoena Trump

Trump Lost Decided Attack

Probabilistic Modeling

Algorithm	Topic Name	Topic Name	Topic Name	Topic Name
LDA	Not Clear Enough	Mitch + Kevin Knew	Not Clear Enough	Trump Lost Decided Attack
LDA with Bigrams	Not Clear Enough	Subpoena Trump	Trump Hatched Coup with Meadows, Giuliani, Stone	Mitch + Kevin Knew

Mitch + Kevin Knew Trump Responsible

Adam Kinzinger #fella @AdamKinzinger · Oct 13 · 🇺🇸
Mitch **McConnell**.
Kevin McCarthy.
They both **knew Trump** was **responsible**.
They both **called** him out.
They both backed down.
That's cowardice - not leadership.
[#January6thCommitteeHearings](#)

1,752 9,771 47.9K

bill cochrane @CochraneBill · Oct 14
Replying to [@GOPLeader](#)
Mitch McConnell.
Kevin McCarthy.
They both **knew Trump** was **responsible**.
They both **called** him out.
They both backed down.
That's cowardice - not leadership.

Irfan Khan @IrfanEmmaJordan · Oct 14
Replying to [@bennyjohnson](#)
Mitch McConnell & Kevin McCarthy.
They both **knew Trump** was **responsible**.
They both **called** him out initially.
They both backed down.
That's cowardice - not leadership.

Mark Hamill for Democracy – Against Trump

john d wrobel @wrobocop01 · Oct 14
Replying to [@Resist_MAGA_GOP](#)
I wish we all followed **Mark Hamill**'s example of standing up for democracy or we may lose it!!

1

TheDeaner @TheDeaner79 · Oct 13
Replying to [@Resist_MAGA_GOP](#)
Mark Hamill is an intolerable douche.

Serious Trickster @EvolutionGlobe · Oct 14
Replying to [@Resist_MAGA_GOP](#)
Mark Hamill hasn't been correct, or right in the head, for years. He thinks he's part of the resistance but he fully supports the empire.

GOP Traitors to Democracy @Resist_MAGA_GOP · Oct 13
Mark Hamill is correct. You can love this country without creating violence by overthrowing democracy. [#January6thCommitteeHearings](#) [#HATH](#)



"PEOPLE COMPLAINING ABOUT MY ANTI-TRUMP TWEETS NEED TO UNDERSTAND: I LOVE MY COUNTRY AND I FEEL IT'S MY DUTY TO OPPOSE THIS DEMENTED SOCIOPATH WITH EVERY FIBRE OF MY BEING."
- MARK HAMILL

482 2,180 12.8K

Trump Hatched Coup with Meadows, Giuliani, Stone

StandForBetter.org @StandForBetter · Oct 13
NEW Video:

Trump Lost, yet he **decided to hatch** a coup with the help of Mark Meadows, Roger Stone, **Rudy Giuliani**, and others. Liz Cheney lays it out. I am never voting for a Republican.

Retweet this video: [#TrumpsCoupPlaybook](#)

[#January6thCommitteeHearings](#)
[#Jan6thHearings](#)



1:35 108.7K views

203 2,476 3,826

SmarderDanU @SmarderDanU · Oct 13
RT [@StandForBetter](#):
Trump Lost, yet he **decided to hatch** a coup with the help of Mark Meadows, Roger Stone, **Rudy Giuliani**, & others. Liz Cheney lays it out. Never voting for a Republican
[#TrumpsCoupPlaybook](#)
[#January6thCommitteeHearings](#)
[#Jan6thHearings](#)



2:07 108.7K views

From [StandForBetter.org](#)

15 19

Roger Stone Video



Trish @meinmelbourne · Oct 14

The smarmy, nihilistic **Roger Stone**, was shown in a Danish filmmaker's **video** footage from before the election: "Fuck the voting," Stone laughed, as he walked through an airport."Let's get right to the violence."
[@January6thCmte](#)
[#TrumpCoupAttempt](#)
[#RogerStone](#)



newyorker.com

Donald Trump, January 6th, and the Elusive Search for Accountability
The House-select-committee hearings are over, but will the former President ever be held responsible for the tragedy?



Adam @BrownsObsession · Oct 13

Replying to [@CiciBird](#) and [@ProjectLincoln](#)
There is a **video** on YT of **Roger Stone** talking to Alex Jones about creating a constitutional crisis if Trump **lost** the *2016* Election. This was always the plan.

1

1

33



Rima Regas, Blog#42 @Rima_Regas · Oct 13

Replying to [@JReinerMD](#)
He knew he **lost**. The **video** of **Roger Stone** shows what the plan was for contesting an election they knew they wouldn't win. This has nothing to do with narcissism and everything to do with being crooked.

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Subpoena Trump



Adam Kinzinger #fella @AdamKinzinger · Oct 13

We just voted **unanimously** to subpoena Donald Trump to testify UNDER **OATH**.
Democracy **demands** it.
History **deserves** it.
[#January6thCommitteeHearings](#)



1,609

2,380

17.2K



floridavoicesforprogress @PROGRESSIVES4FL · Oct 14

browardprogress: RT [@amprog](#): **Donald Trump** is at the center of the multistep scheme to overturn our election.

Yesterday, [@January6thCmte](#) voted **unanimously** to subpoena Trump to testify under oath. Now, he must answer for his actions.



0:51

1,188 views

From American Progress



The Boston Globe @BostonGlobe · Oct 14

The US House select committee investigating the attack on the Capitol **unanimously** voted to issue a **subpoena** to former president **Donald Trump** to testify. But what happens next? What does a **subpoena** mean?

Here's [@JamesPindell](#)'s analysis: [trib.al/75ZzpLs](#)



Jan. 6 committee hearing
October 13, 2022

Representative Liz Cheney

We are obligated to seek answers directly

0:32

1,245 views

CSPAN

Trump Summoned Rioters



Al Patten @al_patten · Oct 13

Replying to [@RpsAgainstTrump](#)
As the Jan 6th Committee has shown, **Trump** wanted there to be violence at the Capitol and he didn't care if the **rioters** he **summoned** and incited had weapons. In fact, he wanted them to be able to avoid the mags with their weapons. Indict, convict and jail this monster.

1



Adam Kinzinger #fella @AdamKinzinger · Oct 13

Trump is the author of the January 6th attack.
Trump summoned the rioters.
Trump goaded on their violence.
Trump excused the consequences.
[#January6thCommitteeHearings](#)

1,568

2,843

14.9K



MsLaura @mslauralibrary · Oct 13

Replying to [@DonaldJTrumpJr](#)
Hey, [@DonaldJTrumpJr](#), don't rule out that YOUR father, "[#DonaldTrump](#)", is the author of the [#January6th](#) attack.
[#Trump](#) summoned the rioters.
[#Trump](#) goaded on their violence.
[#Trump](#) excused the consequences"
[#January6thCommitteeHearings](#)

[#TrumpCoupAttempt](#) [#TrumpisaNationalDisgrace](#)

3

1

4



Charles Drummond @ccChuckD · Oct 13

Replying to [@Kramed67037](#) and [@AdamKinzinger](#)
Trump is the author of the January 6th attack.
Trump summoned the rioters.
Trump goaded on their violence.
Trump excused the consequences.

ALL CLEARLY TRUE. Have you decided to try to ignore the evidence put before you? If so, that's pathetic.

Trump Lost Decided Attack



julie brough @juliebrough7 · Oct 14

accept his loss but knew he had **lost**. When you [@MSNBC](#) pretend **Trump** didn't lead this **attack** on 1/6 and summon his MAGA army and he continues his seditious **attack** on our country I know you have **decided** you will accept autocracy in America and don't care one bit for our Democracy.

Show this thread



Peter Welch @WelchForVT · Oct 13

Today's January 6 committee hearing gave us more evidence of what we already knew: The insurrection was not a spur of the moment event.

It was a planned and orchestrated **attack** on democracy by Donald **Trump** who **decided** months in advance he would declare victory even if he **lost**.

10

11

29

Show this thread



99ermikeb @99ermikeb · Oct 14

Being the mental midget that he is, knowing that he understood he **lost** the election, then **decided** to **attack** our nation's capital, **Trump** still pushing the big lie, even though we know he knows that we know that he knows what the truth is:



Glenn Kirschner @glennkirschner2 · Oct 14

Trump's letter responding to being subpoenaed by the J6 committee is powerfully incriminating evidence that will be introduced against him when he's prosecuted. And those who helped him draft it are co-conspirators. [#JusticeMatters](#) video dropping later today.

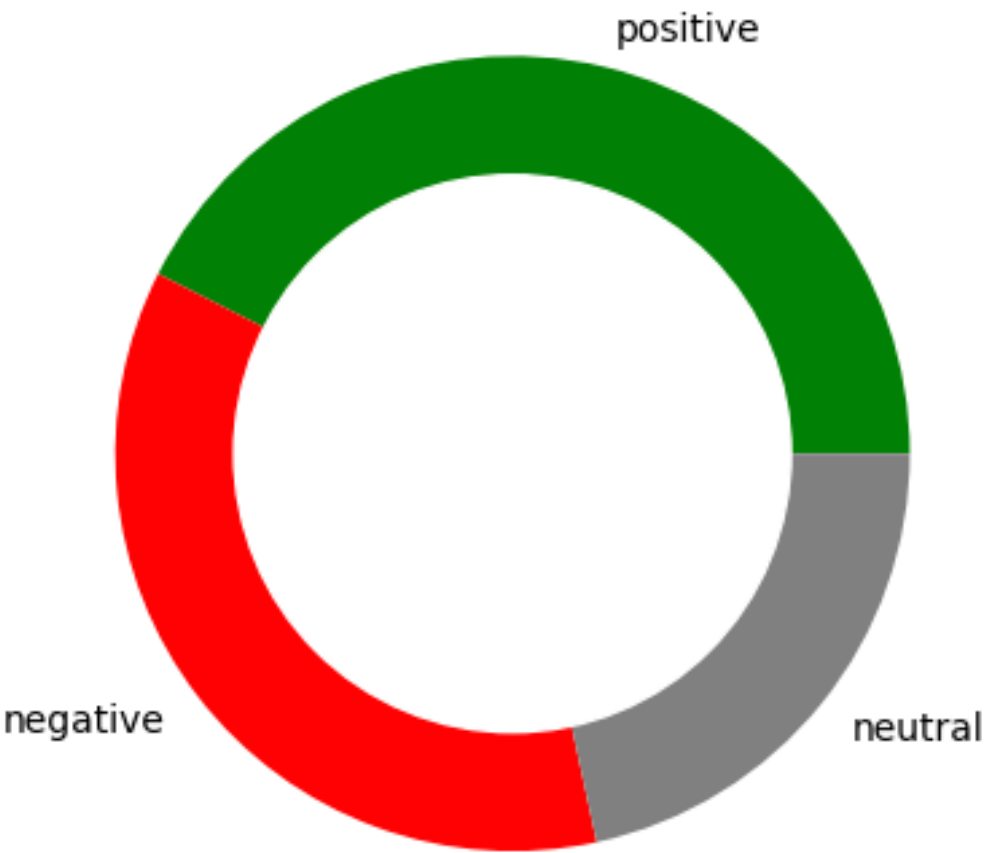


Sentiment

When looking at the conversation captured in its
entirety

Is VADER Sentiment making sense given the context of the conversation?

- Themes of negative conversation seem clear
- Positive conversation seems murky
- Prompts the question: Is the positive sentiment really a positive conversation?



Tweet	Neg/Pos	Compound Score
TRUMP LOST, KNEW HE LOST! You maga fools are all party to effin Treason	Neg	-0.88
ANGRY ANGRY ANGRY. It's way beyond bourbon	Neg	-0.87
Keep wasting time and money losers January6thCommitteeHearings	Neg	-0.72
Ugh. This shit again	Neg	-0.75
Hooooooooooly shit	Neg	-0.55
Fuck Fox News	Neg	-0.54
Distraction 101	Neg	-0.38
wow wow trumpisgoingtojail capitolriot nancypelos	Pos	0.82
Justice & Peace	Pos	0.78
Stunning. Stunning. Stunning. Stunning	Pos	0.85
Treat Trump like the Rosenbergs	Pos	0.63
Too funny 🤔 #January6thCommitteeHearings	Pos	0.44
Interesting	Pos	0.40
Joke	Pos	0.29



Thanks for Listening