# Emotional Framing in Congressional Tweets During the Capitol Riot

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**Keywords:** Emotion classification, Transformer models, Sentiment analysis

## 1 Introduction

Political discourse often relies on emotional framing to shape public perception, mobilize support, and frame events within broader ideological narratives. Social media platforms, and Twitter in particular, provide a direct channel for political actors to express such framing in real time.

This study focuses on U.S. congressional tweets surrounding the January 6, 2021 Capitol Riot, a moment of acute political crisis. Using a transformer-based emotion classification model fine-tuned on the GoEmotions dataset, combined with explainability techniques such as attention heatmaps and SHAP token attribution, we examine how emotional tone shifted before, during, and after the event.

By analyzing both macro-level (4-day) and micro-level (24-hour) time windows, and conducting case studies of prominent Democratic and Republican leaders, the work aims to identify not only which emotions were expressed, but also the rhetorical functions they served in crisis communication.

## 2 Methods

We detected emotional tone using the `SamLowe/roberta-base-go_emotions` transformer, a RoBERTa-base model fine-tuned on Google's GoEmotions dataset (28 emotion labels). To improve interpretability, we mapped these labels into broader functional categories (e.g., fear, anger, sadness, joy, pride, surprise, moral/empathic, disgust, neutral), enabling clearer comparison across parties and time periods.

Each tweet was classified to obtain the top predicted emotion, probability, and grouped category. Classification was run in batches with GPU acceleration, producing outputs for all five temporal datasets.

For rhetorical interpretation, we applied token-level explainability methods: attention heatmaps from the model's final layer and SHAP (SHapley Additive exPlanations)

values to highlight words driving each prediction. These visualizations reveal which lexical choices carried emotional weight in political discourse.

# 3 Dataset

We used tweets from official U.S. congressional member accounts, retrieved from the public `congresstweets` repository[1], filtering out non-member and committee accounts. The data was cleaned to remove retweets, mentions, URLs, and artifacts, and matched with metadata (`screen_name`, party, chamber) from the companion user file. For analysis, we produced five datasets: two *macro-level* (4 days before and after January 6, 2021) and three *micro-level* (24h before, during, and after the riot). In total, the final corpus contains over 11,500 tweets, each with timestamp, author, party affiliation, and processed text ready for emotion classification and explainability analysis.

# 4 Results

## 4.1 Macro-Level Analysis (4-Day Windows)

We compared emotion distributions in congressional tweets from the four days before (Jan 2–5, 2021) and after (Jan 7–10, 2021) the Capitol Riot (Figures 1–3).

***Overall.***

*Neutral* and *joy* dominated in both periods, but after the riot there was a clear shift:

- *Neutral* framing rose by about 5 percentage points;
- *Joy* dropped sharply (≈–15%);
- *Sadness* increased markedly (from ≈3% to >11%);
- Smaller rises appeared in *moral* and *fear*.

***By Party.***

Both parties reduced *joy* and increased *sadness*, but with different emphases:

- **Democrats**: strong shift toward *neutral* messaging (+8.9%) and moderate increase in *sadness* (+7.7%), reflecting a more institutional tone;
- **Republicans**: larger rise in *sadness* (+12.8%), increased use of *moral* appeals (+3.4%), and reduced *neutral* tone (–4.1%), indicating a more emotionally charged framing.

***Implications.***

In the immediate aftermath, Democrats tended to adopt institutional, procedural rhetoric, while Republicans relied more on moral appeals and affective framing. These differences illustrate how party-specific strategies shape emotional communication during crises.

[1] https://github.com/alexlitel/congresstweets

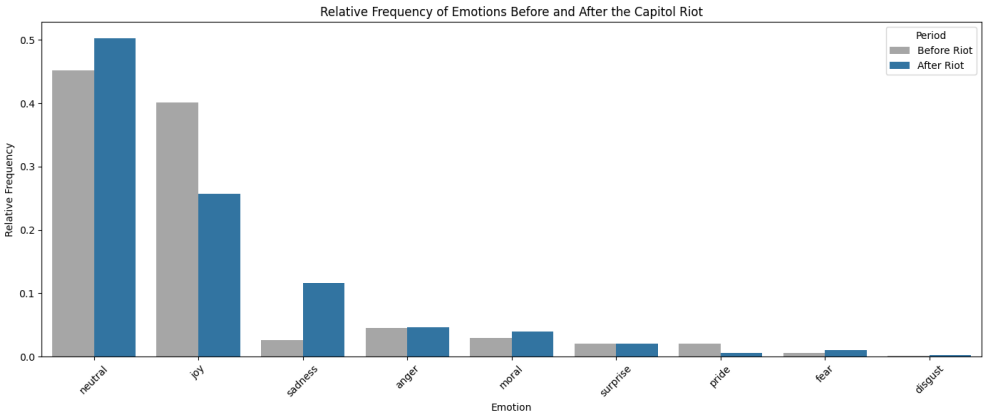


**Fig. 1** Relative frequency of emotions before and after the Capitol Riot (all members).

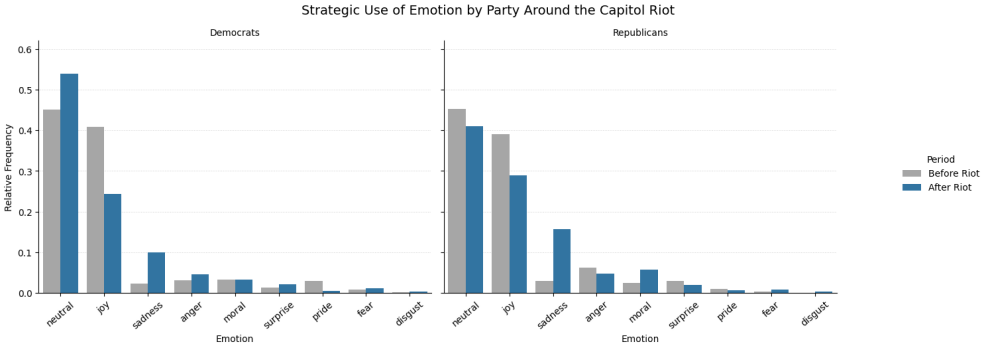


**Fig. 2** Relative frequency of emotions before and after the Capitol Riot by party.

## 4.2 Micro-Level Analysis (24-Hour Windows)

We examined three 24-hour periods:

- **Before Riot** (Jan 5, 19:00 – Jan 6, 19:00 UTC),
- **Riot Window** (Jan 6, 19:00 – Jan 7, 05:00 UTC),
- **After Riot** (Jan 7, 05:00 – Jan 8, 05:00 UTC).

Figures 4–6 show distributions and shifts overall and by party.

***Overall.***

- During the riot, *neutral* tone dropped sharply (from ≈0.57 to 0.35);
- *Anger* rose to about 0.16, and *moral* appeals increased to around 0.13;
- *Sadness* also rose noticeably;
- In the 24 hours after, *neutral* framing recovered to about 0.55, while *anger* and *moral* appeals fell but stayed above pre-riot levels.

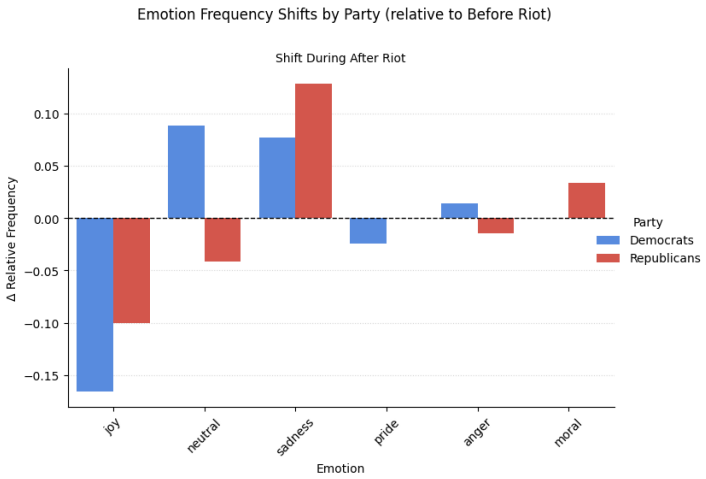


**Fig. 3** Change in relative frequency (After – Before) by party.

***By Party.***

- **Republicans**: largest riot-window shift, with *neutral* down –0.38, *anger* up +0.23, and *moral* appeals up +0.12;
- **Democrats**: smaller but clear movement away from *neutral* (–0.13) toward *moral* (+0.08), *anger* (+0.04), and *sadness* (+0.04);
- Post-riot, Democrats' *neutral* tone recovered more strongly, while Republicans maintained higher levels of *sadness* and *moral* appeals.

***Interpretation.***

The riot triggered a temporary breakdown of neutral, procedural rhetoric in favor of emotionally charged language.

- *Anger* and *moral* language surged as both sides condemned events and positioned themselves within moral narratives;
- Republicans' stronger emotional shift suggests a need to actively frame the events in value-based terms, possibly to assert legitimacy or distance from the violence;
- Democrats balanced emotional condemnation with quicker reversion to institutional tone, aligning with a strategy to project stability and governance continuity.

These patterns show how, even within hours of a crisis, parties diverge in how they balance emotion and institutional language, shaping early public interpretation of events.

## 4.3 Pelosi vs. McCarthy

We compare Nancy Pelosi's (Democrat) and Kevin McCarthy's (Republican) rhetorical and emotional framing during two moments of Jan 6, 2021:

- **During the riot**: urgent, real-time reactions;
- **After the riot**: reflective framing on accountability and interpretation.

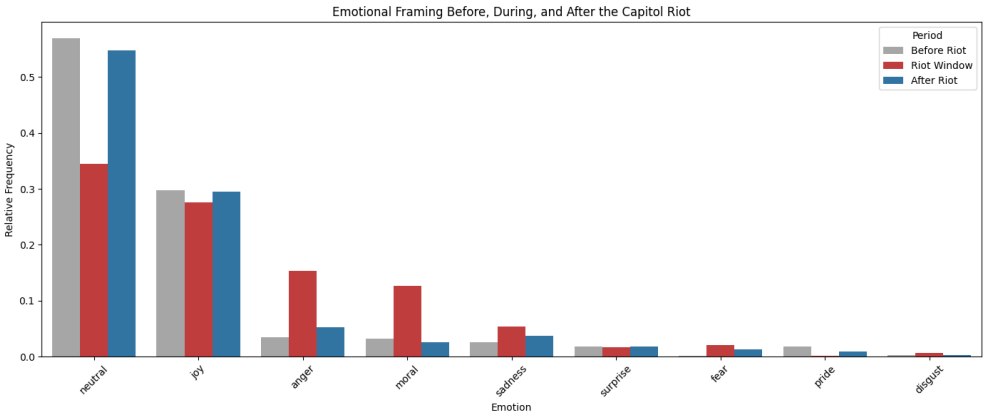


**Fig. 4** Emotion distributions in the 24h before, during, and after the Capitol Riot (all members).

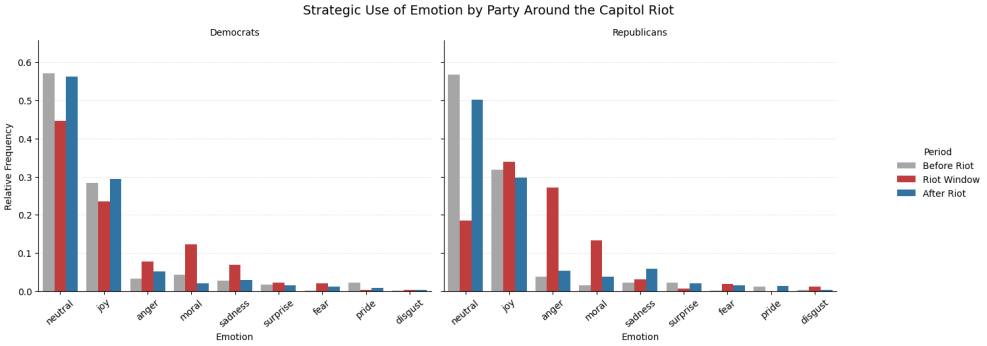


**Fig. 5** Emotion distributions in the 24h windows, by party.

For each tweet, we applied a RoBERTa-based GoEmotions classifier to identify primary emotions, and two explainability tools:

- *Attention heatmaps* (final layer) to highlight tokens most influential in classification;
- *SHAP token attribution* to quantify each word's contribution to predicted emotions.

This combination reveals emotional intensity, key rhetorical triggers, and contrasts in tone and framing between party leaders at critical moments. The following subsections qualitatively interpret these results, integrating emotion scores with visual outputs.

### 4.3.1 Pelosi vs. McCarthy During the Riot

During the riot, Pelosi and McCarthy adopted notably different rhetorical tones despite addressing the same unfolding crisis.

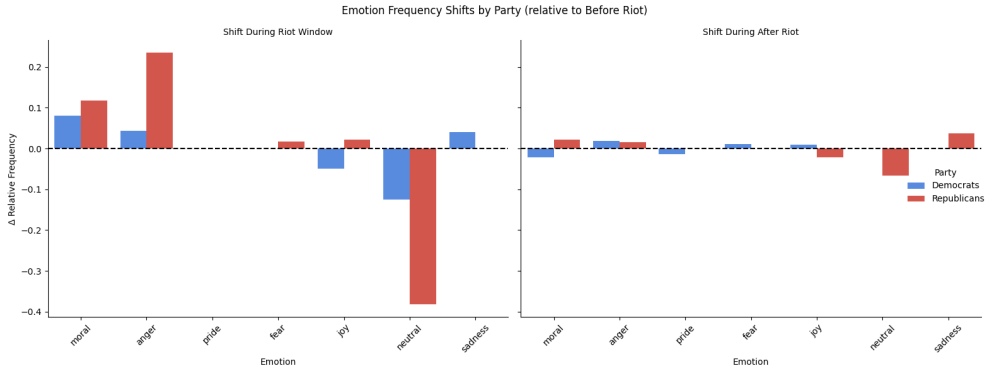


**Fig. 6** Change vs. 24h-before baseline by party. Left: Riot Window; Right: After Riot.

**Pelosi:** "@SenSchumer and I are calling on President Trump to demand that all protestors leave the U.S. Capitol and Capitol grounds immediately."

**McCarthy:** "What is unfolding is unacceptable and un-American. It has got to stop."

Pelosi's statement was classified as overwhelmingly *neutral* (0.964), with minor traces of *approval/joy* (0.009), *anger* (0.010), and *moral* appeal (0.006). Her language centered on procedural authority and direct instruction, focusing on urging President Trump to call for the protestors' departure. This reflects a controlled, institutionally anchored response with limited overt emotional content.

In contrast, McCarthy's statement was classified primarily as *anger* through *disapproval* (0.826) and *annoyance* (0.084), with minimal *neutral* (0.034) or *joy* (0.009). His rhetoric emphasized evaluative and norm-laden terms (*unacceptable*, *un-American*, *stop*), signaling strong moral condemnation of the events.

To illustrate the analytical process, Figures 7 and 8 present the attention heatmap and SHAP token attribution for McCarthy's statement, showing the lexical drivers of the *disapproval* classification.

## 4.4 Pelosi vs. McCarthy After the Riot

Following the events of January 6, both Pelosi and McCarthy issued statements condemning the attack, yet their rhetorical strategies diverged in tone and focus.

**Pelosi**: "Yesterday, American democracy came under attack — but we refuse to be bullied into abandoning our duty to work #ForThePeople."

**McCarthy**: "The violent mob responsible for this attack on the U.S. Capitol deserves the full consequences of their actions under the law. The FBI is seeking to identify individuals instigating violence in Washington, D.C. We are accepting tips and digital media depicting rioting or violence in and around the U.S. Capitol on January 6. If you have information, visit"

Pelosi's message combined condemnation (*attack*, *refuse*, *bullied*) with reaffirmation of democratic duty (*duty*, *#ForThePeople*). The model detected a blend of *anger* (0.353 disapproval; 0.055 annoyance), *neutral* tone (0.289), *sadness* (0.117), and a

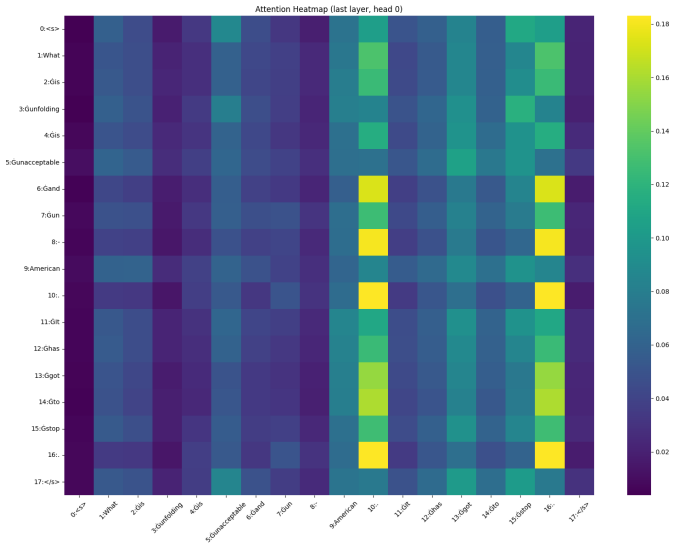


**Fig. 7** McCarthy during riot — attention heatmap (last layer, head 0).

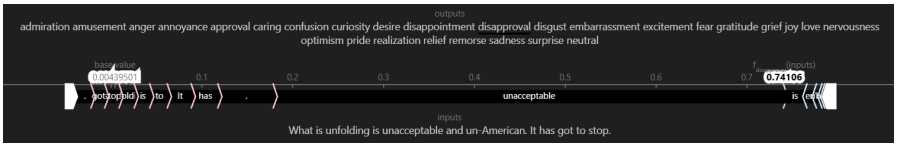


**Fig. 8** McCarthy during riot — SHAP token attribution for predicted *disapproval*.

minor *joy* component (0.073). This emotional mix projects both moral outrage and resilience, framing the riot not only as an assault on democratic values but also as a call to continued governance and collective purpose.

In contrast, McCarthy's statement was dominated by *neutral* tone (0.953), with very small contributions from *joy* (0.023 approval), *moral* (0.005), and *surprise* (0.003). His rhetoric emphasized the procedural legitimacy of legal accountability, detailing investigative actions and urging public cooperation. This reflects an institutional, law-and-order framing that prioritizes factual clarity and procedural authority over affective expression.

# 5 Conclusions

This study analyzed emotional framing in U.S. congressional tweets during and after the January 6, 2021 Capitol Riot, using transformer-based emotion classification and token-level explainability. By examining both multi-day and hourly time windows, we identified gradual trends and immediate shifts in rhetorical tone.

At the broader time scale, Democrats and Republicans moved away from celebratory language toward more somber tones, with increases in sadness, moral appeals, and neutral statements. Democrats showed a stronger shift toward neutral, procedural

language aimed at signaling stability, while Republicans displayed greater increases in moral appeals and anger, especially during the riot itself. Anger levels declined in the following day but did not return to pre-riot levels.

Case studies of Pelosi and McCarthy reflected these patterns: Pelosi emphasized procedural authority and urgency, while McCarthy expressed moral condemnation and emotionally charged criticism. In the aftermath, Pelosi combined condemnation with reaffirmations of democratic values, whereas McCarthy focused on justice-oriented, law-and-order framing.

This work demonstrates how combining transformer-based emotion detection with explainability methods can move beyond simple sentiment analysis to uncover the rhetorical functions of political language. The approach can be applied to other political events, media narratives, or cross-national comparisons, helping reveal how emotional framing,from institutional neutrality to overt emotional appeals, shapes public perception and partisan memory.

## Author's Declaration on Use of AI Tools

The ChatGPT-4o language model (OpenAI) assisted in parts of the analysis, drafting, and code refinement. Its outputs, used for summarization and wording suggestions, were reviewed and edited by the author, who retains full responsibility for all content and conclusions.