Proceedings of the Nineteenth International AAAI Conference on Web and Social Media (ICWSM 2025)

Hot Tweets and Cold Posts: Variation in US Congresspeople's Ideological Presentation on Twitter and Facebook Over Time

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Abstract

This work presents a novel observational study of US congresspeople's link-based news-sharing behaviors and ideological presentations across Facebook and Twitter. By analyzing the web domains these politicians share, we estimate their political ideologies and measure ideological extremity across the political and social contexts of these platforms. Our findings show that these politicians present as more ideologically extreme on Facebook than they appear on Twitter, particularly among Democrats. However, this difference is relatively small compared to the ideological shift between a politician's publicly funded official account and their campaign account—a shift that is roughly seven times larger. Finally, we observe that these changes are not uniform over time across parties; expressed polarization within the Democratic Party notably increased from 2013 to 2017 before stabilizing, while the Republican Party became markedly more polarized starting in 2020. While more research is needed to identify the specific affordances that contribute to more expressed polarization on Facebook and potential temporal dynamics between these platforms, this work highlights the limitations of studies that focus on single platforms and opens new avenues for future research into how differences across online social spaces may impact political polarization.

Introduction

Researchers continue to debate the societal impact of Western social media platforms. This uncertainty is especially salient with respect to political engagement, where early positive sentiment about social media's potential to effect political change has given way to more cynical perspectives among those in the US (Wike et al. 2022). This cynicism is not universal, however, as Wike et al. (2022) instead finds non-US users of social media tend to have more positive attitudes towards the platforms, with some research demonstrating the pro-social effects of politicians' use of social media (Bui 2016). As platform designers and stakeholders respond to these contrasting perspectives, elite users—such as politicians—play an outsized role in shaping norms within these spaces (Shin et al. 2022) and influencing how platforms handle trust and safety concerns (Alizadeh et al. 2022). Insight into how elites engage and present themselves across platforms could prove helpful in guiding platform designers in creating online spaces that incentivize pro-social engagement rather than anti-social behavior. This paper provides new insights into these cross-platform elite behaviors, a gap noted in Tucker et al. (2018).

We fill this gap by constructing parallel, multi-year collections of social media activity from members of Congress (MoCs), covering 2012-2022, with data from Facebook (operationalized via the now-defunct CrowdTangle platform) and Twitter[1] (via the also-defunct Academic Researcher API). Using link-sharing behaviors, which have been shown to capture ideological signals well (Gentzkow and Shapiro 2010; Messing, Kessel, and Hughes 2017), we build on approaches described by Eady et al. (2025), Robertson et al. (2018) and Golovchenko et al. (2020) to estimate MoC ideological presentation across platforms; between official and campaign-funded accounts; and over time.

To examine MoCs' online ideological presentations, we address the following research questions:

RQ1. To what extent do MoCs differ in their ideological extremity across Facebook and Twitter? Scholars offer different views on how MoCs present themselves on Twitter and Facebook. For example, Twitter/X has often been characterized as a platform for short, 'hot take' messages aimed at a politically active audience (Cohn and Quealy 2019), which may encourage more ideologically extreme content. At the same time, politicians have often used Twitter to engage with journalists and shape news (Kreiss, Lawrence, and McGregor 2018), which may elicit a moderating influence, as they anticipate their content will receive broader journalistic attention. Similarly, Facebook, as a much larger platform, likely attracts a more moderate and less politically engaged audience, which could prompt politicians to adopt a more centrist tone. Alternatively, Facebook's more private-focused affordances, where the platform makes profiles and social media behavior private by default, may also allow MoCs to directly engage with their core, partisan supporters, potentially fostering more extreme messaging. These differing perspectives yield our first research question: Do MoCs appear more ideologically extreme on Facebook or Twitter?

[1]Even though Twitter—now X—has rebranded and changed ownership, we refer to it as "Twitter" throughout, since the behaviors studied occurred before the acquisition.

RQ2. How do MoCs' differences in ideological presentation across platforms compare to pre- and post-election differences? Research suggests that politicians adopt more moderate ideological positions following election periods (Cigler, Getter, and Cigler 1977; Hirano et al. 2010; Hummel 2010; Agranov 2016; Macdonald et al. 2025)—a phenomenon referred to as the "post-election moderation effect". At the same time, a recent panel study shows that affective polarization remained stable and high before and after the 2022 US midterm elections, regardless of whether a respondent's preferred candidate won (Fasching et al. 2024). This stability suggests audiences may be unmoved by this post-election moderation; in social media spaces, where one's posts are memorialized, this stability may pressure politicians to remain consistently extreme. We therefore investigate whether this effect holds on Facebook and Twitter. This comparison also allows us to contextualize shifts seen in **RQ1** to shifts in political dynamics—that is, we can compare a politician's move from Facebook to Twitter to that same politician's behavior pre- and post-election cycles.

RQ3. What patterns exist across political parties and platforms over time? A critical aspect of these platforms is that they are not static spaces; rather, they add new features, change policies, and evolve. The political world is similarly dynamic and evolving, with evidence that the Republican party has been moving further to the ideological right, driven by Republican elites like the Tea Party (Walters and Skocpol 2023) and President Trump (Abramowitz and McCoy 2019). This shift is further influenced by changing trends in attitudes toward science (Lee 2021) and progressive attitudes (Baldassarri and Park 2020). We analyze these dynamics by estimating party-level ideological trends over our multi-year period, assessing whether the narratives of increasing Republican extremity are reflected in MOCs' online self-presentation.

Findings

Our findings build on a collection of 729 public Facebook pages and 725 Twitter accounts across 758 MoCs serving in the 112th-116th sessions, covering from 2012 to the end of 2022, comprising approximately 1 million Facebook posts and 2.7 million Twitter posts from these accounts. Using web domain-level estimates of partisan bias provided by Robertson et al. (2018),[2] we estimate MoC-level trends in ideological extremity across Twitter and Facebook, compare these differences to a sample of MoCs' campaign-oriented accounts, and decompose them into annual trends.

Our findings from these analyses suggest that, on average, politicians are more extreme on Facebook than on Twitter. Putting this result in context, however, these ideological differences across platforms are *approximately seven times* smaller than the difference between a MoC's official account and their campaign-specific account. Moreover, when assessing over-time trends, this extremity is not uniform, with MoCs on Facebook appearing significantly more extreme in the early/late 2010s but not mid-2010s. At the party level, results are also non-uniform: From 2012 to 2017, Democrats became more ideologically extreme in their online presentation, whereas in 2020 and after, Republicans see a marked increase in extremity in their online presentation (it is unclear whether this trend results from the 2020 election cycle or reactions to the COVID-19 pandemic). These findings open new questions concerning how political elites present themselves in multiple spaces—particularly germane to the current fractured information space—and partisan evolution of these online spaces, especially in regards to directionality of partisan pressures in online platforms; e.g., audiences pushing their representatives or vice versa, as in Barberá et al. (2019), or an elite's behavior on one platform pushing them on others. This paper also lays bare a concern in studying this fragmented information space, as this analysis would be difficult to replicate with current constraints imposed on data collection.

[2]Each web domain has a score representing the proportion of Democrats and Republicans who have shared this domain, with negative values indicating a more Democrat-leaning audience and positive values indicating stronger Republican lean.

Related Work

Social Media Polarization Dynamics

The relationship between social media use and political polarization has been extensively studied, with several prominent theories about this phenomenon. The selective exposure hypothesis (Garrett 2009) posits that social media platforms foster the creation of echo chambers (Del Valle and Bravo 2018; Törnberg 2018; Karlsen et al. 2017; Dubois and Blank 2018; Conover et al. 2011a; Sunstein 2001) or filter bubbles (Bakshy, Messing, and Adamic 2015; Pariser 2011), where users self-segregate into ideologically homogeneous clusters, avoiding opinions that challenge their existing beliefs. This lack of exposure to competing perspectives is hypothesized to create a "breeding ground" for more extreme issue positions, thereby amplifying polarization (Sunstein 2001, p. 4). Supporting this perspective, Lefebvre, Deroy, and Bahrami (2024) shows that confirmation bias can independently generate group-level polarization, even in the absence of structural or relational influences. Wojcieszak et al. (2022) also provides evidence that users overwhelmingly prefer ideologically congruent content when engaging with political elites on platforms like Twitter. A 2020 study of 208 million US Facebook users similarly showed ideological segregation of the audiences for news is high with respect to exposure and increases for engagement (González-Bailón et al. 2023).

Despite these results, recent research has questioned whether such factors are the primary drivers of polarization, pointing to empirical evidence that users are not entirely isolated from opposing views—e.g., Bakshy, Messing, and Adamic (2015). While users may rarely reshare content from the opposing side, studies have shown that they are nonetheless exposed to these perspectives (De Francisci Morales, Monti, and Starnini 2021; Vaccari et al. 2016; Barberá et al. 2015; Bakshy, Messing, and Adamic 2015; Colleoni, Rozza, and Arvidsson 2014). Törnberg (2022) ar-

gues that digital media exacerbate polarization not by isolating individuals but by encouraging cross-cutting interactions that align diverse conflicts along partisan lines. This phenomenon, known as partisan sorting, leads to more ideologically homogeneous communities within polarized networks. Similarly, Tokita, Guess, and Tarnita (2021) demonstrate that exposure to polarized information ecosystems can restructure social networks, reinforcing political sorting while reducing their overall efficiency in diffusing diverse information. Nyhan et al. (2023) find that exposure to content from like-minded sources on Facebook around the time of the US 2020 election had no impact on affective or ideological polarization. Given the substantial body of work documenting the impact of political elites on voter attitudes and behaviors (Slothuus and Bisgaard 2021a,b; Pink et al. 2021; Druckman, Peterson, and Slothuus 2013; Levendusky 2010), it is essential to understand how platform selection interacts with elite ideological presentation at a systemic level.

Estimating Political Ideology from Social Media

This paper focuses on inferring the political ideology of accounts, typically measured on a liberal-to-conservative scale or by determining whether users identify more with liberals or conservatives (Treier and Hillygus 2009). For MoCs, a substantial body of literature has examined their behaviors, much of which has focused on ideological presentation. In political science, DW-NOMINATE is a well-established ideology estimator that uses Congressional voting records (Poole and Rosenthal 2001) to place MoCs into a two-dimensional space, where the "primary dimension through most of American history has been 'liberal' vs. 'conservative'." Of particular issue in that literature, however, is the relatively coarse-grained temporal insight researchers can get from such methods. Prior work has instead proposed methods for inferring this ideology from digital trace data, e.g., developing models based on the language used in social media (Temporão et al. 2018) or the hashtags shared therein (Conover et al. 2011b). The more successful implementations of ideology models, however, leverage the network structures present in online social platforms. For example, Conover et al. (2011b) has shown retweet networks outperform language- and hashtag-based approaches for identifying liberal/conservative political alignments. Barberá (2015) has extended network-based models with friend/follower relationships to not only identify the political party of an account but also recover a score of its political ideology, validated against DW-NOMINATE.

Despite their widespread application, these methods tend to focus on a single social media platform, introducing significant problems when applied across platforms. Linguistic models that predict ideology, for example, are likely to breakdown if trained on one social platform and applied to another, as Twitter posts have a distinct style due to their length constraints, while Facebook or Reddit lack such limits. Similarly, hashtags are used far more often on Twitter than on Reddit, limiting the effectiveness of hashtag-based methods primarily to Twitter and, to some extent, Facebook. Network-based methods share similar challenges because friend and follower networks may differ significantly between platforms, or the platforms may not support comparable relationships. For example, Facebook has bi-directional friendships, where both users must agree to connect, while Twitter uses a directed follower system, where one person can follow another without mutual approval. Further, focusing on a single platform makes it inherently difficult to compare behavior *across platforms*, exacerbating the paucity of cross-platform studies (Tucker et al. 2018). Given the average American internet user engages across multiple online social spaces (Smith and Anderson 2018), and considering the recent fragmentation of the social media ecosystem, it is crucial to enhance our understanding of elites' strategic decisions about which platforms to use and how to present themselves across these spaces in order to design more pro-social digital environments.

Constructing Pro-Social Online Spaces for Political Engagement

An additional motivation for this work is to understand how different platforms, their affordances, and interventions interact with self-presentation, such as ideological expression among political elites. Previous studies, such as DeVito, Birnholtz, and Hancock (2017), have investigated how social media affordances influence self-presentation, but much of this work has focused on typical users rather than elites. Other work, focusing specifically on political elites (Kreiss, Lawrence, and McGregor 2018; Abidin 2017), demonstrates that politicians consider specific platform affordances and audiences when cultivating and engaging their audience. It remains unclear whether these strategic choices drive major differences in their self-presentation across platforms. An important contrast comes in the form of media elites and newspapers, where Hase and Scharkow (2023) shows German newspapers are comparatively limited in how they engage across online social spaces.

What is clear from the literature is that online spaces—and political elites' presence within them—have the potential for positive, pro-social outcomes, such as enhanced constituency informedness. Multiple studies have demonstrated this effect in the US (Allcott et al. 2020, 2024) and abroad (Bui 2016; Asimovic et al. 2021; Asimovic, Nagler, and Tucker 2023). These matters are complicated by concerns around the *quality* of this informedness (Haugsgjerd and Steen-Johnsen 2023) and well-being (Allcott et al. 2020). Likewise, while the "post-election moderation effect" may lead politicians to more-moderate positions, panel studies of voters find little support for this effect (Fasching et al. 2024), enhancing opportunities for elites to help moderate their constituencies. Hence, the research presented herein offers valuable insights into how political elites navigate the increasingly fragmented digital landscape, and how platform developers, moderators, and regulators can work to enhance these spaces. These results also support future studies of how political elites respond to major platform-level moderation interventions and violent events, such as the January 6 insurrection (Buntain et al. 2023b), which can increase online hostility (Rasmussen and Petersen 2023).

Datasets and Collection

Here, we describe how we construct our cross-platform dataset of MoCs, covering 2012-2022 and the majority of MoCs in the 112th-116th Congressional sessions. To that end, we first describe how we identify MoC accounts on Facebook and Twitter, then how we collect their data, and finally provide summary statistics on these collections.

A Dataset of Politicians' Social Media Accounts

We link US MoCs to their social media accounts by leveraging data from the @unitedstates project,[3] an open-source repository of data and tools for analyzing the United States government. This dataset is constructed by parsing web pages about US MoC to identify their social media profiles across multiple platforms, including Facebook and Twitter. The project focuses on MoCs' publicly funded accounts and is maintained through a combination of manual updates and automated data imports.

Our analysis requires extensive historical behavioral data, including records from both current and former elected officials. As such, we expand our collection to include the 112th through the 116th US Congressional sessions, spanning 2012–2021, a period when social media gained widespread popularity and became a mainstream tool for political communication. Our dataset also includes behavior from a majority of politicians in the 117th Congress (84%). The @unitedstates project data, publicly available on GitHub, typically provides social media account information for members of the current congressional session, focusing on *official* MoC accounts—i.e., those managed with public funds—while explicitly excluding *campaign* accounts. We access the official account data for MoC across all congressional sessions through GitHub's version control system, which tracks and records all changes to the repository by the project over time. See Table 1 for cross-session MoC statistics.

Separating Politicians' Official and Campaign Accounts To examine the pre- versus post-election dynamics central to **RQ2**, we require an additional set of campaign-oriented accounts on both platforms—data not available through the @unitedstates project. To construct this set, we randomly sample 30 politicians from the 112th-116th sessions, creating a set of 150 MoCs. We identify their campaign accounts by searching both their campaign websites and social media platforms. These accounts are often clearly distinguishable from the official accounts by their handles. For example, Steve Chabot's campaign handle is "@chabotforcongress," while his official handle is "@RepSteveChabot" account. Similarly, Susan Collins's uses "@collins4senator" for her campaign, while her official account is simply "@susancollins." From the 150 politicians sampled, we have identified 114 unique campaign accounts on Facebook and 114 for Twitter. Of these politicians, 100 have campaign accounts on both platforms.

Session	MoCs	Facebook	Twitter
112^{th}	547	361	353
113^{th}	549	426	409
114^{th}	541	453	438
115^{th}	556	494	482
116^{th}	535	532†	531††

† – Two of the three missing Facebook politicians retired early and had no available page, while the last had no Facebook page listed on her official website.

†† – Of the four missing MoCs, one retired and had no active account; a second account has an account but no tweets; and the remaining had no identifiable Twitter accounts.

Table 1: Social Media Account Statistics for MoCs Across Sessions. "MoCs" represent the total number of Congresspeople in a session, while Facebook and Twitter columns express how many MoCs have accounts in our datasets.

[3]https://theunitedstates.io/

Collecting Social Media Data

Facebook Data To collect politicians' public posts on Facebook, we leveraged the CrowdTangle API (2019). Specifically, we have collected posts from politicians' official and campaign public Facebook pages. Out of 741 pages identified in the @unitedstates project data, we collect 1,045,595 posts from 729 pages. The remaining 12 pages contained no posts. On average, each page in our dataset includes 1,434 posts (σ=1,247). As our approach to measuring politicians ideological presentation leverages the domains to which these MoCs link, we calculate that, on average, 43% of posts per page contain a link.

Twitter Data We have collected tweets from 725 official and campaign-oriented accounts using Twitter's Researcher API. In total, we gathered 2,762,737 tweets, with an average of 4,236 posts per account (σ = 4,211). On average, 39% of the tweets contained a link, meaning more than one-third of politicians' posts included a link.

Unshortening Hyperlinks This study's method for estimating ideology relies on domain-level link sharing. However, many links within social media platforms are shortened (e.g., via bit.ly), obscuring the full URL and domain. Hence, we use the Python package `urlExpander` (Yin 2018) to expand shortened links and recover the original domains.

Data Artifacts

While the analysis herein focuses on news-sharing behaviors among MoCs, the data collected for this study contains a variety of additional artifacts, primarily around the text these MoCs share and, on Twitter, the other actors with whom these MoCs engage. The text shared is embedded in the raw data collected from these platforms. Additionally, this data includes engagement metrics associated with each post; since this data was collected retrospectively, often several years after posting, these metrics should be relatively stable. Lastly, the data included in these collections contains links to media shared by these politicians, which could be used for further multi-modal analyses, such as those in Xi et al. (2020) and Joshi and Buntain (2024). All data collected

for this project is available online.[4]

Methods

As this paper compares ideological presentation across social networking platforms, we first describe how we estimate politicians' political ideologies from social media data, followed by our approach to addressing each research question.

Inferring Politicians' Ideology

To estimate political ideology, we analyze hyperlink sharing patterns from politicians' social media data, focusing on top-level domains shared, as have been shown to be ideologically discriminative (Messing, Kessel, and Hughes 2017; Mitchell and Weisel 2014; Eady et al. 2025; Greene 2024). From the Facebook and Twitter data, we extract these domains to build a matrix of politicians and domains, with each cell representing how often a given MoC has shared a specific domain.

To provide comparison with similar work on ideology estimation (Buntain et al. 2023a; Robertson et al. 2023; Muise et al. 2022; Hosseinmardi et al. 2021), we use the large collection of domain-level ideology scores from Robertson et al. (2018). This collection includes a left/right estimate for 19,022 domains shared by Twitter users, and that Buntain et al. (2023a) shows is highly correlated with other, smaller sets of domain-level scores. Robertson et al. (2018) calculates these scores as the proportion of Republicans sharing a domain minus the proportion of Democrats sharing that domain, to produce an estimate in the range $[-1, +1]$, where negative values indicate a greater proportion of Democrats have shared that content.

For each MoC in our dataset, we calculate the weighted average of domain-level scores from Robertson et al. (2018) to estimate their ideological position, ζ. This method is applied consistently across platforms, with the ideological estimate for an MoC c on platform p represented as $\zeta_{c,p}$.[5] We include only MoCs that shared at least 20 links across the time period of our study (2012-2022). This constraint helps ensure there is enough information to produce meaningful values from the partisan score estimates.

RQ1: Ideological Extremity Across Platforms

To restate, **RQ1** concerns the extent to which MoCs differ in the extremity of their ideological presentation across Facebook and Twitter; that is, do they present a more ideologically extreme version of themselves on one platform or the other? Following definitions of polarization in Bramson et al. (2017), we model ideological extremity as a form of spread (type 1 in the Bramson et al. (2017) typology) such that increased ideological extremity corresponds to larger differences in the absolute values of ideology scores. At the individual MoC level, we calculate the difference $\Delta_c(p_1, p_2)$ across platforms p_1 and p_2 as shown in Eq. 1, where $|\zeta_{c,p}|$ is the absolute value of the ideology estimate for MoC c on platform p. If this value is positive, MoC c appears more extreme on platform p_1. We use a one-sample t-test to assess whether this cross-platform difference is negligible for the entire sample of politicians and for MoCs within the Democratic party and Republican party separately.

$$\Delta_c(Facebook, Twitter) = |\zeta_{c,Facebook}| - |\zeta_{c,Twitter}| \quad (1)$$

RQ2: Extremity Between Campaign-Oriented and Official Social Media Accounts

Past work in political science has demonstrated a post-election moderation effect, meaning that accounts focused on election campaigns are expected to be more ideologically extreme (Cigler, Getter, and Cigler 1977; Hirano et al. 2010; Hummel 2010; Agranov 2016). We ask whether MoCs present a more extreme ideology in their campaign accounts than they do in their post-election, official accounts. Answering this question produces two new sets of ideology scores calculated from link-sharing behaviors by these campaign-oriented accounts. Differences in these expressed positions also provide valuable context for differences identified in RQ1.

To assess this difference, we identify politicians who have both campaign and official accounts and calculate the difference in ideological extremity Δ_p for each and take the average across these politicians, as shown in Eq. 2, where n is the number of politicians who have both account types. To be consistent with the post-election moderation effect, we hypothesize that the decision to post on a campaign account will result in an average positive value of $\overline{\Delta_p}$, regardless of underlying platform. We test this hypothesis via a one-sided t-test on these differences.

$$\begin{aligned} \overline{\Delta_p}(\text{campaign}, \text{official}) &= \frac{1}{n}\sum_i \Delta_{p,i} \quad (2) \\ &= \frac{1}{n}\sum_i (|\zeta_{i,\text{camp.}}| - |\zeta_{i,\text{offic.}}|) \end{aligned}$$

RQ3: Changes in Extremity Over Time

We now turn to whether MoCs' online behaviors change over time in consistent ways. Specifically, we measure changes in cross-platform presentations over time *and* within political parties. Research on political discourse in Twitter has found polarization among general users increased between 2009-2016 (Garimella and Weber 2017). At the same time, reviews of the political science literature suggest much of the political polarization is driven by political elites (Tucker et al. 2018). In the preceding question, we ask whether political elites' (i.e., MoCs) behaviors on Twitter versus Facebook result in significant changes in ideological presentation, but this effect may be an artifact of increasing

[4] https://doi.org/10.17605/OSF.IO/8EWU3

[5] We also explored an alternative approach using a supervised regression model to predict ideological positions based on domain-sharing proportions and DW-NOMINATE scores, yielding similar results (see the appendix for additional details). We have also compared scores from Robertson et al. (2018) with a newer, larger collection of domain-level scores from Yang et al. (2025), where we find very strong correlation between these scores (Pearson $r = 0.93$) and only marginal increases in URL coverage ($< 2.5\%$).

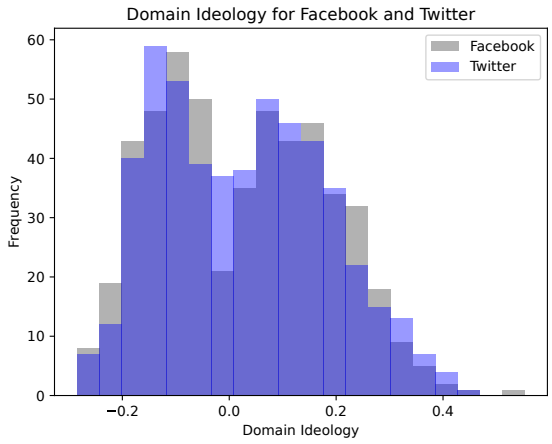

Figure 1: Distributions of Ideology Across Platforms. Distributions are inferred from politicians' official accounts for those who have accounts in both Facebook and Twitter.

societal polarization and changes to these platforms' audiences. To evaluate the temporal consistency, we ask whether the degree of ideological extremity we find holds across each year of our study. To this end, we replicate our calculation of ideological difference for each year, restricting the pairs of politicians to only those who served in that session. We further decompose this measure into separate measures for Democrats and Republicans to assess changes at the party level.

Results

RQ1: Ideological Extremity Across Platforms

To start, Figure 1 shows distributions of estimated ideologies across platforms, using official accounts on Twitter and Facebook. As expected, this distribution is bimodal, with peaks on the left and right, capturing the two-party system dynamics also shown in Buntain et al. (2023a) and Barberá et al. (2015). Comparing the platform-specific distributions, we see substantial overlap, though Facebook presents a deeper divide between the left and right. Comparing politicians across platforms, Table 2 presents changes in politicians' ideological extremity across these boundaries. We find politicians' official social media accounts consistently exhibit a significantly more extreme ideology on Facebook than on Twitter (approximately 3% more extreme)—this difference is on the scale of shifting from the BBC to the Financial Times (ft.com), or a liberal-to-neoliberal shift. This result holds directionally for campaign accounts but is not statistically significant. In answer to **RQ1**, politicians present a more extreme ideology on Facebook than on Twitter.

Table 3 then breaks down these cross-platform differences by political party. We find that Republicans are more ideologically extreme on Facebook, relative to Twitter; however, this difference is not significant. The aggregate cross-platform difference appears to be driven by Democrats being significantly more extreme on Facebook than on Twitter (approximately 6%)—a small shift equivalent to moving from Fortune magazine to the Harvard Business Review, both relatively centrist magazines.

Account	Pairs	$\overline{\lvert\zeta_{\text{Twitter}}\rvert}$	$\overline{\lvert\zeta_{\text{Facebook}}\rvert}$	$\overline{\Delta_p}$
Official	521	0.1329	0.1375	$-0.0046^{\dagger}$
Campaign	57	0.1623	0.1625	-0.0062

$\dagger = p < 0.05, \dagger\dagger = p < 0.01, \dagger\dagger\dagger = p < 0.001$

Table 2: Cross-Platform Differences in Ideological Extremity. Politicians appear significantly more extreme on Facebook (approximately 3% more than on Twitter).

Account	Pairs	$\overline{\lvert\zeta_{\text{Twitter}}\rvert}$	$\overline{\lvert\zeta_{\text{Facebook}}\rvert}$	$\overline{\Delta_p}$
Republican	252	0.1611	0.1632	-0.0020
Democratic	269	0.1065	0.1134	$-0.0069^{\dagger}$

$\dagger = p < 0.05, \dagger\dagger = p < 0.01, \dagger\dagger\dagger = p < 0.001$

Table 3: Cross-Platform Differences Across Parties. Party-level platform differences appear driven by Democrats, as Republicans show no significant difference.

RQ2: Ideological Extremity Between Campaign-Oriented and Official Accounts

Having examined differences in extremity between official accounts on Facebook and Twitter, we now turn to **RQ2** and how the political context influences expressed ideology for individual MoCs. Table 4 presents results comparing the inferred ideologies of politicians' official accounts to their campaign accounts. Results are consistent with the post-election moderation effect—that campaign accounts are more extreme than official accounts—regardless of platform. That is, on Facebook and Twitter, a politician's campaign account is 24% and 19% more extreme than their official account, respectively—similar to shifting from Fox News to the National Review, or from a conservative-leaning source to an overtly conservative magazine.

Platform	Pairs	$\overline{\lvert\zeta_{\text{Campaign}}\rvert}$	$\overline{\lvert\zeta_{\text{Official}}\rvert}$	$\overline{\Delta_p}$
Facebook	57	0.1685	0.1354	$0.0331^{\dagger\dagger\dagger}$
Twitter	57	0.1623	0.1364	$0.0259^{\dagger\dagger}$

$\dagger = p < 0.05, \dagger\dagger = p < 0.01, \dagger\dagger\dagger = p < 0.001$

Table 4: Comparing Ideology of Official and Campaign Accounts. Regardless of platform, politicians appear significantly more extreme in their campaign accounts compared to their official accounts.

RQ3: Ideological Extremity Over Time

We now evaluate the temporal consistency in ideological extremity across platforms (Figure 2). While consistent with the aggregate results above, we see that MoCs' more extreme presentations on Facebook are not uniformly significant across time, as the cross-platform differences appear

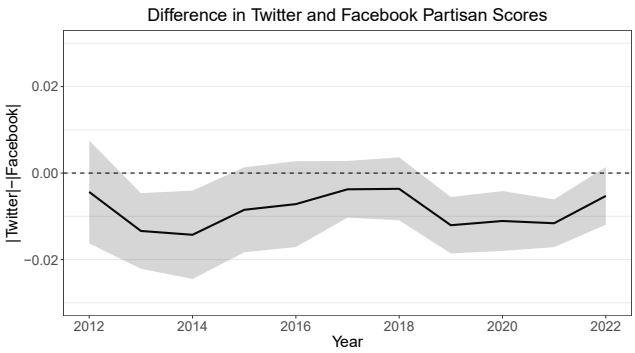

Figure 2: Cross-Platform Differences Over Time. The difference in ideological extremity across Facebook and Twitter for all members active during the year, along with the corresponding 95% confidence interval. Values less than zero indicate increased extremity on Facebook.

minor between 2015-2018. While several explanations for these trends exist (e.g., platform policies, the timing of elections, the composition of Congress, COVID), our key takeaway is that, averaged over the years, a member of Congress likely has a different presentation across platforms, with a slightly more extreme position on Facebook than Twitter.

Breaking these temporal dynamics down by party, Figure 3 shows average ideological extremity for each party, platform, and year. We observe that, across both platforms, the estimated extremity of Democrats increases substantially from 2012 to 2017. As Democrats start from a more moderation position in 2012, the estimated partisanship for Democrats in 2017 is similar to the Republican value in 2012. In contrast, up to 2019, extremity for Republicans presents only a slight increasing trend, but these results show a marked acceleration starting in 2020 and is consistent on both platforms. In this more recent time frame, Democrats present a consistent level of extremity.

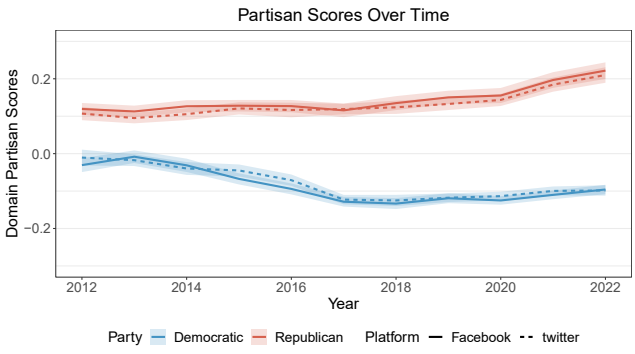

Figure 3: Partly-Level Differences Over Time. This figure shows the average yearly polarization score for each party along with the corresponding 95% confidence interval.

Discussion

Links in Platform Versus Voting Behavior

While the distributions of MoC ideologies shown in Figure 1 reflect the bimodal makeup of the US two-party system, we note that our inferred MoC ideology scores are not directly comparable to more standard DW-NOMINATE scores. Instead, these scores are proxies for how closely these MoCs align with Democrat or Republican *audiences*, as the domain scores in Robertson et al. (2018) represent the proportion of sharing-audiences registered with each party. This audience-alignment interpretation may be more appropriate for social media behaviors, as Barberá et al. (2019) shows MoCs tend to follow attentive audiences among their constituencies in online discussion, especially on Twitter. Alternative methods for ideological inference are possible with this data, as demonstrated in the Appendix, where we construct a supervised model that predicts DW-NOMINATE scores directly via domain sharing (without substantial effect on our conclusions). Network-based approaches that use retweets as interactions (comprising about 20% of the average politician's feed) may better replicate the shared support for legislation captured in DW-NOMINATE, as voting records clearly indicate who voted with whom in a manner similar to how retweets indicate who is amplifying whom. A similar network-based approach is used in Barberá et al. (2015) on Twitter, while Bond and Messing (2015) uses a shared-audience based network on Facebook. Yet, these approaches require substantial data and are likely insensitive to fine-grained temporal shifts that domain sharing-based approaches provide, a dynamic that opens questions about how temporally stable "ideology" is as an individual trait. Using the data from this study, future efforts could examine this temporal stability.

Platforms, Polarization, and Ideological Extremity

We find that politicians present themselves in a more ideologically extreme manner on Facebook than on Twitter. Viewed in isolation, these findings might suggest that politicians' sharing on Facebook contribute to polarization by fueling inter-party conflict and exerting a polarizing force on their constituents, as discussed in Tucker et al. (2018). In the context of political dynamics, however, these cross-platform differences are minor, as the post-election moderation effect (Cigler, Getter, and Cigler 1977; Hirano et al. 2010; Hummel 2010; Agranov 2016) gives us a benchmark against which we can compare the effect of posting on Facebook versus Twitter. As shown in Table 4, our results are consistent with expectations from the literature. On both Facebook and Twitter, politicians exhibit a more extreme ideology on their campaign accounts than on their official accounts, by 24% and 19%, respectively. Comparing this difference between campaign and official accounts to cross-platform effects (Table 2 versus Table 4), we find that while there is evidence of increased ideological extremity across platforms, the movement from official to campaign accounts is approximately seven times larger.

The role of Twitter versus Facebook in the polarized presentation of MoCs' accounts is made less clear when we

disaggregate to the year level, as shown in Figure 2, where Facebook emerges as the more ideological extreme space during certain timeframes (2014-2015 and in 2019-2021). At the party level our assessments of over-time polarization scores are also nuanced, initially showing an increasingly polarized Democratic party—though their polarization in 2017 is roughly equal to Republicans in 2012. While additional research on the topic is needed, our results differ from other expectations (Walters and Skocpol 2023; Abramowitz and McCoy 2019; Lee 2021). First, there is a no clear "Trump effect" of Republicans becoming more polarized after the 2016 election. While there is an uptick, there is not a level shift in polarization, despite the possibility that more moderate Republicans were voted out of office in favor of more extreme individuals (Enten 2018; Kelly 2019). For Democrats, polarization increases notably between 2016 and 2017, though the overall trend toward greater partisanship begins as early as 2013. Importantly, these effects shift in 2020, showing an accelerating polarized trend among Republican MoCs.

A potential explanatory factor for these platform differences may be that politicians target their messages to the platforms' populations, as suggested in Kreiss et al. (Kreiss, Lawrence, and McGregor 2018), and these audiences are not static. While survey work has shown the Twitter population represents a skewed portion of the population that is more politically engaged and liberal than the general liberal population in the US (Smith and Anderson 2018; Cohn and Quealy 2019; Hawkins et al. 2018), this audience has drastically shifted since Musk's acquisition in 2022 (Schulman et al. 2023). More research is needed to separate these potential factors, as we seek to understand how we might build more pro-social online spaces.

Temporal Links Between Platforms

One factor we have not yet addressed is the potential temporal link between these platforms. While we have evidence consistent with a post-election moderation effect among politicians in both platforms, we do not examine how other temporal factors come into play, such as pressures exerted by a politician's behavior on one platform and how that might impact their presentation on other platforms. E.g., as Twitter was widely viewed as an opportunity for politicians to lead journalists in setting the journalistic agenda—an aspect that Barberá et al. (2019) suggests Democrats were better at than Republicans—so too might a politician's behavior lead their behavior on Facebook. In the analyses presented above, we have aggregated MoCs' behaviors at the yearly level, which is likely to erase these platform-driven lead-follow dynamics. A future study should investigate these dynamics, especially in light of the increasing fragmentation of online spaces, where extreme reaction in one space may drive response in another. Beyond temporal dynmaics, atemporal factors, such as turnover in personnel who manage these different accounts or variation in personal styles across these personnel, may also account for these observations.

Limitations

Limitations in this work come primarily from measurement and, secondarily, from restrictions that prevent this work from being replicated in the current information environment. For measurement, we rely heavily on domain scores developed in Robertson et al. (2018) to produce our measure of MoCs' partisanship. This reliance introduces a risk to temporal validity, as the domains in that set may omit recently emerging and popular domains (e.g., TikTok did not exist at the time), or a domain that was once more liberal may have shifted to a more conservative space, both of which could skew results. Risks here are limited, however, as Buntain et al. (2023a) suggests that many domain-level scores of partisanship or ideological lean are highly correlated, even though they have been developed over multiple years. We have also compared data from Robertson et al. (2018) to a new collection, developed using a similar methodology, Yang et al. (2025), that is 7x larger, and we find high correlation (0.936) and negligible increases in coverage: Robertson et al. (2018) covers 81.22% and 85.36% of all domains shared by MoCs on Facebook and Twitter, respectively, whereas Yang et al. (2025) covers 83.45% and 86.76%. The Meta-provided, differentially private URL shares dataset used in Buntain et al. (2023a) could also directly measure such drift by inducing these measures from month to month over a multi-year period; we leave this assessment to future work.

Lastly, replicating this work in the current information environment is limited and problematic. For capturing MoCs' Facebook behaviors, CrowdTangle is now defunct; while it has been replaced by the Meta Content Library (MCL), the MCL includes restrictions that impede matching behaviors gathered via the MCL to the public Facebook page (i.e., posts gathered from the MCL do not directly link back to the public page). Though the MCL does provide snapshot data for highly followed accounts, these datasets are new and have not been assessed for gaps. The situation with Twitter, now X, is even more problematic with the removal of the Researcher API and establishment of a cost-prohibitive fee structure that would preclude collection of the large-scale data we have collected for this work. We therefore make the datasets constructed herein publicly available. Further, as our analysis is retrospective, MoCs' deleted content may impact results; while assessing such impact is beyond the scope of this work, our dataset could be compared against repositories of deleted politicians' content to measure this impact, such as ProPublica (2022).

Conclusion

This work makes key contributions to studies of online political engagement, particularly among political elites. Our results demonstrate that US politicians appear more partisan in Facebook, even before the fragmentation of today's social media environment. This narrative becomes more complicated when we look across individual years, as platform-level ideological extremity is more intense at some points than others. Counter to narratives suggesting President Trump's ascendancy pushed Republican MoCs in

a more polarized direction, results suggest that Republican MoCs showed stable levels of polarization until *after* the Trump presidency, while Democrats moved away from the center, becoming more extreme in the early 2010s before stabilizing in 2017. In the context of political dynamics, however, these shifts across platforms are relatively small compared to an MoC's presentation on their official, publicly funded social media accounts versus their campaign-oriented accounts–regardless of platform.

These findings reveal potential avenues and incentives for reducing partisan behavior among elites. That is, platforms' algorithmic feeds could mix a politician's campaign-oriented rhetoric with messages from the official account to soften extreme presentation. Such interventions require further investigation into how these political elites interchange posting behaviors between campaign and official accounts (e.g., an MoC may exclusively post on their campaign accounts during campaign season) and studies of how these platforms' *audiences* are exposed and respond to these varied messages.

While politicians exhibit pronounced differences in tone between their campaign and official accounts, the relative stability of partisan self-presentation across platforms suggests that broader social media dynamics help shape how political elites communicate. This highlights the importance of platform norms: In a fragmented information ecosystem, a single prominent pro-social platform may help shape behavior across the larger network. Yet this influence may also flow in the opposite direction, allowing more polarizing platforms to reinforce extremity and amplify risks.

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Paper Checklist

1. For most authors...
   (a) Would answering this research question advance science without violating social contracts, such as violating privacy norms, perpetuating unfair profiling, exacerbating the socio-economic divide, or implying disrespect to societies or cultures? Yes. Examining how political elites present themselves is a study in the public interest, especially when looking across spaces with different audiences.
   (b) Do your main claims in the abstract and introduction accurately reflect the paper's contributions and scope? Yes.
   (c) Do you clarify how the proposed methodological approach is appropriate for the claims made? Yes, as outlined in the Methods section.
   (d) Do you clarify what are possible artifacts in the data used, given population-specific distributions? Yes; we detail possible artifacts in the section on data collection
   (e) Did you describe the limitations of your work? Yes, described explicitly in the limitations section.
   (f) Did you discuss any potential negative societal impacts of your work? No, as this observational study of political elites' public presentations focuses on public data presented for public consumption by public figures. While data misuse is feasible, such discussion is outweighed by the public interests of the data and analysis.
   (g) Did you discuss any potential misuse of your work? No, as described in 1f.
   (h) Did you describe steps taken to prevent or mitigate potential negative outcomes of the research, such as data and model documentation, data anonymization, responsible release, access control, and the reproducibility of findings? Yes; in the limitations section, we discuss difficulties in reproducing this work given new limits on data collection at major social platforms.
   (i) Have you read the ethics review guidelines and ensured that your paper conforms to them? Yes.
2. Additionally, if your study involves hypotheses testing...
   (a) Did you clearly state the assumptions underlying all theoretical results? NA
   (b) Have you provided justifications for all theoretical results? NA
   (c) Did you discuss competing hypotheses or theories that might challenge or complement your theoretical results? NA
   (d) Have you considered alternative mechanisms or explanations that might account for the same outcomes observed in your study? NA
   (e) Did you address potential biases or limitations in your theoretical framework? NA
   (f) Have you related your theoretical results to the existing literature in social science? NA
   (g) Did you discuss the implications of your theoretical results for policy, practice, or further research in the social science domain? NA
3. Additionally, if you are including theoretical proofs...
   (a) Did you state the full set of assumptions of all theoretical results? NA
   (b) Did you include complete proofs of all theoretical results? NA
4. Additionally, if you ran machine learning experiments...
   (a) Did you include the code, data, and instructions needed to reproduce the main experimental results (either in the supplemental material or as a URL)? Yes, all data and code are available at a provided OSF.io anonymous project URL.
   (b) Did you specify all the training details (e.g., data splits, hyperparameters, how they were chosen)? NA
   (c) Did you report error bars (e.g., with respect to the random seed after running experiments multiple times)? Yes
   (d) Did you include the total amount of compute and the type of resources used (e.g., type of GPUs, internal cluster, or cloud provider)? NA
   (e) Do you justify how the proposed evaluation is sufficient and appropriate to the claims made? NA
   (f) Do you discuss what is "the cost" of misclassification and fault (in)tolerance? NA
5. Additionally, if you are using existing assets (e.g., code, data, models) or curating/releasing new assets, **without compromising anonymity**...
   (a) If your work uses existing assets, did you cite the creators? Yes.
   (b) Did you mention the license of the assets? No, as the assets are part of a published article.
   (c) Did you include any new assets in the supplemental material or as a URL? Yes, the data we have collected is provided in an anonymous OSF.io project URL.
   (d) Did you discuss whether and how consent was obtained from people whose data you're using/curating? No. As this analysis focuses on highly followed, political elites and their public postings, following tenets established in social media ethics research.
   (e) Did you discuss whether the data you are using/curating contains personally identifiable information or offensive content? No. A political elite/politician's use of offensive or extreme content is an important aspect of studying their partisan behavior. We do not filter it from the dataset we release.
   (f) If you are curating or releasing new datasets, did you discuss how you intend to make your datasets FAIR (see FORCE11 (2020))? Yes.
   (g) If you are curating or releasing new datasets, did you create a Datasheet for the Dataset (see Gebru et al. (2021))? Yes.

6. Additionally, if you used crowdsourcing or conducted research with human subjects, **without compromising anonymity**...
   (a) Did you include the full text of instructions given to participants and screenshots? NA
   (b) Did you describe any potential participant risks, with mentions of Institutional Review Board (IRB) approvals? NA
   (c) Did you include the estimated hourly wage paid to participants and the total amount spent on participant compensation? NA
   (d) Did you discuss how data is stored, shared, and deidentified? NA

Appendix

Validation via an Alternative Measure for Ideology

We replicate the main analyses using an alternative modeling approach that treats ideology inference as a supervised learning task. Instead of using domain scores from Robertson et al. (2018), we train a Bayesian ridge regression to predict MoCs' DW-NOMINATE score (Poole and Rosenthal 2001) from their normalized domain-sharing features (aggregated across platforms), following methods similar to Barberá (2015) and Eady et al. (2025). Using 10-fold cross-validation, the model achieves a Pearson correlation of 0.9096 (SE = 0.0056). We use predictions from this model as an alternative ideological measure in subsequent analyses.

Revisiting Partisanship Across Platforms. To assess cross-platform partisanship, we apply the supervised model to each platform separately and compare predictions. Table 5 shows that, consistent with our original analysis (Table 2), politicians' official accounts appear significantly more extreme on Facebook than on Twitter, with no significant differences observed for campaign accounts.

Account	Pairs	$\overline{\lvert\zeta_{\text{Twitter}}\rvert}$	$\overline{\lvert\zeta_{\text{Facebook}}\rvert}$	$\overline{\Delta_p}$
Official	521	0.3720	0.4093	$-0.0373^{\dagger\dagger\dagger}$
Campaign	57	0.3935	0.4419	$-0.0484^{\dagger}$

$\dagger = p < 0.05, \dagger\dagger = p < 0.01, \dagger\dagger\dagger = p < 0.001$

Table 5: Cross-Platform Differences in Paired Ideology. This table shows the effect of Facebook versus Twitter. Only members with accounts on both platforms are included.

Table 6 breaks down cross-platform differences by party, again showing that both parties appear more extreme on Facebook than on Twitter (see Table 3).

Account	Pairs	$\overline{\lvert\zeta_{\text{Twitter}}\rvert}$	$\overline{\lvert\zeta_{\text{Facebook}}\rvert}$	$\overline{\Delta_p}$
Republican	252	0.4448	0.4701	$-0.0254^{\dagger\dagger\dagger}$
Democratic	269	0.3039	0.3522	$-0.0406^{\dagger\dagger\dagger}$

$\dagger = p < 0.05, \dagger\dagger = p < 0.01, \dagger\dagger\dagger = p < 0.001$

Table 6: Cross-Platform Differences Across Parties. This table shows the effect of Facebook versus Twitter for each party. Only members with accounts on both platforms are included.

Campaign versus Official Accounts. Table 7 compares inferred ideologies between politicians' official and campaign accounts. Campaign accounts appear more partisan on both platforms, but the differences are not statistically significant.

Partisan Presentation Over Time. We again assess temporal consistency in partisanship across platforms (Figure 4) and find, consistent with Robertson et al. (2018), little evidence of greater partisanship on Twitter relative to Facebook. Facebook shows a clearer divergence, with rising partisanship that narrows by 2022. Party-level trends (Figure 5) also align with prior results: Democrats become more partisan from 2012–2018, followed by a sharp rise among Republicans starting in 2020.

Platform	Pairs	$\overline{\lvert\zeta_{\text{Campaign}}\rvert}$	$\overline{\lvert\zeta_{\text{Official}}\rvert}$	$\overline{\Delta_p}$
Facebook	57	0.4419	0.4172	0.0247
Twitter	57	0.3935	0.3766	0.0169

$\dagger = p < 0.05, \dagger\dagger = p < 0.01, \dagger\dagger\dagger = p < 0.001$

Table 7: Comparing Ideology of Official and Campaign Accounts on Facebook and Twitter. This table compares ideologies inferred from politicians' official social media accounts to ideologies inferred from their campaign-oriented accounts.

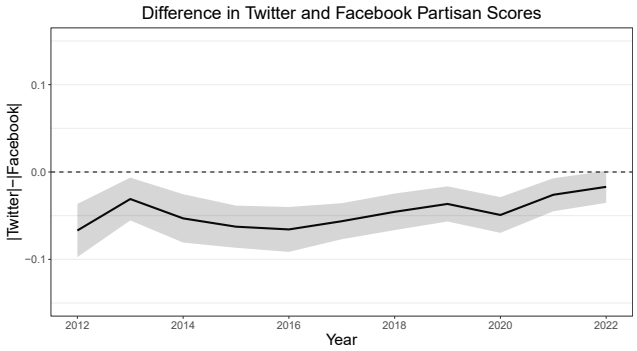

Figure 4: Differences in Cross-Platform Partisanship Over Time. This figure shows yearly differences in average domain partisanship scores between Facebook and Twitter for active members, with 95% confidence intervals. Values below zero indicate greater partisanship on Facebook.

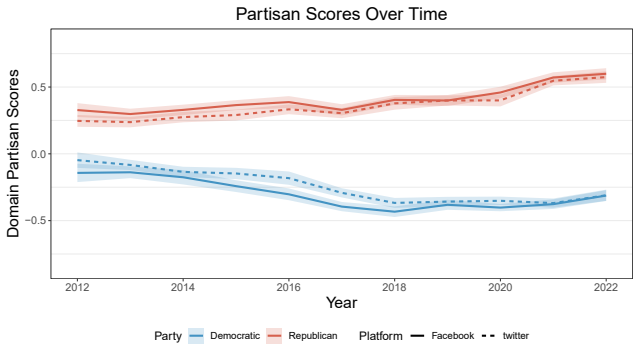

Figure 5: Cross-Platform Partisanship Over Time. This figure shows the average yearly partisanship score for each party, with corresponding 95% confidence intervals.