

# Angrier, or Just More Expressive?

## Facebook Reactions to European Parties and Leaders, 2016 to 2020

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### Abstract

Facebook added emoji reactions, including Angry, in February 2016, and for a time weighted them more heavily than likes in ranking posts. Did audiences of European parties become angrier? I use 526,813 posts from the pages of 112 parties and 74 party leaders in 20 European countries from March 2016 to September 2020, collected through CrowdTangle. Angry reactions rose from 3.7% of all reactions in 2016 to 7.9% in 2020. But all emoji reactions rose at the same pace, from 11% to 22% of reactions, as users replaced likes with emoji. As a share of emoji reactions, anger rose only modestly when pooled, because the angriest pages grew, and on the typical page it fell. Anger was concentrated by position rather than by time. Within the same country and month, pages of populist radical-right parties drew 3.1 points more anger as a share of all reactions than mainstream parties, and parties in government 2.2 points less. When a party entered government, the anger on its page fell. Anger was lower in the 30 days before national elections. Posts with more anger, holding total reactions constant, drew more shares: ten points more anger went with about 17% more shares, while love and laughter went with no more. The rise of anger on party pages was mostly a rise in emoji use. What anger there was belonged above all to opposition parties and to challengers of left and right, and it went with wider sharing.

## 1 Introduction

On 24 February 2016 Facebook let users react to posts with Love, Haha, Wow, Sad and Angry as well as Like. The reactions gave researchers a record of how audiences felt about what they saw, and gave Facebook a new signal for ranking. Reporting based on internal documents later described how Facebook weighted emoji reactions, including Angry, five times as heavily as likes from 2017, how its 2018 change to favour “meaningful social interactions” rewarded content that provoked strong reactions, and how the weights were later cut, with Angry reportedly set to zero in September 2020, the last month of these data (Mosseri 2018; Hagey and Horwitz 2021; Merrill and Oremus 2021). If anger was rewarded, one might expect political pages to have become angrier places.

This paper asks whether they did, and where the anger was. Using the pages of parties and their leaders in 20 European countries from March 2016 to September 2020, I measure the share of reactions that

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were Angry over time, across party families and between government and opposition, around elections, and in relation to how far posts spread. The data come from CrowdTangle lists I exported in 2020 for my doctoral research (Hotham 2021), and the pages and party classifications are those of my study of the populist engagement premium (Hotham 2026a), which noted in passing that anger was more common on populist pages.

The main finding is a caution about the headline numbers. Anger did rise as a share of all reactions, roughly doubling. But users were replacing likes with emoji of every kind over the same years. As a share of emoji reactions, anger rose only modestly when pooled across pages, and on the typical page it fell. The clearer variation in anger was by political position: it was concentrated on opposition parties and on challenger parties, above all the populist radical right, it fell when a party entered government, and it went with posts that were shared more widely.

## 2 Emotion, anger and political engagement

Emotion shapes what spreads online. Moral and emotional language increases the diffusion of political messages on Twitter (Brady et al. 2017), and on Facebook and Twitter posts about political out-groups draw more engagement than posts about in-groups, with out-group language predicting Angry and Haha reactions (Rathje et al. 2021). In the United States these dynamics have been linked to affective polarisation, the growing dislike of opposing partisans (Iyengar et al. 2019). Populist and challenger parties are thought to be especially suited to such communication: they frame politics as a conflict between the people and the elite and depend on the attention of disaffected voters (Engesser et al. 2017; Gerbaudo 2018; De Vries and Hobolt 2020). The closest prior study, Muraoka et al. (2021), used love and anger reactions to party posts in 79 democracies to describe how audiences respond to parties across countries; this paper adds change over time within Europe, government switches, elections and spread.

Facebook’s reactions make it possible to observe these emotions across many parties over time. My earlier studies used them for single cases: anger on Britain First’s page (Hotham 2026c), the tone of the EU referendum campaign (Hotham 2026d), and the fall in mockery of the British government at the start of the Covid-19 pandemic (Hotham 2026b). Here I take a comparative view, with four questions. Did anger rise over time? Which parties drew it? Did it change around elections? And did posts that drew anger spread further?

## 3 Data and methods

### 3.1 Data

The data are all posts by the official pages of 112 parties and the pages of 74 party leaders in 20 European countries, exported from CrowdTangle in October 2020 (CrowdTangle Team 2020). They are the pages used in my study of the populist engagement premium (Hotham 2026a), where they are described in detail. I keep posts from 1 March 2016, the first full month of reactions, to 30 September 2020, with at least one reaction: 526,813 posts. Each party is classified by the PopuList (The PopuList 2026) as populist radical right, populist radical left, other populist, non-populist far left, non-populist far right or mainstream, by year, and each leader’s page takes the classification of their party. Parties the PopuList marks as borderline are classed as mainstream in the main models; Podemos is classed as populist up to 2019 and as non-populist far left in 2020. Five pages change family during the period, so the family

counts in Table 1 sum to more than 186. The single non-populist far-right page is in the models but not shown in the figures. Government status at the date of each post comes from ParlGov (Döring and Manow 2024).

## 3.2 Measures

Reactions are Like, Love, Care (added in April 2020), Haha, Wow, Sad and Angry. I measure anger in two ways: Angry reactions as a share of all reactions, and as a share of emoji reactions, that is, all reactions other than likes. The second measure removes the effect of a general shift from likes to emoji. Table 1 gives the shares by party family and government status.

**Table 1.** Reactions by party family and government status, March 2016 to September 2020. Shares are of all reactions or of emoji reactions (all reactions other than likes), pooled across posts.

|                        | Pages | Posts   | Angry (% of all) | Angry (% of emoji) | Haha (% of all) | Love and Care (% of all) |
|------------------------|-------|---------|------------------|--------------------|-----------------|--------------------------|
| Mainstream             | 137   | 352,093 | 4.1              | 25.2               | 2.4             | 7.5                      |
| Populist radical right | 21    | 78,587  | 10.2             | 49.0               | 2.6             | 6.1                      |
| Populist radical left  | 6     | 22,872  | 9.1              | 38.5               | 2.8             | 9.0                      |
| Other populist         | 15    | 37,509  | 5.5              | 31.0               | 2.9             | 7.1                      |
| Non-populist far left  | 11    | 32,613  | 6.8              | 30.2               | 2.1             | 10.4                     |
| Non-populist far right | 1     | 3,139   | 6.4              | 30.1               | 3.1             | 9.6                      |
| Government             | 79    | 121,161 | 2.6              | 18.1               | 2.6             | 7.9                      |
| Opposition             | 157   | 405,652 | 7.6              | 38.1               | 2.4             | 7.2                      |

## 3.3 Models

I aggregate posts to page-months with at least five posts. Models of anger as a share of all reactions use page-months with at least 100 reactions (9,241), and models of anger as a share of emoji use those with at least 50 emoji reactions (8,650). For the trend, I regress the anger share on a linear month term with page fixed effects, so the trend is within pages. For differences between parties, I regress it on party family, government status and page type with fixed effects for each country-month, so pages are compared with others in the same country at the same time. For the effect of entering or leaving government, I use page and month fixed effects, so the estimate comes from the 49 pages whose party changed status. For elections, I compare the 30 days before each national election with other periods, within pages, with a linear time trend. The elections are the parliamentary elections in each country between March 2016 and September 2020 from ParlGov, both rounds of the 2017 French presidential election, and the 2017 and 2019 British general elections. Standard errors are clustered by page. Finally, to see whether anger goes with spread, I take the 508,956 posts with at least ten reactions and regress the log of one plus each post's shares and comments on the shares of its reactions that were Angry, Love or Care, Haha, Wow and Sad, with likes as the reference, controlling for the log of total reactions, with page and month fixed effects.

# 4 Results

## 4.1 More anger, or more emoji?

Angry reactions rose from 3.7% of all reactions in 2016 to 5.3% in 2017, 7.2% in 2018, 5.9% in 2019 and 7.9% in 2020 (Figure 1). Within pages, the share rose by 0.03 points a month (Table 2). But emoji

of every kind rose too. Emoji made up 11% of reactions in 2016 and 22% in 2020, rising within pages by 0.18 points a month. Love and Care rose most in points, from 4.5% of all reactions in 2016 to 9.1% in 2020.

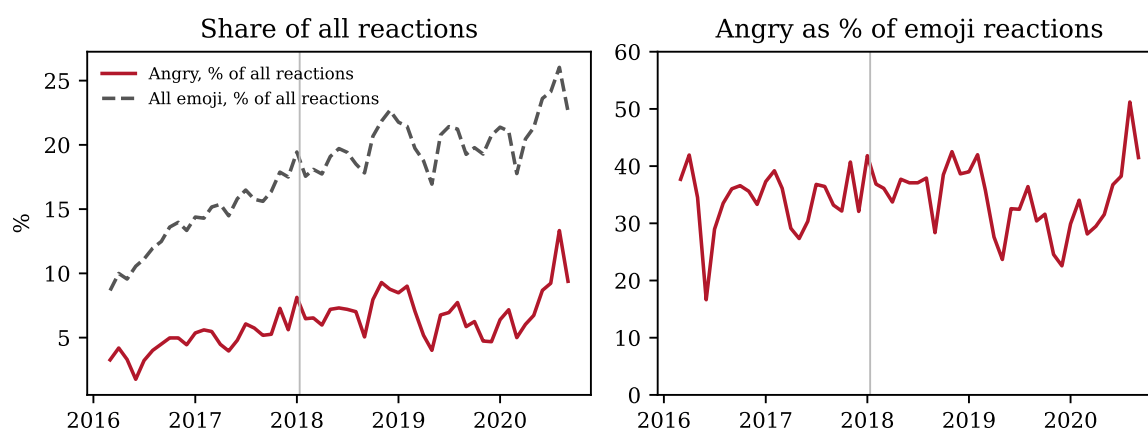


**Figure 1.** Angry and all emoji reactions as a share of all reactions (left) and Angry as a share of emoji reactions (right), by month, pooled across pages. The vertical line marks Facebook’s January 2018 change to its News Feed.

As a share of emoji reactions, anger rose only modestly. Pooled across pages it was 32% in 2016, 37% in 2018, 30% in 2019 and 36% in 2020. Within pages, it fell by 0.19 points a month, or about ten points over the period, a result that holds without Care reactions and for 2016 to 2019 alone. Weighting pages by their volume of emoji reactions, the within-page trend is flat ( $-0.06$  points a month, not significant). The pooled share is higher than the within-page trend suggests because the pages that drew most anger grew fastest: populist radical-right pages drew 16% of all emoji reactions in 2016 and 35% in 2020. The sharpest monthly rise came in August 2020, when anger reached 51% of emoji reactions, driven mainly by the pages of Nigel Farage, Tom Van Grieken, the Sweden Democrats, Vox and Podemos. Over the period as a whole, the rise of anger as a share of all reactions was mostly a rise in the use of emoji.

## 4.2 Where the anger was

Anger was concentrated by political position (Figure 2, Table 2). Pooled, anger made up 10.2% of reactions on populist radical-right pages and 9.1% on populist radical-left pages, against 4.1% on mainstream pages. Within the same country and month, populist radical-right pages drew 3.1 points more anger as a share of all reactions than mainstream pages, and 10.5 points more as a share of emoji. Other populist parties drew 1.5 points more. The differences for the populist radical left and the non-populist far left were of similar size but less precisely estimated; when the parties the PopuList marks as borderline far left are classed as far left, that family draws 2.4 points more anger, and the difference is significant. The radical-right difference is less secure than these coefficients suggest: clustering standard errors by country, or using party pages only, gives a similar estimate (3.1 and 2.9 points) that is no longer significant at the 5% level. The pattern is best described as anger on challenger parties of left and right, most strongly on the radical right.

Government status was the most robust difference. Pages of parties in government drew 2.2 points less anger as a share of all reactions than opposition pages in the same country and month, and 11.3 points less as a share of emoji. The difference holds when clustering by country. It also held within parties: with page and month fixed effects, being in government went with about one point less anger. This

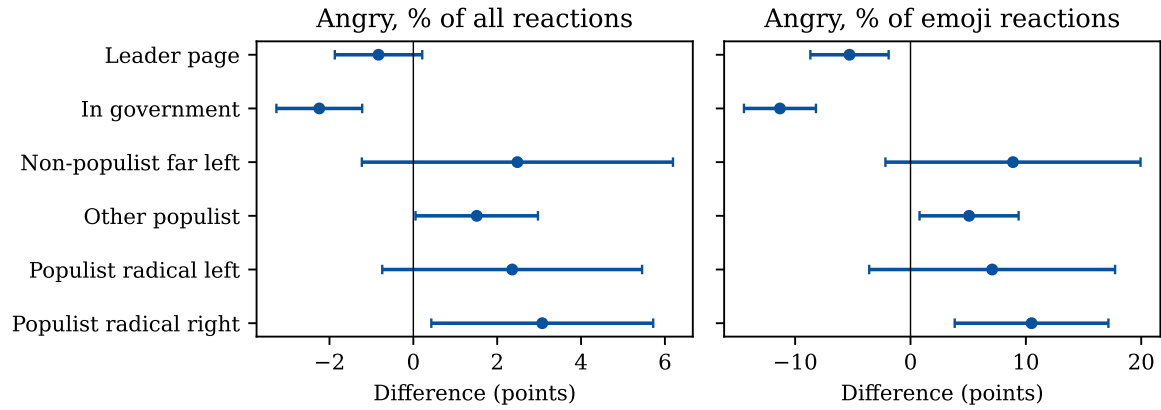


**Figure 2.** Differences in the anger share between pages in the same country and month, with 95% confidence intervals. Party families are compared with mainstream parties, and leader pages with party pages.

**Table 2.** Models of the anger share of page-months (coefficients in percentage points, standard errors clustered by page in brackets; \*  $p < 0.05$ ). <sup>a</sup> With country-month fixed effects. <sup>b</sup> With page and month fixed effects. <sup>c</sup> With page fixed effects and a linear time trend; page-months split at 30 days before the election (9,688 units).

|                                                                   | Angry, % of all reactions | Angry, % of emoji reactions |
|-------------------------------------------------------------------|---------------------------|-----------------------------|
| Trend per month, page fixed effects                               | 0.03 (0.01)*              | -0.19 (0.03)*               |
| Populist radical right (vs mainstream) <sup>a</sup>               | 3.08 (1.35)*              | 10.49 (3.40)*               |
| Populist radical left <sup>a</sup>                                | 2.36 (1.58)               | 7.08 (5.44)                 |
| Other populist <sup>a</sup>                                       | 1.51 (0.74)*              | 5.08 (2.19)*                |
| Non-populist far left <sup>a</sup>                                | 2.48 (1.89)               | 8.88 (5.64)                 |
| In government <sup>a</sup>                                        | -2.24 (0.52)*             | -11.32 (1.59)*              |
| Leader page (vs party page) <sup>a</sup>                          | -0.83 (0.53)              | -5.29 (1.73)*               |
| In government, within page <sup>b</sup>                           | -1.06 (0.34)*             | -5.47 (1.48)*               |
| Last 30 days before a national election, within page <sup>c</sup> | -1.89 (0.20)*             | –                           |
| Page-months                                                       | 9,241                     | 8,650                       |

estimate comes mainly from the 37 pages whose party entered government (0.7 points less anger); for the 12 whose party left government there was no clear change. Leader pages drew somewhat less anger than party pages, significantly so as a share of emoji. Government pages drew slightly more Haha and Love. In the opposition, anger is part of what a party’s audience expresses; in government, it fades.

### 4.3 Elections

Anger fell before elections. In the 30 days before a national election, the anger share was 1.9 points lower than at other times on the same page. Campaigns may bring out more supportive reactions from parties’ audiences, or bring in audiences that react less angrily; the data cannot separate the two.

### 4.4 Anger and spread

Posts that drew more anger were shared more (Table 3). Holding total reactions and the page and month constant, ten points more anger as a share of a post’s reactions went with about 17% more shares and 19% more comments. Ten points more Love and Care, or more Haha, went with no more shares, though with more comments. Wow, a rare reaction, went with more shares still. Among the common emotions,

anger was the one most closely associated with sharing, the form of engagement that carries a post beyond its own audience. This is an association within pages, not a causal effect: the content that makes people angry may also be the content they want to share.

**Table 3.** Shares and comments associated with ten more percentage points of a post’s reactions of each kind, relative to likes, holding total reactions, page and month constant (508,956 posts with at least ten reactions; standard errors clustered by page; \*  $p < 0.05$ ).

| Ten more points of reactions that are | Shares | Comments | Mean share of reactions (%) |
|---------------------------------------|--------|----------|-----------------------------|
| Angry                                 | +17%*  | +19%*    | 5.1                         |
| Love and Care                         | -3%    | +32%*    | 4.9                         |
| Haha                                  | +0%    | +48%*    | 2.0                         |
| Wow                                   | +36%*  | +48%*    | 0.7                         |
| Sad                                   | +2%*   | +7%*     | 1.8                         |

## 5 Discussion

The headline rise in anger on European party pages after 2016 was mostly a rise in emoji. As users moved from likes to the other reactions, every emotion grew as a share of reactions, love most of all. Measured against emoji as a whole, anger grew only modestly when pooled, because the angriest pages grew, and on the typical page it fell. Studies that track anger as a share of all reactions over this period should allow for this shift.

What anger there was had a clear political location. It was concentrated on opposition parties and on challenger parties, most strongly the populist radical right, and it fell when parties entered government. This fits the view that anger online is directed at those in power, and that challenger parties both express and attract it (De Vries and Hobolt 2020; Engesser et al. 2017). It also fits the finding that out-group animosity drives engagement (Rathje et al. 2021): opposition parties’ posts are often about the government. Anger was associated with sharing, which, if Facebook’s ranking rewarded it as reported for most of this period (Hagey and Horwitz 2021; Merrill and Oremus 2021), would give the parties that drew most anger an advantage in reach. The engagement premium of populist parties that I found in earlier work (Hotham 2026a) may owe part of its size to this.

## 6 Limitations

The pages are those in my CrowdTangle lists, which cover some countries and parties better than others (Germany, for example, has only four pages); the comparisons within country-months and within pages limit, but do not remove, this. Reaction counts are those at the time of export in October 2020, not at the time of posting, so older posts may include later reactions. Reactions record what audiences clicked, not how they felt, and they include reactions from opponents, from outside the country and possibly from coordinated or paid activity. An Angry reaction may be anger at the party or anger with the party at someone else; the data cannot tell these apart. Facebook’s ranking and the way reactions were displayed changed during the period, so changes over time mix audience behaviour with platform design. The election analysis covers only the national elections in the data and does not distinguish campaign content. The results on spread are associations. I do not analyse the content of posts.

## 7 Conclusion

Between 2016 and 2020, angry reactions on the pages of European parties and leaders doubled as a share of all reactions, but so did emoji as a whole. As a share of emoji, anger grew only modestly overall and fell on the typical page. It was concentrated on opposition and challenger parties, most strongly the radical right, fell when parties entered government and before elections, and went with posts that were shared more. On this evidence, European party pages did not become steadily angrier; anger stayed largely with those out of power and on the radical right, and it went with wider sharing.

## Provenance and AI use

The data were exported from CrowdTangle in October 2020 for my doctoral research. This paper builds on my doctoral thesis (Hotham 2021) and uses the pages and classifications of my study of the populist engagement premium (Hotham 2026a). The analysis and writing were completed in 2026.

I wrote the text, with drafting and editing assistance from Claude (Anthropic), which also helped prepare the analysis code and review drafts. I checked the analysis and the text and take responsibility for both.

## Ethics and data

The data are public posts by parties and party leaders. In line with CrowdTangle’s terms, I do not publish post-level data and I do not quote posts. Aggregated data (reactions by page and month) are available from the author.

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