

What Earns Engagement?

Hand-Coded Content and Facebook Interactions on British Party and Leader Pages, 2015 and 2017

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Abstract

Which kinds of campaign post draw the most likes, comments and shares? I link a hand-coded dataset of 1,205 Facebook posts from the Labour and Conservative party pages and the pages of David Cameron, Ed Miliband, Theresa May and Jeremy Corbyn, published in the month before the 2015 and 2017 UK general elections, to the interactions each post received. I compare posts within the same page, holding constant the format, length and timing of the post and the page's audience. I chose nine features in advance from the literature and from a check of each code against an independent second coder, and I correct for multiple testing. Posts with a negative orientation, criticising or attacking, drew about 20% more interactions than other posts on the same page (95% CI 4% to 39%), and more comments and shares in particular. This is the most robust result: it holds in every check, on seven of the eight pages and in the subset of pages for which the coded sample is close to complete. Humour (60% more) and celebrities (37% more) went with large increases, and posts that showed the page's own leader, asked for the vote or asked people to share went with increases of 14% to 16%, but these associations depend on the Labour and Corbyn pages and on whether the post came from a party or a leader page. Calls to vote and to share went with more engagement on party pages only. Pledges and pictures of members of the public made no detectable difference. In 2017, when Facebook recorded emotional reactions, negative posts and criticism of the opposing leader drew a larger share of angry reactions, and posts showing the leader, pledges and celebrities a larger share of love reactions. Many of the 52 other codes I examine are associated with engagement, but most of those codes were not reliably reproduced by the second coder. The sample comes from Facebook's ranked post limit and is not a census for three of the eight pages, and the design is associational: it describes which content earned engagement, not why.

Keywords: Facebook; engagement; negativity; humour; personalisation; election campaigns; Labour Party; Conservative Party; content analysis

1 Introduction

On Facebook every campaign post is scored in public. Within hours a party can see how many people liked it, commented on it and shared it, and those numbers decide in part how many more people will

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see it. Interactions are not votes, but they are the currency in which a page's reach is paid. A long line of work asks what kinds of political post earn them. Studies of candidates and parties in several European countries point to negativity, emotion, humour, personal content and direct requests to act (Bene 2017; Heiss et al. 2019; Keller and Kleinen-von Königslöw 2018; Metz et al. 2020; Bene et al. 2022), and studies of social media more broadly find that content about political opponents and moral outrage spreads furthest (Brady et al. 2017; Rathje et al. 2021).

Britain has received less attention in this literature, and most studies rely either on automated text measures or on hand coding of a small set of features. This paper uses a richer source. For my doctoral research I coded by hand every retrievable post from the Labour and Conservative party pages and the pages of their leaders in the month before the 2015 and 2017 general elections, 1,208 posts in all, for several hundred features of content and form (Hotham 2021). The thesis used engagement only to describe the scale of each page's audience. It deliberately did not ask which content features earned engagement, beyond noting that video and photo posts drew more on average than other formats (Hotham 2021). My later papers on the same corpus compare what party and leader pages posted (Hotham 2026a), who appeared in the pictures (Hotham 2026e) and how the Labour pages differed from Momentum's (Hotham 2026b). Two of those papers note that they worked from counts of codes by page and so could not link content to engagement. This paper does that, using the post-level coding file, in which each coded post carries the likes, comments, shares and reactions recorded when the data were collected.

I ask three questions. **RQ1.** Which content features of party and leader posts were associated with more interactions than other posts on the same page? **RQ2.** Did the same features go with reactions, comments and shares alike, or with some forms of engagement more than others? **RQ3.** Did the associations hold across party and leader pages, across the two elections, and across the pages for which the sample is more and less complete?

Because a hand-coded scheme offers many features to test, I pre-specified nine, chosen from the literature and screened for reliability against an independent second coder before I fitted any model of engagement. I correct their *p*-values for the false discovery rate, and I report every other code in an appendix, with its reliability and its own correction. The design compares posts within the same page, so that differences between parties, leaders and elections drop out. It remains associational. A party that posted a joke on the day of a televised debate, or attacked its opponent on the day of a scandal, may have drawn engagement because of the day rather than the joke or the attack, and the coding cannot separate content from everything else that came with it.

The main finding is that negativity went with more engagement. Posts that criticised, attacked or expressed regret drew about a fifth more interactions than other posts on the same page, with the largest differences in comments and shares, and the pattern held on seven of the eight pages and in every check I ran. Humour and celebrities went with larger differences, and calls to vote and share and pictures of the leader with smaller ones, but these depended on which pages were included. Policy pledges and pictures of ordinary people made no detectable difference.

2 What earns engagement on political pages

Engagement as an outcome. Interactions on a post are a mix of approval, argument and amplification. Likes and other reactions are the least costly; comments require more effort and draw both supporters and critics; shares carry the post to the sharer's own network and are the main route by which a page reaches people who do not follow it (Bene 2017). Studies therefore separate the three, and expect different

content to drive each. Since 2016 Facebook has also recorded emotional reactions (love, haha, wow, sad and angry), which give a rough measure of how people responded to a post as well as how many responded (Eberl et al. 2020; Jost et al. 2020).

Negativity and conflict. The most consistent finding is that negative content draws engagement. In the 2014 Hungarian campaign, candidates' posts that were negative drew more likes, comments and shares, and negative and mobilising content was shared most (Bene 2017). In a study of 1,915 posts by political actors, negative tone increased engagement while positive tone did not, and references to competitors went with more interaction (Heiss et al. 2019). Across 68 parties in 12 European countries in 2019, posts with negative and populist appeals drew more engagement (Bene et al. 2022). Studies of social media in general find that content about the political out-group (Rathje et al. 2021) and moral-emotional language (Brady et al. 2017) predict sharing. In the 2016 referendum, my own work found that negative posts drew more engagement on both the Leave and the Remain side (Hotham 2026f), and on Britain First's page posts about out-groups drew the most (Hotham 2026c). These findings lead me to expect that negative posts and attacks on the opposing leader drew more engagement, and more comments and shares in particular.

Personalisation. Leaders have become the face of campaigns, and social media give them their own channels (Enli and Skogerbø 2013). In a manual content analysis of 435 politicians' posts, emotional and private self-personalisation went with more audience engagement (Metz et al. 2020). On the British pages studied here, the leader pages carried more first-person and personal material while party pages did more of the campaign's selling (Hotham 2026a), and over a decade leaders' pages drew a large share of their parties' engagement (Hotham 2026d). The simplest and most reliably coded form of personalisation in my scheme is whether the post shows the party's own leader. I expect such posts to draw more reactions in particular.

Entertainment, celebrity and ordinary people. Entertaining content draws reactions on Facebook (Keller and Kleinen-von Königslöw 2018), and humorous posts were more likely to be liked, commented on and shared in the study by Heiss et al. (2019). Celebrities bring audiences of their own and signal that a campaign is popular. Pictures of ordinary people are a staple of campaign communication and a way of claiming to represent social groups (Hotham 2026e); positive depictions of ordinary citizens went with more love reactions in Germany (Jost et al. 2020). I expect humour and celebrities to go with more engagement, but have no clear expectation for pictures of the public.

Policy and mobilisation. Policy content is what campaigns are supposed to be about, but there is little evidence that it draws engagement. In 2019, posts on environmental and economic issues drew less engagement than others (Bene et al. 2022), and Heiss et al. (2019) find that reasoning, post length and references to competitors went with more engagement. I expect pledges to make little difference. Calls to action are more ambiguous. Requests to share drove sharing in Hungary (Bene 2017), but mobilisation cues mostly lowered engagement in the study by Heiss et al. (2019), and on Britain First's page requests to share drew more engagement while requests to join or donate drew less (Hotham 2026c). I expect calls to share to go with more shares, and leave calls to vote as an open question.

Pages. The posts come from two kinds of page. Party pages and leader pages did different work in these campaigns (Hotham 2026a), and audiences may respond differently to the same content on each. A call to share or vote is routine on a party page and unusual on a leader's; a joke from a leader may land differently from a joke from a party. I therefore ask whether the associations differ between the two kinds of page.

3 Data

3.1 Posts

The posts come from the second dataset of my doctoral thesis (Hotham 2021): all posts that could be retrieved through Netvizz (Rieder 2013) from the Labour Party and Conservative Party pages and the pages of the two parties' leaders in the month before the 2015 and 2017 general elections. The 2015 posts run from 8 April to 7 May 2015 and the 2017 posts from 10 May to 7 June 2017. The base data, with the engagement counts, were collected in January 2018. The master coding file holds 1,208 posts. Three posts from the 2015 Conservative page have missing or inconsistent engagement counts, and I drop them, leaving 1,205 posts from eight pages (Table 1). Together they drew 9.16 million interactions, of which 59% were reactions (likes, and from 2016 the other reactions), 14% comments and 27% shares.

Engagement counts. For each post the file records the number of reactions, comments and shares, and for 2017 the number of each emotional reaction. I call their sum *interactions*. To check these counts I matched the coded posts to a separate CrowdTangle export of the same pages that I made in October 2020 (CrowdTangle Team 2020). For the 1,008 posts that matched on post identifier or text, the two sources agree closely: the correlation of logged total interactions is 0.97, and CrowdTangle's later counts are a median 4% lower than the coded file's.

A ranked sample. Facebook's interface for researchers returned a limited number of each page's posts per year, ranked by engagement (Hotham 2021). The coded posts are therefore each page's retrievable posts, not necessarily all of them, and the question is how much was lost. CrowdTangle gives an independent count. For five pages, the 2015 Conservative, Cameron and Miliband pages and the 2017 Conservative and May pages, the coded set contains every post or nearly every post that CrowdTangle holds for the same weeks (96% to 100%). For the other three it does not: the coded posts are 49% of CrowdTangle's posts for the 2015 Labour page, 70% for the 2017 Labour page and 75% for Corbyn's page. The posts that were not coded had lower engagement: in CrowdTangle's counts, the median uncoded post on the 2017 Labour page drew 1,623 interactions against 3,890 for coded posts, and the gaps were smaller for the 2015 Labour page (1,935 against 2,648) and Corbyn's page (11,687 against 13,407). Part of the shortfall for the 2015 Labour page is a difference of format, since the coded set has almost no link or text posts from that page while CrowdTangle holds many. For these three pages, the sample is truncated towards the more engaging posts. Truncation on the outcome tends to weaken associations within the retained range rather than create them, but it also means that results for these pages describe the better-performing part of each page's output. I report all results for the five near-complete pages separately.

Followers. The CrowdTangle export records each page's number of likes at the time of every post. I use it to build a daily follower count for each page, taking the value from the nearest day on which the page posted. Followers grew during both campaigns, most quickly on the 2017 Labour page (from 666,000 to 916,000) and Corbyn's page (from 871,000 to 1,102,000).

Engagement was very uneven within pages (Figure 1). The median post drew 4,216 interactions, but the median on Corbyn's page (13,898) was more than six times that on Miliband's (2,086), and on most pages the top tenth of posts drew 29% to 41% of the page's interactions. This skew is why I model counts with a negative binomial model and compare posts within pages.

Table 1. Pages and posts. Coded share: coded posts that match a post in the CrowdTangle export, as a share of all CrowdTangle posts by the page in the same weeks. Top 10% share: share of the page’s interactions drawn by its most engaged-with tenth of posts. Followers: page likes at the time of posting, from CrowdTangle.

Page	Posts coded	CrowdTangle posts in window	Coded share of CT posts	Median interactions	Top 10% share	Followers (thousands)
Conservative Party 2015	185	138	100%	3,798	22%	371 to 472
David Cameron 2015	138	96	100%	4,546	29%	511 to 548
Labour Party 2015	237	276	49%	2,188	40%	231 to 307
Ed Miliband 2015	78	76	97%	2,086	32%	89 to 145
Conservative Party 2017	95	99	96%	6,979	40%	574 to 615
Theresa May 2017	50	50	100%	7,586	38%	368 to 411
Labour Party 2017	278	394	70%	4,097	41%	666 to 916
Jeremy Corbyn 2017	144	191	75%	13,898	29%	871 to 1102

Notes: For the 2015 Conservative and Cameron pages, CrowdTangle holds fewer posts than the coded set, and every CrowdTangle post is in the coded set.

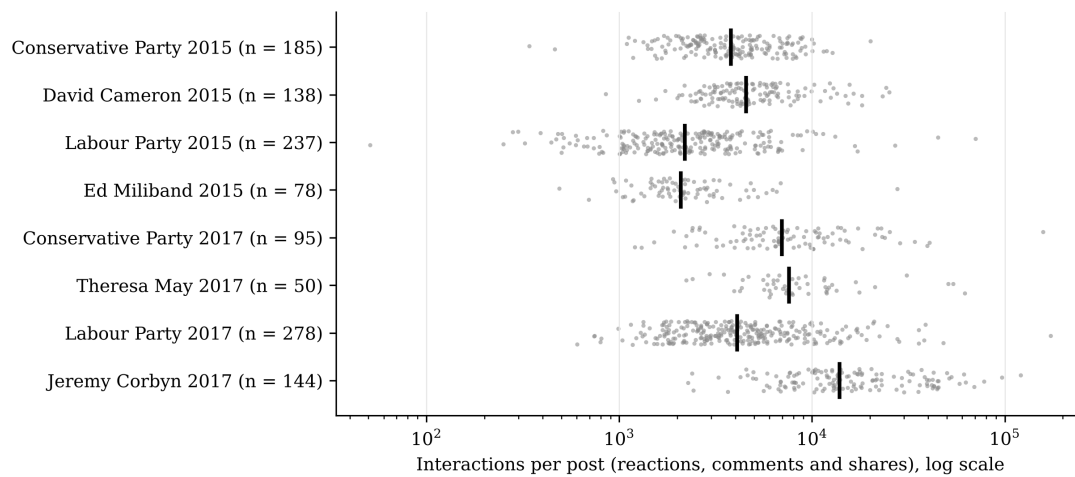


Figure 1. Interactions per post by page. Each dot is a post; the vertical bar is the page median. Log scale.

3.2 Coding

I coded each post by hand, over eight months after the data were collected, for the features of the thesis coding scheme, which covers information and framing, personalisation and rhetoric, mobilisation and the format of the post (Hotham 2021). The codes are binary and not mutually exclusive: a video can begin with a joke and end with an attack, and it then carries both codes. Images and video were coded as well as text. I use the codes as they stand in the master coding file, which reproduces the page-level shares reported in my earlier papers on this corpus; for example, 55% of party page posts and 35% of leader page posts asked for the vote, and 59% and 8% asked people to share (Hotham 2026a).

Reliability. During the thesis an independent coder recoded a random sample of the posts, drawn with a random number generator, and the thesis reports a Krippendorff’s α of 0.81 pooled across the binary codes (Hotham 2021). The surviving file from that exercise contains the second coder’s codes for 100 posts from all eight pages, each of which I matched to the master file by post link (99 posts) or text (one post). For this paper I recomputed agreement code by code, comparing the second coder’s codes with those in the current master file (Krippendorff 2004). Pooled over all 20,198 post-code pairs that the two files share, the coders agreed on 93% of decisions, but because most codes are rare the pooled α is

Table 2. Pre-specified features. Share: share of the 1,205 posts with the feature. α and Agree: Krippendorff's α and percentage agreement between the author and the independent coder on 100 posts.

Feature	Coding rule (thesis scheme)	Share	α	Agree
Negative orientation	Political content with a negative orientation: criticism, attack or regret	36%	0.72	88%
Criticises opposing leader	Negative appraisal of the opposing party leader	26%	0.95	98%
Own leader pictured	The page's own party leader appears in an image or video	36%	0.80	91%
Humour	Any use of humour	5%	0.94	99%
Celebrity appears	A male or female celebrity appears or is named	8%	0.86	98%
Members of the public pictured	Non-political members of the public pictured in an image or video	38%	0.50	78%
Pledge	The post makes a pledge or promise	57%	0.52	76%
Asks for the vote	The post asks people to vote for the party	48%	0.64	83%
Asks people to share	The post asks people to share it	42%	0.60	83%

0.61, lower than the thesis figure. I cannot reconstruct the thesis calculation from the surviving files; the difference may reflect the way codes were pooled or later revisions to the master coding. I therefore use my own code-by-code values and treat them as the relevant measure. They vary widely. Codes about who or what appears in a post, such as the leader, a celebrity or humour, were reproduced well (α from 0.80 to 0.95), while judgements about framing and information, such as whether a post contained policy detail ($\alpha = 0.28$) or defined a problem ($\alpha = 0.42$), were not. With 100 posts, α for rare codes is itself imprecise.

3.3 Pre-specified features

From the literature in Section 2 I chose a set of features to test as the main analysis, and screened each against the second coder before fitting any model of engagement. I kept features with α of at least 0.50, and where a concept had several codes I took the most reliable. The resulting nine (Table 2) are: negative orientation and criticism of the opposing leader (negativity and attack); whether the page's own leader appears in an image or video (visual personalisation); humour; celebrities; members of the public pictured; pledges (policy); and calls to vote and to share (mobilisation). Five of these meet the conventional standard of $\alpha \geq 0.67$ for firm conclusions (Krippendorff 2004); the other four, pictures of the public (0.50), pledges (0.52), calls to share (0.60) and calls to vote (0.64), are tentative. Two concepts from the literature could not be measured reliably: positive personalisation ($\alpha = 0.37$) and personal or apolitical content (0.51 for the two codes combined, but each below 0.35). I also could not test the distinction between valence and position issues for reliability, because the second coder's file lacks the valence codes. These appear only in the exploratory appendix.

The nine features overlap. Negative posts often criticised the opposing leader (the correlation between the two codes is 0.65), and I estimate their associations jointly so that each is net of the others.

4 Method

The main model is a negative binomial regression of the interactions on post i on page p :

$$\log E[y_{ip}] = \sum_{k=1}^9 \beta_k x_{kip} + \mu_p + \phi_{f(i)} + \delta \log(1 + w_i) + \omega_{wk(i)} + \lambda_{d(i)} + \tau_{h(i)} + \gamma \tilde{F}_{p,t(i)}, \quad (1)$$

where x_{kip} are the nine features, μ_p is a fixed effect for each of the eight pages, ϕ a fixed effect for the format of the post (photo, video, link or text only), w the number of words, ω the week of the campaign counted back from polling day, λ the day of the week, τ the time of day (before noon, afternoon or evening) and $\tilde{F}$ the logged follower count on the day, centred within page. Because each page belongs to one party at one election, the page effect absorbs all differences between parties, leaders and years, and each feature is compared with other posts on the same page. The 2017 Corbyn sheet records only the date of each post, so time of day is unknown there; the page effect absorbs this. I report coefficients as percentage differences, $100(e^\beta - 1)$, so that a value of 20 means that posts with the feature drew about 20% more interactions than otherwise similar posts on the same page without it. Standard errors are clustered by page and day, since posts on the same page and day share news events.

I estimate the model for total interactions and separately for reactions, comments and shares. I also estimate each feature on its own with the same controls, which shows how much of each association is shared with the other features. For the nine main estimates I control the false discovery rate with the Benjamini and Hochberg procedure (Benjamini and Hochberg 1995) and report q -values; for the 27 component estimates I apply the same correction across all 27. For 2017, I model the percentage of each post's reactions that were love, angry and haha reactions with a linear model and the same controls.

Checks. I re-estimate the main model as a linear model of logged interactions; with calendar-day fixed effects in place of week and day of week, so that each post is compared with posts on the same day; without the follower control; with standard errors clustered by page and week; without posts from the eve of polling day and polling day itself; with further framing codes and with negative personalisation added; on a within-page percentile rank; and leaving out one page at a time. To address the ranked sample, I estimate the model separately for the five near-complete pages and for the three partial ones. I test whether the associations differ between party and leader pages and between 2015 and 2017 by adding interactions, again with a correction for multiple testing.

Exploratory features. I estimate each of 52 further codes that appear in at least ten posts, one at a time with the same controls, and control the false discovery rate within this family. These results are in Appendix Table A3, with each code's reliability. Topics are reported in Appendix Table A2.

5 Results

5.1 Negativity, humour and celebrity

Figure 2 and Table 3 show the main estimates. Three features are associated with more interactions after correction for multiple testing. Posts with a negative orientation drew about 20% more interactions than other posts on the same page (95% CI 4% to 39%, $q = 0.047$). Posts that used humour drew about 60% more (CI 15% to 124%, $q = 0.025$), and posts in which a celebrity appeared about 37% more (CI 11% to 70%, $q = 0.025$). Humour was rare, in 5% of posts, and the interval for it is wide.

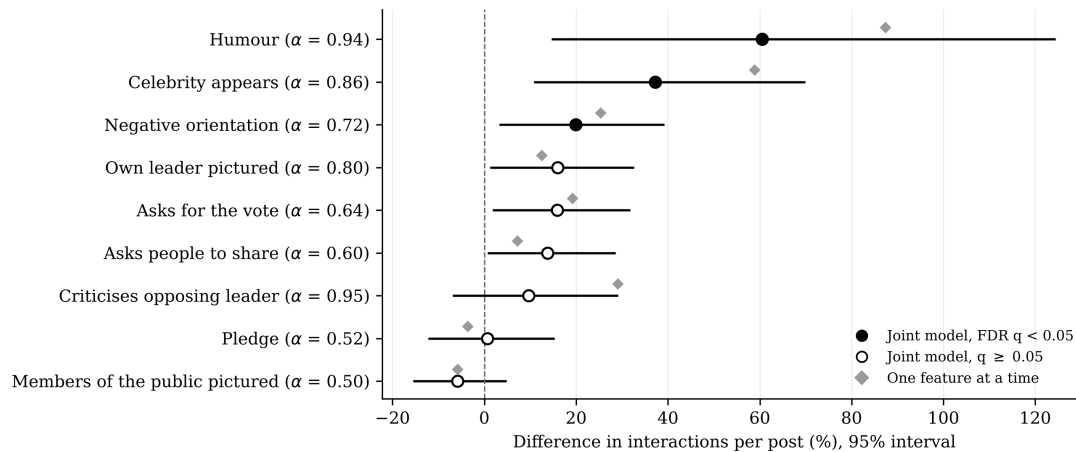


Figure 2. Content features and interactions per post. Percentage difference in interactions between posts with and without each feature on the same page, from a negative binomial model with page, format, week, weekday and time-of-day effects, word count and followers. Circles: all nine features in one model, filled where the Benjamini and Hochberg $q < 0.05$. Diamonds: each feature in a separate model with the same controls. 95% intervals clustered by page and day. α : reliability against the independent coder.

Three further features have estimates of similar size with q -values just above 0.05. Posts that showed the page’s own leader drew about 16% more (CI 2% to 32%, $q = 0.052$), posts that asked for the vote about 16% more (CI 2% to 32%, $q = 0.052$) and posts that asked people to share about 14% more (CI 1% to 28%, $q = 0.053$). Pledges (1%, CI –12% to 15%) and pictures of members of the public (–6%, CI –15% to 5%) made no detectable difference.

Criticism of the opposing leader is a special case. On its own, a post that criticised the opposing leader drew about 29% more interactions than other posts on the same page (CI 11% to 50%, $q = 0.003$). Held alongside negative orientation, with which it largely overlaps, the estimate falls to 10% (CI –7% to 29%). Criticism of the opposing leader went with more engagement mostly because it was negative; among negative posts, naming and criticising the leader added little that I can detect. The reverse is not true: negative orientation keeps most of its association when criticism of the opposing leader is held constant.

Format and timing. Among the controls, text-only posts drew about 80% more interactions than photos on the same page (CI 39% to 134%), and posts linking to another website about 20% fewer (CI 8% to 31%). Videos drew about 16% more than photos, with an interval that includes no difference (CI –2% to 38%). The thesis found that videos drew the most engagement on average across 2010 to 2017 (Hotham 2021); within the same campaign page and month, the advantage of video over photo is smaller, and the few text-only posts, most of them on leader pages, stand out. Engagement also rose as polling day approached: posts four or more weeks before the election drew about 43% less than posts in the final week (CI 27% to 56%).

5.2 Different features, different kinds of engagement

The features did not all go with the same kind of engagement (Figure 3). Negative posts drew more comments (26%, CI 8% to 47%) and more shares (35%, CI 10% to 65%), and a smaller and less certain increase in reactions (13%, CI –2% to 29%). Criticism of the opposing leader went with more comments (21%, CI 4% to 41%) even when negativity was held constant, but not with more shares. Posts showing

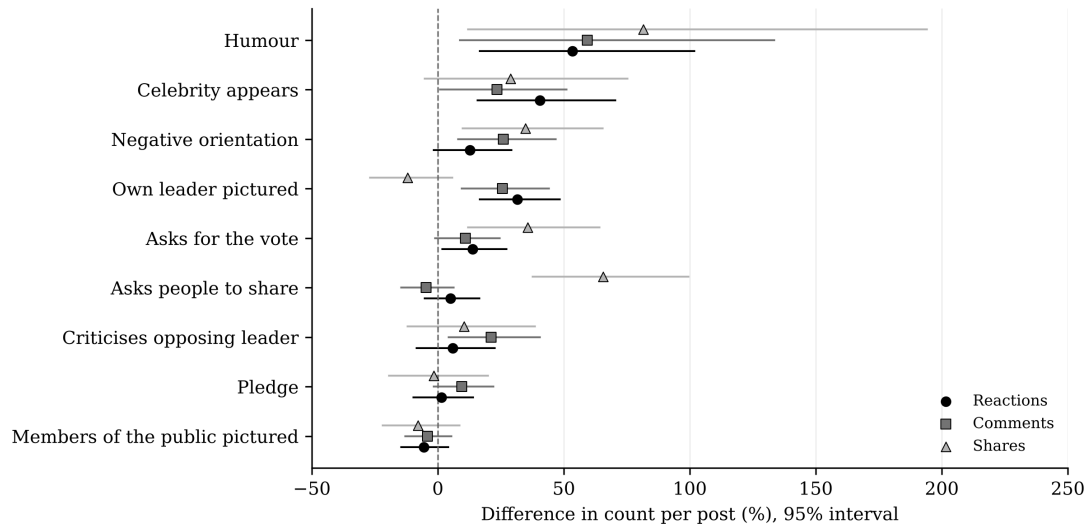


Figure 3. Reactions, comments and shares. Percentage difference in each count between posts with and without each feature on the same page; all nine features in one negative binomial model per outcome with the controls of Figure 2. 95% intervals clustered by page and day.

the page’s own leader drew more reactions (31%, CI 17% to 48%) and comments (26%, CI 10% to 44%), and no more shares (an estimated 12% fewer, CI from 27% fewer to 6% more). Calls to share went, as expected, with more shares (66%, CI 38% to 99%) and not with more reactions or comments, and calls to vote with more shares (36%, CI 12% to 64%). Humour went with more of all three. These differences match the idea that shares and comments respond to conflict and to direct requests, while reactions respond to the leader.

5.3 Party pages, leader pages and the completeness of the sample

Several associations depend on where the post appeared (Figure 4, left, and Appendix Table A1). Calls to vote went with about 33% more interactions on party pages (CI 14% to 55%) and none on leader pages (−8%, CI −23% to 10%; $q = 0.008$ for the difference). Calls to share went with 17% more on party pages and an estimated 18% less on leader pages ($q = 0.049$). Celebrities went with about 61% more on party pages (CI 25% to 106%) and nothing detectable on leader pages ($q = 0.008$); celebrities appeared in 18% of the 2017 Labour page’s posts and 13% of Corbyn’s, and never on the 2017 Conservative or May pages, so this association rests mostly on the Labour side. Negative orientation went with similar increases on both kinds of page (21% and 15%).

The completeness of the sample matters too (Figure 4, right, and Table 4). On the five near-complete pages, with 546 posts, negative orientation went with about 17% more interactions (CI 0% to 37%) and calls to share with about 25% more (CI 3% to 51%), but humour (17%, CI −7% to 47%), celebrities (−14%), the leader pictured (−12%) and calls to vote (6%) did not go with clear increases, and pictures of the public went with 16% fewer interactions (CI 6% to 25%). On the three partially covered pages, the 2015 and 2017 Labour pages and Corbyn’s, with 659 posts, the associations for the leader pictured (42%), humour (76%), celebrities (41%), calls to vote (21%) and negative orientation (27%) were all larger. This split cannot separate the effect of truncation from differences between the pages themselves, since the three partial pages are all Labour’s. What it shows is that negativity is the one feature whose association is clearly present in both halves of the data, and that the pooled estimates for humour, celebrities, leader

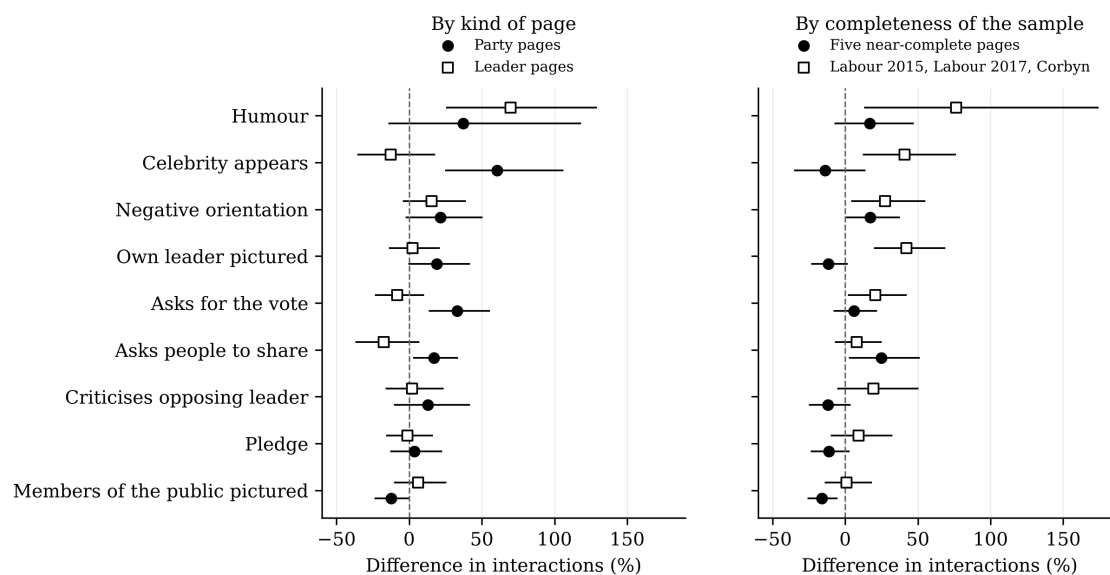


Figure 4. Associations by kind of page and by completeness of the sample. Left: party pages and leader pages, from one model with interactions between each feature and a leader page indicator. Right: separate models for the five pages whose coded posts cover 96% to 100% of CrowdTangle’s posts (546 posts) and for the 2015 and 2017 Labour and 2017 Corbyn pages (659 posts). 95% intervals.

images and calls to vote are driven mainly by the Labour and Corbyn pages.

Between the two elections, most associations were similar. The exception is criticism of the opposing leader, which went with about 41% more interactions in 2017 (CI 13% to 76%), net of negative orientation, and nothing detectable in 2015 (−8%), a difference that does not survive correction for multiple testing ($q = 0.077$).

5.4 Robustness

Table 4 collects the checks. The estimates for negative orientation range from 14% to 25% when each page is left out in turn and are positive on seven of the eight pages when estimated page by page. They are close to the main estimate in a linear model, with calendar-day fixed effects, without the follower control, without the last two days of the campaign and with framing codes added, and smaller but still positive (14%, $p = 0.06$) when negative personalisation, which overlaps with negativity, is added. Clustering by page and week widens the intervals for the leader pictured and for calls to share so that they include no difference. Leaving out one page moves the estimate for celebrities between 5% and 51% and for the leader pictured between −3% and 26%. On a within-page percentile rank, which is insensitive to the most extreme posts, the features with positive estimates in the main model, other than pledges, all remain positive, from 3.5 percentile points for criticism of the opposing leader to 11.8 for humour.

5.5 Love, anger and laughter in 2017

In 2017 an average of 6.3% of a post’s reactions were love reactions, 1.9% angry and 1.8% haha; the rest were likes and a few wow and sad reactions. The composition followed the content in ways that fit the codes (Figure 5). Negative posts had a larger share of angry reactions, by 1.8 percentage points (CI 1.1

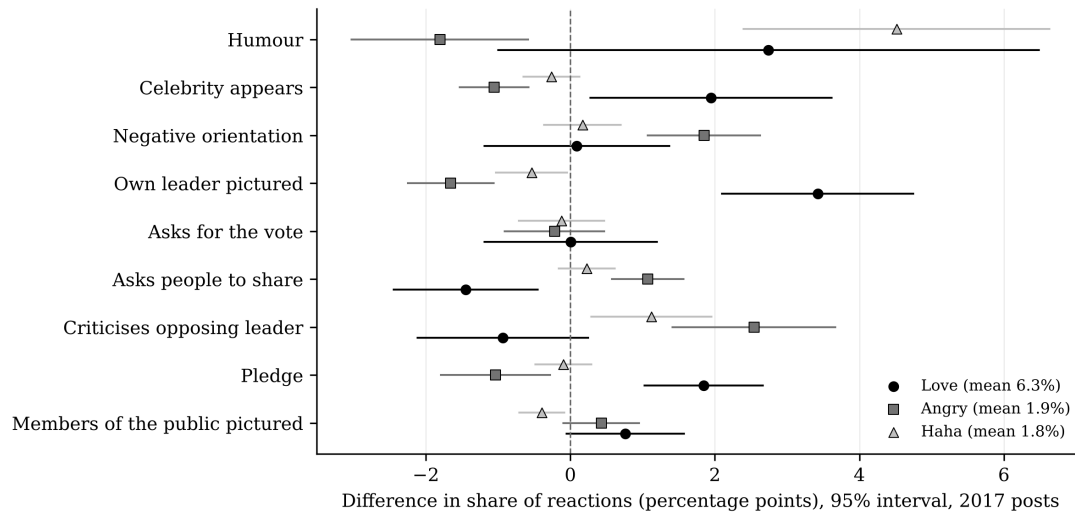


Figure 5. Emotional reactions, 2017. Difference in the percentage of a post's reactions that were love, angry and haha reactions, between posts with and without each feature on the same page. Linear model with all nine features and the controls of Figure 2; 567 posts from the four 2017 pages. 95% intervals clustered by page and day.

to 2.6), and criticism of the opposing leader by a further 2.5 points (CI 1.4 to 3.7), as well as 1.1 points more haha reactions. Posts with humour had 4.5 points more haha reactions (CI 2.4 to 6.6) and 1.8 points fewer angry ones. Posts showing the page's own leader had 3.4 points more love reactions (CI 2.1 to 4.7) and 1.7 points fewer angry ones; pledges had 1.8 points more love and 1.0 fewer angry; and celebrities 1.9 points more love and 1.1 fewer angry. All of these survive correction across the 27 estimates. Calls to share went with more angry reactions (1.1 points) and fewer love reactions (1.5 points). On these measures, then, the extra engagement that negative posts drew came with more anger, and the extra engagement on posts showing the leader came with more affection. These are averages of how audiences reacted; the data do not say who reacted, or whether the anger was directed at the post or at its target.

5.6 The other codes

Of the 52 further codes I examined, 24 have unadjusted $p < 0.05$ and 21 have $q < 0.05$ (Appendix Table A3). Many are close relatives of the main features and point the same way: posts coded as more negative than positive (28% more interactions), as negatively personalised (37%), as using us-versus-them rhetoric (20%) or as using negative position or valence issues (44% each) drew more, and posts coded as positive in orientation drew 19% less. Showing or naming the opposing leader went with more engagement (39% and 23%), as did praise of the page's own leader (46%), first-person language (37%) and patriotic imagery (55%). Requests to sign up to the campaign (−38%) or to help on the doorstep (−51%) and links to outside websites (−31%) went with less.

These results should be read with the reliability of each code in view. Of the 21 codes with $q < 0.05$, six were reproduced by the second coder with $\alpha \geq 0.67$: negative personalisation, praise of the own leader, showing the opposing leader, naming the opposing leader in text, reframed external footage and celebrity endorsement. Several others, including first-person language ($\alpha = 0.47$), patriotic imagery (0.42), positive orientation (0.42), requests to help on the doorstep (close to zero, with very few cases in the sample) and links to outside websites (0.11), were not reliably reproduced. Codes about framing and information, the codes that come closest to measuring the substance of policy, were among the least reliable: policy detail ($\alpha = 0.28$), prognosis (0.19) and political information (0.16). None of policy

detail, positive prognosis or political information was associated with engagement. I cannot tell whether policy content really made no difference or whether its measurement is too noisy to show one.

Among primary topics (Appendix Table A2), whose reliability is moderate ($\alpha = 0.59$ across 13 categories), posts mainly about leadership drew 37% more interactions ($q = 0.001$) and posts mainly about party activity 20% less ($q = 0.027$); no policy topic differed after correction. Each additional topic in a post went with 24% more interactions (CI 13% to 35%).

Table 3. Content features and engagement. Percentage difference in the count per post between posts with and without each feature on the same page. Negative binomial models with page, format, week, weekday and time-of-day fixed effects, word count and followers. 95% intervals in brackets; q : Benjamini and Hochberg q -value across the nine estimates in columns 1 and 2 and across the 27 estimates in columns 3 to 5.

	(1) Interactions one at a time	(2) Interactions joint	(3) Reactions joint	(4) Comments joint	(5) Shares joint
Negative orientation	+25*** [+11, +42] $q = 0.00$	+20* [+4, +39] $q = 0.05$	+13 [−2, +29] $q = 0.15$	+26** [+8, +47] $q = 0.01$	+35** [+10, +65] $q = 0.01$
Criticises opposing leader	+29*** [+11, +50] $q = 0.00$	+10 [−7, +29] $q = 0.30$	+6 [−8, +22] $q = 0.48$	+21* [+4, +40] $q = 0.04$	+10 [−12, +39] $q = 0.44$
Own leader pictured	+13 [−4, +32] $q = 0.23$	+16* [+2, +32] $q = 0.05$	+31*** [+17, +48] $q = 0.00$	+26** [+10, +44] $q = 0.01$	−12 [−27, +6] $q = 0.26$
Humour	+87** [+25, +181] $q = 0.01$	+60** [+15, +124] $q = 0.03$	+53** [+17, +102] $q = 0.01$	+59* [+9, +134] $q = 0.04$	+81* [+12, +194] $q = 0.04$
Celebrity appears	+59** [+17, +116] $q = 0.01$	+37** [+11, +70] $q = 0.03$	+40*** [+16, +70] $q = 0.01$	+23* [+1, +51] $q = 0.08$	+29 [−5, +75] $q = 0.17$
Members of the public pictured	−6 [−16, +6] $q = 0.41$	−6 [−15, +5] $q = 0.30$	−6 [−14, +4] $q = 0.35$	−4 [−13, +5] $q = 0.44$	−8 [−22, +9] $q = 0.44$
Pledge	−4 [−16, +11] $q = 0.60$	+1 [−12, +15] $q = 0.92$	+1 [−10, +14] $q = 0.84$	+10 [−2, +22] $q = 0.16$	−2 [−19, +20] $q = 0.87$
Asks for the vote	+19* [+4, +36] $q = 0.02$	+16* [+2, +32] $q = 0.05$	+14* [+2, +27] $q = 0.05$	+11 [−1, +24] $q = 0.15$	+36** [+12, +64] $q = 0.01$
Asks people to share	+7 [−8, +25] $q = 0.42$	+14* [+1, +28] $q = 0.05$	+5 [−5, +16] $q = 0.44$	−5 [−15, +6] $q = 0.44$	+66*** [+38, +99] $q = 0.00$
Video (vs photo)		+16			
Link (vs photo)		−20**			
Text only (vs photo)		+80***			
Observations	1,205	1,205	1,205	1,205	1,205

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (unadjusted). Standard errors clustered by page and day.

Table 4. Robustness of the nine main estimates. Percentage difference in interactions per post, except the percentile row (within-page percentile points). Negative binomial models with the controls of Table 3 unless stated.

	Neg.	Attack	Leader	Humour	Celeb.	Public	Pledge	Vote	Share
Main estimate (Table 3, column 2)	+20*	+10	+16*	+60**	+37**	−6	+1	+16*	+14*
Log-linear (OLS on log(1 + interactions))	+17*	+9	+21**	+44**	+26*	−6	+2	+20***	+15**
Calendar-day fixed effects	+19**	+11	+13*	+72**	+35**	−8	+1	+19**	+14*
No follower control	+20*	+10	+16*	+60**	+37**	−6	+1	+16*	+14*
Clustered by page-week	+20*	+10	+16	+60*	+37***	−6	+1	+16*	+14
Without polling-day eve and polling day	+20*	+10	+17*	+60**	+38**	−7	+2	+14*	+13*
Adds policy detail, diagnosis, prognosis	+19*	+10	+18*	+58**	+39**	−6	−4	+16*	+14*
Adds negative personalisation, opposing leader pictured	+14	−20	+16*	+53*	+44**	−6	+3	+16*	+14*
Five near-complete pages only (n = 546)	+17*	−12	−12	+17	−14	−16**	−11	+6	+25*
Labour 2015, Labour 2017, Corbyn only (n = 659)	+27*	+19	+42***	+76*	+41**	+1	+9	+21*	+8
Within-page percentile rank (points)	+5.6*	+3.5	+7.9***	+11.8**	+7.6*	−2.7	−0.2	+8.6***	+6.8***
Leave one page out: range	+14 to +25	+1 to +16	−3 to +26	+48 to +73	+5 to +51	−12 to −3	−10 to +7	+5 to +21	+8 to +19
Pages with a positive estimate	7/8	6/8	5/8	6/6	4/5	3/8	2/8	3/8	3/7

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Neg.: negative orientation; Attack: criticises opposing leader; Leader: own leader pictured; Celeb.: celebrity; Public: members of the public pictured; Vote and Share: asks for the vote, asks people to share. Pages with a positive estimate: features estimated one at a time within each page, where at least five posts have and lack the feature.

6 Discussion

The answer to the first question is that the clearest correlate of engagement on these pages was negativity. Posts that criticised, attacked or expressed regret drew about a fifth more interactions than other posts on the same page, and the association held across party and leader pages, across both elections, on seven of the eight pages and in the part of the data where the sample is close to complete. This matches what studies of other countries and platforms have found (Bene 2017; Heiss et al. 2019; Bene et al. 2022; Rathje et al. 2021) and my own findings for the 2016 referendum (Hotham 2026f). It is also a modest association. A fifth more interactions is a small difference beside the variation between posts on the same page, where the top tenth of posts drew between 22% and 41% of a page's interactions. Negativity was one of several things associated with engagement, and not the largest.

Humour and celebrities were associated with larger differences, but on less firm ground. Both were rare, both rest mostly on the Labour and Corbyn pages, and the association with celebrities appears only on party pages. The leader's image went with more reactions and comments and more love reactions, consistent with the evidence that personal and emotional content draws engagement (Metz et al. 2020), but this too depends on which pages are included. Calls to vote and share went with more engagement on party pages, where they were routine, and not on leader pages, where they were rare. One reading is that audiences took such requests from a party page as part of a campaign they wanted to help, but from a leader's page as a departure from the personal voice they followed it for (Hotham 2026a). The data cannot test this.

On the second question, the features went with different kinds of engagement in ways that fit what each kind of engagement is. Shares responded to negativity and to explicit requests; comments responded to negativity, to criticism of the opposing leader and to the leader's image; reactions responded to the leader, humour and celebrities. In 2017 the emotional reactions point the same way: negative posts and criticism of the opposing leader drew a larger share of angry reactions, and posts showing the leader, pledges and celebrities a larger share of love. This fits evidence from the 2017 German campaign that negative portrayals of political actors drew angry reactions and positive depictions of ordinary citizens love reactions (Jost et al. 2020), and evidence that the sentiment of a post shapes its love and angry reactions (Eberl et al. 2020).

Several things made no detectable difference. Pledges, the most common of the nine features, in 57% of posts, did not go with more engagement, although in 2017 they drew a slightly warmer mix of reactions. Pictures of members of the public, a central element of how parties claimed to represent groups of voters (Hotham 2026e), made no difference overall and went with less engagement on the near-complete pages. Content about policy, in so far as the scheme measures it reliably, was not where engagement came from.

What do these associations mean for how campaigns use Facebook? I do not draw lessons for any party, and the data do not support them. The associations describe the response to posts that parties chose to publish, at times they chose, on pages with followers who chose to follow them. A negative post may have drawn more engagement because negativity engages, because parties attacked when there was something to attack, or because the attack came in a format or on a day that would have drawn engagement anyway; the controls address the last of these but not the first two. Engagement is also not reach or persuasion: a comment from an opponent counts the same as a comment from a supporter, and the data say nothing about who engaged or whether anyone's view changed.

Limitations. Four limits matter most. First, the sample is the set of posts Facebook allowed researchers to retrieve, ranked by engagement, and for the 2015 and 2017 Labour pages and Corbyn's page it omits

a quarter to a half of the posts, mostly less engaging ones. Results for the five near-complete pages are the cleanest test, and on those pages only negativity and calls to share went with clear increases. Second, reliability varies. My recomputed values are below the pooled figure reported in the thesis, and several concepts that matter in the literature, including positive personalisation, policy detail and diagnosis and prognosis framing, could not be measured reliably enough to test. Measurement error of this kind usually weakens associations, but with correlated codes it can also shift them from one code to another. Third, the data are eight pages, two parties and two elections; the page effects remove differences between them, but the associations within pages may not hold in other campaigns. Fourth, the engagement counts were collected in January 2018, months after the posts, and include engagement that came later.

7 Conclusion

Using hand-coded posts from the Labour and Conservative party and leader pages in the 2015 and 2017 general election campaigns, I find that posts with a negative orientation drew about a fifth more likes, comments and shares than other posts on the same page, more comments and shares in particular, and a larger share of angry reactions. This is the most robust pattern in the data. Humour, celebrities, pictures of the leader and calls to vote and share went with more engagement in the pooled data, but depended on the pages included and, for calls to action and celebrities, on whether the post came from a party or a leader page. Pledges and pictures of the public made no detectable difference. The design describes which content earned engagement in these two campaigns, not why. It also shows that richer coding schemes bring their own problems: many codes are associated with engagement, but many of those codes are not reliably measured, and the most useful next step would be a fresh reliability test of the scheme's framing and information codes.

Data and code

The post-level codes and engagement counts come from my doctoral research. The analysis code, the list of codes with their reliability, and aggregate results are available from the author. The CrowdTangle export used for the follower counts and the coverage check cannot be shared under CrowdTangle's terms.

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Provenance and AI use

The posts were collected in January 2018 and coded during my doctoral research at the University of Bath. This paper builds on my doctoral thesis ([Hotham 2021](#)). The analysis and writing were completed in 2026.

I designed the study and am responsible for the analysis and conclusions. I wrote the text, with drafting and editing assistance from Claude (Anthropic), which also helped prepare the analysis code. I reviewed

and checked all text and results.

Ethics

The data were collected and coded during my doctoral research at the University of Bath, which received ethics approval from the University. The analysis uses only codes and engagement counts of public posts by party and politician pages, reported in aggregate. No individual user data are analysed and no post is quoted.

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Appendix

Table A1. Differences between party and leader pages and between elections. Percentage difference in interactions for each feature, from negative binomial models with interactions between all nine features and a leader page indicator (left) or a 2017 indicator (right), with the controls of Table 3. q : Benjamini and Hochberg q -value for the difference, across the nine features.

	Party vs leader pages			2015 vs 2017		
	Party	Leader	q (diff.)	2015	2017	q (diff.)
Negative orientation	+21	+15	0.72	+17	+16	0.95
Criticises opposing leader	+13	+2	0.63	−8	+41	0.08
Own leader pictured	+19	+2	0.35	+7	+23	0.79
Humour	+37	+70	0.63	+35	+79	0.79
Celebrity appears	+61	−13	0.01	+29	+41	0.95
Members of the public pictured	−12	+6	0.17	−9	−5	0.95
Pledge	+3	−1	0.72	−6	+11	0.79
Asks for the vote	+33	−8	0.01	+13	+24	0.79
Asks people to share	+17	−18	0.05	+13	+15	0.95

Table A2. Primary topic and engagement. Percentage difference in interactions between posts whose single primary topic is in the category and all other posts, one model per category, with the controls of Table 3. Categories with at least 20 posts. Topic categories follow the thesis’s 13-category scheme; primary topic reliability $\alpha = 0.59$.

Primary topic	Posts	Difference	95% interval	p	q
Economy	289	−13%	[−26, +4]	0.119	0.149
Party action	235	−20%	[−32, −6]	0.005	0.027
Health and Social care	208	+7%	[−10, +28]	0.452	0.452
Leadership	205	+37%	[+17, +59]	0.000	0.001
Protection	53	−10%	[−27, +11]	0.335	0.373
EU	46	−30%	[−48, −6]	0.019	0.060
Social Identity	43	−18%	[−35, +4]	0.100	0.143
Apolitical	39	+31%	[+3, +67]	0.030	0.060
Education	34	−28%	[−46, −4]	0.025	0.060
Young people	31	+73%	[−4, +210]	0.067	0.112
Number of topics (per topic)	1,205	+24%	[+13, +35]	0.000	

Table A3. Exploratory codes. Percentage difference in interactions between posts with and without each code on the same page, one model per code, with the controls of Table 3. Codes in at least ten posts, excluding the main features and their components. q : Benjamini and Hochberg q -value across the 52 codes. α : reliability against the independent coder (n.t.: not tested, because the code is not in the coder’s file). † $0.50 \leq \alpha < 0.67$; ‡ $\alpha < 0.50$ or not tested. Sorted by p .

Feature	Share	α	Difference	95% interval	p	q
Position issue (negative) [†]	30%	0.50	+44%	[+25, +66]	0.000	0.000
Help on the doorstep [‡]	5%	−0.01	−51%	[−64, −34]	0.000	0.000
Valence issue (negative) [‡]	26%	n.t.	+44%	[+22, +69]	0.000	0.000
Link to external website [‡]	23%	0.11	−31%	[−42, −18]	0.000	0.000
First-person language [‡]	39%	0.47	+37%	[+17, +60]	0.000	0.001

Feature	Share	α	Difference	95% interval	p	q
Negatively personalised	28%	0.79	+37%	[+17, +61]	0.000	0.001
More negative than positive [†]	27%	0.60	+28%	[+11, +48]	0.001	0.005
Praise of own leader	15%	0.68	+46%	[+17, +83]	0.001	0.006
Sign up to campaign [‡]	6%	-0.02	-38%	[-54, -16]	0.002	0.008
Patriotic imagery [‡]	7%	0.42	+55%	[+18, +105]	0.002	0.008
Positive orientation [‡]	77%	0.42	-19%	[-30, -7]	0.002	0.010
Opposing leader pictured	17%	0.79	+39%	[+12, +71]	0.002	0.010
Reframed external footage	13%	0.78	+43%	[+14, +81]	0.002	0.010
Diagnosis: problem defined [‡]	65%	0.42	+17%	[+6, +29]	0.003	0.010
Mainly rhetorical, not factual [‡]	52%	0.06	+21%	[+7, +37]	0.003	0.010
Opposing leader named in text	18%	0.89	+23%	[+7, +42]	0.003	0.010
Personal message [‡]	8%	0.34	+39%	[+10, +74]	0.005	0.016
Party broadcast video [‡]	2%	n.t.	+62%	[+14, +131]	0.008	0.022
Celebrity endorsement	8%	0.69	+59%	[+13, +124]	0.008	0.022
Us-versus-them rhetoric [†]	37%	0.56	+20%	[+5, +38]	0.009	0.024
Mainstream media (negative use) [†]	10%	0.51	+39%	[+8, +78]	0.010	0.025
Own leader named in text	14%	0.69	+30%	[+4, +62]	0.022	0.053
Video uses broadcast footage [†]	10%	0.53	+32%	[+2, +71]	0.034	0.075
Poster [‡]	15%	0.48	+17%	[+1, +36]	0.034	0.075
Apolitical personal information [‡]	5%	0.26	+57%	[-0, +148]	0.052	0.107
Diagnosis: success defined [‡]	32%	0.15	-11%	[-21, +0]	0.057	0.114
Party members pictured	13%	0.74	+19%	[-2, +44]	0.086	0.166
Older people pictured [†]	12%	0.59	+19%	[-3, +46]	0.100	0.185
Public's own voice [‡]	6%	0.46	+35%	[-6, +95]	0.103	0.185
Members of the public in text [‡]	38%	-0.03	-9%	[-19, +2]	0.108	0.187
Cuteness (children, animals)	7%	0.73	-13%	[-27, +3]	0.116	0.194
Prognosis: how others will not [‡]	21%	0.33	+15%	[-4, +37]	0.143	0.233
Get-out-the-vote message [‡]	6%	-0.01	-19%	[-40, +9]	0.162	0.255
Positively personalised [‡]	47%	0.37	+12%	[-5, +31]	0.168	0.258
Criticises opposing party [‡]	13%	0.26	+18%	[-9, +53]	0.204	0.304
Praise of campaigners	5%	0.71	+26%	[-16, +89]	0.267	0.385
Hashtag	7%	0.86	-8%	[-22, +8]	0.320	0.450
Prognosis: how we will solve it [‡]	71%	0.19	+6%	[-6, +19]	0.343	0.469
Question to the audience [‡]	13%	0.07	+10%	[-10, +34]	0.358	0.477
Register to vote	5%	1.00	-14%	[-38, +19]	0.372	0.483
Children pictured	11%	0.74	+10%	[-14, +40]	0.463	0.587
Public-service worker pictured [†]	15%	0.62	-6%	[-21, +12]	0.498	0.617
Political information [‡]	90%	0.16	+5%	[-11, +24]	0.564	0.682
Politician's family [‡]	1%	0.32	+10%	[-26, +65]	0.627	0.741
Policy detail [‡]	38%	0.28	+3%	[-11, +19]	0.652	0.753
Young people pictured [†]	15%	0.61	+4%	[-14, +25]	0.692	0.782
Party slogan [‡]	42%	0.34	+3%	[-12, +20]	0.742	0.821
Non-political expert (positive) [†]	5%	0.58	+3%	[-14, +24]	0.760	0.823
Mainstream media (positive use) [‡]	6%	0.29	-3%	[-20, +18]	0.785	0.833
Text-only image [‡]	6%	0.13	-3%	[-21, +21]	0.804	0.836
Valence issue (positive) [‡]	55%	n.t.	-1%	[-14, +14]	0.915	0.933
Position issue (positive) [‡]	55%	0.48	+0%	[-13, +15]	0.983	0.983