

The Evolving Nature of EU Integration

Issue embedding in the EP election campaign communication

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1 Introduction

The varying degree to which issues around European integration shape political competition has concerned political scientists since the dawn of the European Union. Synonymous with the question of EU salience and politicization, prior research has focused on which political actors are responsible for EU politicization (Hutter & Kriesi 2019, De Vries & Hobolt 2020, Hutter & Kriesi 2019, Kriesi & Grande 2015, De Wilde et al. 2016). In the past, *challenger* parties were considered as the main “promoters” of EU-related issues, while *dominant* parties tried to downplay or blur their pro-EU stances (De Vries & Hobolt 2020). This pattern changed in more recent years as pro-European, dominant parties took over from anti-EU, challenger parties the leading role in the EU integration debate (Braun & Grande 2021, Castanho Silva & Proksch 2021, Fazekas et al. 2021, Maier et al. 2021a). However, these strategies came with different electoral returns.

Recently, this tendency was further reinforced at the time of the 2019 EP elections with the emergence of an EP party group, Renew Europe, campaigning on a coherent and strong Europhile platform. In addition, complete opposition toward the EU has been replaced with demands for reform in the EU (Treib 2021), presenting new challenges for parties and candidates. We investigate how, along with salience, discussions of the EU are linked to other political issues, which we label as embedding.

We exploit the difference in entrepreneurial strategies of dominant (i.e. parties with government experience) and challenger parties (i.e. parties without government experience)

when it comes to EU issues (Hobolt & de Vries 2015, De Vries & Hobolt 2020). We argue that candidates of dominant parties uniformly broaden the scope of EU issues, but candidates of challenger parties focus on a restricted embedding, linking EU integration to their core political issues owned within the national political arena, such as immigration and environment. Given the electoral arena, our initial investigation incorporates party and candidate features in terms of their dominant vs. challenger status, while also distinguishing between specific challenger party groups.

Traditionally, the way parties communicate about Europe was studied by analyzing manifestos, but these are elaborate documents written before the start of the campaign and are not necessarily aimed at a broad audience (Tresch et al. 2018). In this regard it is not clear how and in what form the issue entrepreneurial strategies parties outline in their manifestos reach their intended audience, i.e., the broader public. Furthermore, while focusing on national manifestos might underestimate the salience of EU issues (Braun et al. 2016), by the nature of the competition parties need to talk about Europe in Euromanifestos, which can overestimate the actual attention dedicated to these issues. In order to overcome these limitations we rely on an original data source that consists of the Twitter communication of candidates for the 2019 EP elections across several EU Member States. Focusing on the social media communication of candidates allow us to study the direct communication of parties in their attempt to manipulate the politicization of EU issues (Fazekas et al. 2021). We use a combination of human coding and machine learning to identify the issue content of this communication and use between candidate analyses to test our main argument. Overall we find that debates around the EU are no longer focused on the polity scope of the EU. Parties are by now embedding specific policy issues when they talk about the EU, though we can note substantial differences between countries in this regard. Confirming previous trends dominant parties are by now the main promoters of EU issues. Though it seems that Green, left-, and, moderate-Eurosceptic challengers are more likely to move the debate towards the role of the EU in the policy-making process, by focusing on core issues. These general patterns are supplemented with observations based on a brief qualitative analysis.

2 The evolution of EU issues: the role of challenger parties

EU issues, defined as conflicts around both the polity scope (i.e. questions around the fundamental features of the EU’s political system) and policy scope (i.e. questions around the impact of the EU in the policy-making process) (Braun et al. 2016), have shaped EU political competition since the end of the “permissive consensus” era in the early 1990s (Hooghe & Marks 2009). Since then, the salience of these issues has increased substantially (De Vries 2018*b*, Braun & Grande 2021, Bakker et al. 2018), and they are also growing distinct from the traditional left-right axis of political competition (Jackson & Jolly 2021). Thus it is not surprising that they occupy an important role in structuring electoral competition in EP elections (Jackson & Jolly 2021, De Vries 2018*b*, De Vries & Hobolt 2020). By the time of the 2019 EP election they might have been even more important than the economic left-right dimension (Jackson & Jolly 2021). The same pattern can be also observed at the national level, where EU issues played a significant role in a number of recent national elections (De Vries 2018*a*, Angelucci & Carrieri 2022, Carrieri & Angelucci 2022), most notably structuring UK political competition even after Brexit (Hobolt & Rodon 2020), and contributing to the rise in populism across Central and Eastern Europe (Csehi & Zgut 2021).

The increased importance of EU issues in structuring political competition in Europe can be traced back to the issue entrepreneurial strategies of challenger parties (De Vries & Hobolt 2020, Hobolt & de Vries 2015). These are the parties that had the motivation to increase both the salience of EU issues and also adopt extreme positions with regards to these issues in order to bolster their electoral share (De Vries & Hobolt 2020, Hobolt & de Vries 2015, Ehin & Talving 2021). The success of this strategy is not only apparent in EP elections, but also in national elections. At the same time, dominant mainstream parties had little incentive to politicize the issue (De Vries & Hobolt 2020) instead trying to de-emphasize their salience, blurring their position, or when forced to acknowledge the issues choosing to do so in less engaging ways (De Vries & Hobolt 2020, Fazekas et al. 2021, Rovny 2012, Green-Pedersen 2012). This state of affairs began to change from the 2009 EP elections, and by 2014 we can note little difference in the emphasis on EU issues between challenger and dominant parties (Adam et al. 2017, Eugster et al. 2021), with some studies even showing that EU

issue salience is driven by dominant mainstream parties (Castanho Silva & Proksch 2021, Fazekas et al. 2021, Braun & Grande 2021). Initial research suggest that the same pattern still holds in the 2019 EP election campaign (Maier et al. 2021*b*), or has been reinforced even further (Stier et al. 2022).

This seems to imply that by now the politicization of EU issues has reached maturity (Braun & Grande 2021). In the aftermath of Brexit, dominant mainstream parties are no longer avoiding EU issues, while among Eurosceptic challenger parties, complete opposition toward the EU has been largely replaced with demands for reform (Treib 2021). This points to the fact that conflict around EU issues is no longer focused on the full-on rejection of the EU (i.e. the polity scope of the EU) but increasingly on debates around the policy scope of the EU. In this regard, previous research mostly treats EU issues as a monolith, offering little indication if the recent switch to debates around policy is a result of challenger parties toning down their anti-EU rhetoric, or dominant mainstream parties embracing EU issues as an integral part of their programmatic appeals. This is the main question we will address in our paper.

3 EU issues: polity or policy?

Recent literature establishes a clear distinction between polity or constitutive issues—debates around fundamental features of the EU polity—and policy debates in fields where EU institutions are involved in policy-making (Braun et al. 2016). To a certain extent, this distinction mirrors a previously established division between hard and soft Euroscepticism. The former fundamentally opposes the process of European integration and therefore calls for withdrawal from the EU, while the latter opposes the policies that the EU pursues (Szczerbiak & Taggart 2008). Essential to our argument is that the distinction between policy and polity issues contributes to explaining why certain parties choose to emphasize Europe. The past documented salience of EU issues among challenger parties is mostly a result of outward opposition to the EU of Eurosceptic challenger parties, i.e. the rejection of EU polity (Braun et al. 2016). Initial evidence from the 2019 EP elections points to the fact that these challenger parties moved away from arguing for leaving the EU toward a soft Euroscepticism arguing for coherent policy reforms (Brack 2020, Treib 2021). Nevertheless, the complete opposition towards

the EU as a polity, at least among some of these parties, did not fully subside (Brack 2020).

Until recently, dominant parties gained relatively little from engaging in debates regarding EU polity matters. For dominant parties, shifting attention to issues they had previously ignored carried the potential for increased costs, as it could endanger their position in the political market and threaten their internal cohesion (De Vries & Hobolt 2020, Braun et al. 2016). This could also ultimately damage their electoral fortunes and chance to enter future coalitions (De Vries & Hobolt 2020, p. 118). Even if these parties shifted their stance on the EU polity in response to Eurosceptic challengers (Meijers 2017), such changes may be risky and costly for their reputation (Whitefield 2015). In contrast to their stance on EU polity issues, it was expected that these parties could profit from debates about the type of policies the EU should adopt (Börzel & Risse 2009, Braun et al. 2016). At the same time we already note that starting from the 2014 EP elections mainstream dominant parties no longer avoided talking about the EU (Adam et al. 2017, Eugster et al. 2021, Castanho Silva & Proksch 2021, Fazekas et al. 2021, Braun & Grande 2021). Furthermore, at the time of the 2019 EP elections, the largely negative perception about the impact of Brexit substantially increased supports towards the merits of the European project (Hobolt et al. 2022). This could further motivate dominant parties to emphasize the merits of the European project as a whole, i.e. (re)focus on polity, in order to capitalize on the increased support for the EU.¹ In other words, the previously associated cost of emphasizing polity issues could be compensated by the electoral gains from mobilizing support.

To sum up, as the viability of the EU project no longer seems to be a contested topic, focusing on polity-related issues should have decreased strategic appeals for the candidates of challenger parties. Hence, we would expect them to shift their entrepreneurial strategies towards EU policy-related issues. At the same time, we have good reason to believe that (most) dominant parties have found new grounds to make appeals based on the merits of the EU polity. All in all, while it is clear that the debate is no longer exclusively about polity, we expect that at the time of the 2019 EP elections:

H1 Candidates of challenger parties are more likely to embed policy appeals in their EU

¹Undoubtedly, not all dominant parties are Europhile, but parties such as the Five Star Movement, Lega Nord, or the Austrian Freedom Party toned down their opposition towards EU polity once they assumed governing powers (Treib 2021), and seemed to shift their attention towards policy considerations (Brack 2020).

communication in comparison to dominant parties.

Furthermore as with acknowledging that this is no longer a debate solely focused on polity, it is clear that different types of challenger parties have different incentives to bring up policy or policy-related considerations when they talk about the EU. Green parties are seen as a typical example of a challenger parties that increased their electoral share by adopting entrepreneurial strategies during EP election campaigns (De Vries & Hobolt 2020, Rudig 2019). This was possible as those concerned with environmental issues see the EU as the natural forum in which to address this trans-boundary issues (Carter 2010). Thus, as a first party heterogeneity hypothesis, we expect that:

H2.a Candidates of Green challenger parties will be more likely to **embed policy debates** when they talk about the EU in comparison to dominant parties.

Concerning Eurosceptic challenger parties, we need to distinguish between the strategies of far-right Eurosceptic and other Eurosceptic parties (Braun et al. 2019) . On the one hand, far-right Eurosceptic parties recently voiced opposition to EU immigration, EU economic policy (especially those focused on solitary), and the European Union’s liberal appeal (Brack 2020, Whitefield & Rohrschneider 2019), but fundamentally they were the ones highlighting their unconditional opposition to the EU (Conti & Memoli 2012, p.105), and still continue to do so (Treib 2021, Brack 2020). On the other hand, while left-wing Euroscepticism is in decline and centrist Euroscepticism continues to be a marginal phenomenon (Treib 2021), These parties were at no point fully hostile toward the European idea. Rather, their opposition to the EU polity is grounded in the desire for direct democracy and empowering the EP (Brack 2020). In this context, they are more likely to link their opposition to the EU with specific policies, typically restricted to economic matters (Brack 2020, Beaudonnet & Gomez 2017, Van Elsas et al. 2016). To summarize, even though challenger far-right Eurosceptic parties are increasingly shifting to soft Euroscepticism, we still expect them to focus on their fundamental opposition to EU as a polity and thus hypothesize that:

H2.b Candidates of far-right Eurosceptic challenger parties will be more likely to focus on **polity** debates when they talk about the EU in comparison to dominant parties.

At the same time, left Eurosceptic challengers are centered around economic issues, and less

focused on polity matters (Braun et al. 2019). We have no reason to believe that this changed at the time of the 2019 EP election, and thus expect that:

H2.c Candidates of left Eurosceptic challenger parties will be more likely to **embed policy debates** when they talk about the EU in comparison to dominant parties².

4 EU issues as policy: what type of embedding?

As already apparent in our previous set of hypotheses, depending on the (general) party profiles, we might expect EU policy embedding to be rather specific. Systematically assessing how broad or restricted (i.e., focused) EU policy embedding might be, and how this varies between parties is important for two main reasons. First, where EU policy communication is placed on the restricted-broad spectrum matters for the extent of EU policy embedding. Beyond the frequency of policy mentions, how broadly those policy areas are represented within the EU related communication can contribute to the relevance and (perceived) importance of the EU.

Second, how candidates and parties approach EU issue embedding strategically opens up or closes some avenues regarding positioning and intra-party homogeneity. On the one hand, single issue focused parties can further consolidate the importance of their chosen issue by linking it to the EU level and ultimately bolstering the (owned) issue's relevance. On the other hand, a broader embedding can allow parties to transfer their broad appeal from the national arena, or allow for positional or valence heterogeneity within party. For example, some candidates might believe the EU is beneficial in one specific area, but not necessarily in another policy domain. Broader embedding thus allows for accommodating heterogeneity, which is documented to be a more severe issue, including dissent, for larger mainstream parties.

Overall, challenger parties can be generally tied to specific policies, it is only the far-right Eurosceptic challengers who seem to adopt a broader policy scope in relation to the role of the EU. At the same time, dominant parties are expected to focus on broader political appeal. When parties make it into government they expand their issue appeals as they need to cover

²Last but not least, mirroring previous research we would not expect substantial differences between the residual challenger category and dominant parties, as in terms of policy scope this residual category represents the same mainstream families, i.e. social-democratic, conservative, Christian democratic parties (Adams et al. 2006), as the core of the Dominant party category.

undesired topics, and when under pressure from a diverse opposition they engage with a broader issue range, which will all be reflected in their campaign communication (Greene 2016, Van Heck 2018). This does not only apply to mainstream parties, but it also seems to be the case for far-right Eurosceptic parties who make it to government (Treib 2021). Thus, we expect that:

H3.a Candidates of dominant parties have broader policy appeals in their EU related communication in comparison to candidates of challenger parties.

H3.b Among candidates of challenger parties we expect that far-right Eurosceptic candidates to have the broadest policy appeal in their EU communication.

5 Data and measurement

5.1 Data

The main data source for the analysis comes from the 'Political Campaigning on Twitter During the 2019 European Parliament Election Campaign' dataset (Stier et al. 2020). This contains the twitter communication for European Parliament candidates from all 28 member states, for parties which received more than 2 per cent of the national vote share in the 2019 EP election. Candidate twitter accounts were collected as part of the Euromanifesto Study in the two months leading up to the election.

The candidate tweets, as well as any public retweets, replies, or direct mentions of candidates were purchased directly from Twitter after the election, which helps ensure the completeness of the data as opposed to using the Twitter API. The data collection period captured tweets between 23 April to 30 May 2019 (Stier et al. 2020). The full dataset contains over 16,000,000 tweets, across 28 countries and 31 languages. Of this total, the final dataset contains 495,266 tweets by European Parliamentary candidates, across 30 languages.

5.2 Content coding and categories

This paper is part of a larger project relying on human- and machine-coding of political content of these tweets. Here, we describe the content features relevant for this paper, including both human- and machine-coding steps. Overall, a team of 17 research assistants

were hired to begin classifying a sample of the tweets across a range of features, covering 11 different languages. In the sampling process, tweets were first split between those made by candidates standing in the 2019 European Parliament elections, and tweets from the public. Candidate tweets were then grouped by the country each candidate was standing in, and by language, with the majority language in each country being coded. Lacking geo-location data for all remaining tweets, public tweets were simply grouped by language. Each coder was tasked with annotating 9,000 tweets in their assigned language. Due to our analytical focus on the campaigning strategies of political elites, the sample given to each coder was weighted so that 75% of tweets were by political candidates, with the remaining 25% from the public. We rely on politician tweets only for this paper’s analysis.

The student research assistants were either native speakers, or fluent in their assigned language and had lived in that country for a significant period of time. Due to a lack of applications in some languages, tweets in Portuguese, Swedish, and Dutch were coded by a single coder each. The other eight languages were coded in pairs, with the first 2,000 tweets being annotated by both coders, allowing for inter-coder reliability checks, and the remaining 7,000 tweets assigned to one coder each.

Table 1 outlines the language distribution for the set of tweets used in the paper, as well as the sampling breakdown. For each country/language, a random sample of tweets were drawn from both the candidate and public tweets according to the 3:1 candidate to public ratio outlined above. In the case of Germany, Hungary, and Greece the number of tweets by political candidates was small enough that they could all be manually labelled. In these instances, the full set of candidate tweets were given to coders, with the remaining tweets randomly sampled from the public to make up the 9,000 total for each coder.

Current models are based on UK (English, 12,082), Ireland (English, 5,987), French (13,492), German (11,55), Greek (4,212), Italian (5,898), Dutch (1,676), Hungarian (324), Polish (9,050) and Spanish (10,886) human coded tweets as a starting point. As the dataset contains retweets, (which under the coding scheme would appear identical to both the original tweet and other retweets) to avoid instances of coders labelling the same tweet multiple times, any duplicate tweets were removed from the sample, and were then merged back in after the manual coding process was complete.

Coders were provided with a codebook, outlining the classification process for each feature

Table 1: Tweet language distribution and sampling

Country	Language	All tweets		Sampled tweets	
		Candidates	Public	Candidates	Public
UK	English	131,332	5,113,760	13,500	4,500
France	French	62,403	2,911,611	13,500	4,500
Spain	Spanish	52,824	2,328,691	13,500	4,500
Italy	Italian	17,826	1,834,711	13,500	4,500
Poland	Polish	43,770	1,048,559	13,500	4,500
Ireland	English	14,697	0	6,000	0
Netherlands	Dutch	13,793	433,309	7,500	2,750
Germany*	German	13,156	371,372	13,156	4,500
Greece*	Greek	4,349	72,301	4,349	32,000
Hungary*	Hungarian	326	2,118	326	2,118

*All candidate tweets were manually coded for these countries

to be labelled in the tweet text. A batch of 150 randomly selected tweets in English were labelled by the researchers according to the codebook, to be used as a gold standard measure for a set of initial training tweets. Coders were given a one hour training session, where the entire coding scheme was discussed in detail, and were shown how to use the survey software, as well as going through examples of coding tweets in practice.

Each coder was then given the set of 150 training tweets to label, and provided detailed feedback on their classifications of the tweets. After this, coders were given tweets in their assigned languages in batches of 500, and then 1,000, with detailed feedback provided for the first 2,000 tweets labelled by each coder. Coders were asked to label each tweet across a range of features. From those, we will discuss the ones relevant for the current paper.³

Tweets were first labeled as being either personal or political in nature, coded as mutually exclusive content categories. For all political tweets, coders distinguished between campaigning tweets (both EU or other campaigns as in some countries there were other elections in parallel), or political tweets that mention a political issue. These were not mutually exclusive labels. If a tweet was labelled as mentioning a political issue, coders were then asked to specify which type of issue from a list of 10 potential options, with a maximum of 3 picks/tweet: Economy, Environment, Opposition or Support for democratic values, Immigration, Anti-elitism, Brexit, Crime and justice, EU, or Other (transport, health, education etc.). For all

³The Supplementary material contains example tweets in the same format presented to coders, as well as a detailed breakdown of all the features used in the current paper, including specific descriptions provided to coders on how to classify each tweet.

countries, we collapse the EU and Brexit issue categories, as both are pertinent for the EU issue and we do not focus on specific UK *vs.* other country comparison.

Given our theoretical framework, we have combined some of this information to better reflect the core distinctions we are interested in and potentially aid the machine learning classification at later stages. Thus, we work with a four category core issue content operationalization: [1] personal tweets, [2] political tweets with no EU mention (can be campaign), (3) solely EU issue tweet (can be campaign), and (4) EU issue and other political issue (can be campaign).

5.3 Text classification

For the languages (and countries) where we do not reach complete human coding of candidate tweets we apply classification methods to extrapolate the quantities of interest to unlabelled tweets. For each language, we represent the hand coded tweet text as a document-feature matrix (dfm). For each tweet, we define the text as being all text included in a tweet if an original tweet (1) or the reply/comment and the original tweet (2) if it is a reply or retweet with comment. We carry out several pre-processing steps. Every specific user mention or hashtag is replaced by a generic user or hashtag token to avoid any over-fitting in the future. Next, we remove language specific stopwords, apply language specific stemming, remove numbers, punctuation and special symbols, and then create all uni- and bi-grams. In addition, we remove very rare features, those that appear in fewer than 0.25 percent of the documents in each language, usually indicating appearance in at least three tweets.

Thus, the frequency of the uni- and bi-grams across relevant documents will be our main predictor matrix and we train several classifiers, depending on the quantity of interest. More precisely, we train multinomial classifiers for the main 4-category content label and for the EU sentiment that is labeled anti-, neutral, or pro-EU. This latter classifier is only based on human coded tweets that are also labeled as EU issues. For the separate issues, we train binary classification models for each issue separately, where 1 marks the presence of that issue in the tweet, 0 otherwise.⁴ This process results in a sparse matrix with a high number of features and thus we rely on machine learning algorithms to overcome the dimensional

⁴The “otherwise” category varies between issues, depending on model performance. It can be all other tweets, or political tweets only, or issue tweets only, picked based on model performance.

issue. More precisely, for each issue we train Extreme Gradient Boosting (xgBoost) models.⁵

Table 2: (EU) Content classifier performance

	Accuracy	Precision	Recall	F-score
United Kingdom	0.750	0.701	0.602	0.636
Spain	0.899	0.650	0.446	0.506
France	0.846	0.645	0.523	0.570
Ireland	0.824	0.596	0.484	0.520
Italy	0.914	0.573	0.363	0.412
The Netherlands	0.740	0.574	0.454	0.494
Poland	0.829	0.612	0.522	0.557

Within a randomly selected training set (stratified based on each issue’s prevalence) we carry out grid-like parameter selection using five-fold cross-validation, and then evaluate the best performing parameter combinations in a final model using out-of-sample metrics⁶ based on the (randomly selected) test set. We report conventional performance metrics for content and sentiment models based on the test set in Table 2. We also report here results from binary classifiers where we split the EU sentiment categories to further investigate what valence aspects are more difficult to classify. As seen the the summary table, the overall performance of the main content classifiers is acceptable, but the languages with (as of now) smaller training sets perform worse. Regarding EU sentiment, there is substantial variation in the classifier performances across languages, but again, unsurprisingly, when we have limited human coded examples (table contains test set counts), our classifiers struggle to accurately or precisely predict EU sentiment (see for example the lack of anti-EU tweets in The Netherlands).

Turning to the issue specific classifiers, we see more pronounced cross-language (or country) variation in performances, linked to the availability of enough issue content (see Table 3). On the one hand, this also means that classifier performance and ultimately predictive accuracy is directly related to issue salience, which can generate potential bias for the unlabelled data. On the other hand, the overall predictions will tend towards 0 for the lacking issues, which is consistent with the actual prevalence of those issues.⁷

In Table 4 we report highly predictive words of specific issues. For those language \times issue

⁵These models have been compared to various flavors of regularized regression, but have constantly outperformed these. Furthermore, previous work by Fazekas et al. (2021) also relied on xgBoost classifiers for tweet level political content categorization.

⁶These parameters will vary across languages and issues and our focus is on tree depth and learning rate

Table 3: Issue classifier performances

	Issue	Test freq	Accuracy	Precision	Recall	F-score
Economy	en	163	0.894	0.626	0.718	0.669
	fr	321	0.869	0.779	0.679	0.725
	pl	178	0.781	0.468	0.607	0.528
	es	120	0.881	0.615	0.692	0.651
	it	104	0.762	0.652	0.702	0.676
	nl	42	0.579	0.432	0.452	0.442
	ir	108	0.781	0.492	0.546	0.518
Environment	en	197	0.924	0.764	0.838	0.799
	fr	404	0.885	0.832	0.807	0.819
	pl	101	0.882	0.487	0.564	0.523
	es	38	0.905	0.280	0.553	0.372
	it	80	0.883	0.214	0.512	0.301
	nl	21	0.746	0.357	0.476	0.408
	ir	150	0.932	0.646	0.707	0.675
Immigration	en	31	0.959	0.391	0.806	0.526
	fr	144	0.977	0.673	0.785	0.724
	pl	22	0.955	0.075	0.318	0.122
	es	49	0.960	0.255	0.714	0.376
	it	21	0.887	0.324	0.524	0.400
	nl	10	0.959	0.182	0.200	0.190
	ir	22	0.930	0.333	0.591	0.426
EU	en	547	0.884	0.890	0.876	0.883
	fr	179	0.900	0.632	0.721	0.674
	pl	146	0.890	0.650	0.726	0.686
	es	43	0.950	0.571	0.558	0.565
	it	37	0.854	0.444	0.649	0.527
	nl	17	0.868	0.545	0.706	0.615
	ir	51	0.922	0.594	0.745	0.661
Anti-elitism	en	27	0.992	0.500	0.185	0.270
	fr	108	0.960	0.328	0.389	0.356
	pl	59	0.905	0.346	0.475	0.400
	es	122	0.765	0.341	0.467	0.394
	it	19	0.940	0.054	0.263	0.090
	nl	6	0.993	1.000	0.500	0.667
	ir	41	0.811	0.163	0.317	0.215
Crime and justice	en	55	0.956	0.557	0.618	0.586
	fr	136	0.915	0.623	0.559	0.589
	pl	272	0.840	0.733	0.757	0.745
	es	247	0.801	0.707	0.684	0.695
	it	96	0.728	0.591	0.542	0.565
	nl	25	0.763	0.467	0.560	0.509
	ir	87	0.835	0.556	0.230	0.325
Democracy	en	105	0.899	0.472	0.476	0.474
	fr	192	0.839	0.480	0.630	0.545
	pl	138	0.807	0.415	0.565	0.479
	es	133	0.769	0.392	0.534	0.452
	it	163	0.890	0.466	0.669	0.549
	nl	12	0.904	0.545	0.500	0.522
	ir	14	0.959	0.113	0.500	0.184
Other	en	250	0.833	0.624	0.676	0.649
	fr	568	0.709	0.682	0.671	0.676
	pl	282	0.694	0.519	0.585	0.550
	es	298	0.694	0.623	0.594	0.608
	it	64	0.724	0.380	0.422	0.400
	nl	37	0.588	0.381	0.432	0.405
	ir	272	0.699	0.715	0.739	0.727

Table 4: Predictive terms from issue classifiers

	Issue	features
Crime and justice	en	crime; polic; crimin; rape; murder
	es	supremo; delito; polica; civil; prisin
	fr	justic; polic; condemn; attaqu; polici
	ir	corrupt; court; israel; eurovis; embassi
	it	mafia; violenza; polizia; vittim; mort
	nl	gren; krijgen; ter; antisemitism; dieren
	pl	pedofilii; pedofili; sprawi; policja; pedofilw
Democracy	en	democraci; anti-democrat; freedom; gay
	es	democracia; fascismo; fascista; democrtico; ideologa
	fr	dmocrati; libert; gilet Jaun; manifest; dmocratiqu
	ir	democraci
	it	libert; democrazia; diritti; democratica; fascismo
	nl	vrijheid; democrati; democratisch; islam; julli
	pl	konstytucji; lgbt; kobiet; wolno; demokracji
Economy	en	economi; tax; trade; auster; invest
	es	empleo; impuesto; precariedad; mercado; salario
	fr	fiscal; conomiqu; financ; milliard; privatis
	ir	farmer; tax; money; cost; job
	it	tass; lavoro; milioni; euro; lavoratori
	nl	euro; betalen; per; pensioen; geld
	pl	mld; pienidz; euro; dziecko; gospodark
Anti-elitism	es	vox; progr; albert; lite; izquierdista
	ir	billionair
	nl	nederland_weer
	pl	kaczyskiego; ukad; telewizja; si_wietni; udaj
EU	en	brexit; eu; remain; hashtagtoken; vote
	es	unin; da_europa; brusela; brexit; unin_europea
	fr	leurop; l'europ; lue; l'union; lunion
	ir	eu; brexit; europ; european; across_europ
	it	europea; europe; europa; leuropa; europeo
	nl	eu; europa; attoken_hashtagtoken; stem; democrati
	pl	ue; unii; europejskiej; europi; europejska
Environment	en	climat; green; rebellion; environment; action
	es	climtico; transicin; planeta; mundo_rural; sosten
	fr	cologiqu; climat; climatiqu; lcologi; l'cologi
	ir	climat; green; environ; plastic; environment
	it	sostenibil; ambient; animali
	nl	klimaataakkoord; klimaat; co2; zo'n
	pl	zwierzt; klimatu; krw; przyrodi; smog
Immigration	en	immigr; refuge; migrant
	es	inmigracin; migrant; inmigrant
	fr	migrant; l'immigr; migratoir; immigr; rfugi
	ir	immigr; migrat; border; migrant; asylum
	it	clandestini; sbarchi; nave; confini; migranti
Other	en	nhs; local; health; student; educ
	es	venezuela; eta; educacin; mujer; cuba
	fr	sant; contr; femm; social; train
	ir	health; attoken; hous; hospit; hashtagtoken
	it	hashtagtoken_quote; cannabi; sessisti; problema; sospesa
	nl	onderwij; helema; samen; christenen; heel
pl	kocioa; nauczyciel; koci; kociel; nauczyci	

combinations where no words are listed the current classifiers are better at finding highly predictive terms for the 0 category, rather than the issue. These are also the cases where classifier performance is very weak. For the issues where the performance is acceptable, the terms reveal good face validity. In addition, when looking at the “Other” category, these terms help us better understand the substantive policy areas under the same category (education, health, etc), but also differences between salient issues for the countries covered.

Finally, using the same text preparation steps and the trained classifiers, we predict issue content for the unlabelled data. For binary classifiers, as when training the classifier and evaluating them on the test set, we select the probability thresholds based on best performance in the training data. This means that we do not necessarily label an issue being present if the predicted probability for the tweet is above 0.5, rather we account for variation in baseline frequency for performance. We use the same thresholds when applying the prediction to the unlabelled data.

5.4 Measures and method

We define here the quantities of interest for our analysis. We measure EU issue embedding as the proportion of embedded EU issue tweets from the total EU issue tweets. Our measure of embedding style is calculated using the distribution of all other issues co-mentioned with the EU issue. Thus, this is only based on the subset of embedded EU communication. More precisely, use the Normalized Shannon’s H Information Entropy following recommendations from Boydston et al. (2014) as measure (co-mentioned) issue attention diversity. Often used when comparing agendas and issue attention diversity, this is calculated as:

$$\text{Normalized Shannon's H} = \frac{- \sum_{i=1}^N (p(x_i)) * \ln p(x_i)}{\ln(N)}$$

where x_i is the i^{th} issue, $p(x_i)$ is the proportion of that issue, and N is the total number of issues. Two desirable properties of this measure are that it is bound to range between 0 and

resulting in the best performance.

⁷In future iterations this can be cross-referenced with data from other campaign communication covering the same period of the 2019 EP elections. Furthermore, at this stage, given the lack of more detailed coding of the “Other” issue category, some of the weaker performances are due to the fact that these can cover multiple substantive issue areas.

1 and, given the normalization, it is independent of the number of available issues, which might vary across countries in our case.

Our unit of analysis is the politician, thus for the main analysis we carry out an aggregation step. While we can fit tweet level models for salience and also for embedding⁸, issue attention diversity is more problematic to conceptualize and measure at the tweet level, given our coding (maximum three issues) and the text length. In addition, politicians run for different parties, thus we will fit hierarchical models where politicians are nested in parties. As salience and embedding are defined as proportions, we fit binomial regressions, whereas we fit linear models for co-mentioned issue diversity. We include country fixed effects in all models.

For the party characteristics, first we rely on a broad coding of dominant party (0) *vs.* any other challenger party (1), where the mainstream dominant status is given if a party has been in government at any previous time point (De Vries & Hobolt 2020), based on the ParlGov data⁹ (Döring & Manow 2022). Next, in order to assure a close linkage to our theoretical argument, we split challenger parties into Green-challenger parties (Green parties that have no government experience), Eurosceptic parties (with no government experience), far-right Eurosceptic parties (with no government experience)¹⁰, and Other challenger parties (with no prior government experience). We further control for EU dissent (Jolly et al. 2022) and if candidates are currently MEPs, as these were previously considered a relevant predictor for the salience parties attach to EU issues (Braun et al. 2016, De Vries & Hobolt 2020, Fazekas et al. 2021).

For each outcome, we rely on two specifications. First, we use as our main “challenger party” predictor. Second, we split this dichotomous variable, working with the categorical grouping of different party profiles (fitted as dichotomous predictors, with dominant mainstream being the baseline). We include country fixed effects and a limited number of control variables in our models; we then present a series of robustness checks introduced later.

⁸Results from these models are reported in the Supplementary materials.

⁹The following correction were made: IMRO-Bulgarian National Movement and Ataka were coded as dominant parties as they were part of the National Front for the Salvation of Bulgaria which was in the 2017 government, Croatian Growth was coded as government party as it was part of the HDZ lead coalition between 2016 and 2018.

¹⁰We rely of PopuList data to identify Eurosceptic and far-right parties(Rooduijn et al. 2019).

6 Results

Before turning to our main results, we evaluate differences in the expected EU issue salience along several party and EU related measures. We measure the salience of the EU issue as the proportion of tweets mentioning the EU issue out of the total tweets by a given candidate, either alone or with other issues. We summarize simple country comparisons in the first part of Table 5. Here candidate tweets for each country are broken down into 4 categories represented by each column. The 'personal' grouping refers to tweets that did not contain any relevant political content, while 'other political' includes tweets that were either solely about campaign activities, or mentioned political issues (that were not the EU). The final two columns refer to tweets that mentioned the EU but no other issues (EU alone), and tweets that mentioned the EU alongside other political issues (EU embedded). First and foremost, we see substantial heterogeneity between countries in terms of EU issue salience. We also see rather low issue salience, however, it is worth noting that these proportions are based on all candidate tweets, not just those that refer to political issues.

Table 5: Country summaries

	Personal	Other political	EU alone	EU embedded
France	0.05	0.88	0.02	0.05
Germany	0.12	0.71	0.10	0.06
Greece	0.13	0.79	0.04	0.05
Hungary	0.16	0.69	0.07	0.07
Ireland	0.11	0.83	0.03	0.02
Italy	0.01	0.96	0.01	0.02
Netherlands	0.07	0.84	0.05	0.03
Poland	0.08	0.88	0.03	0.01
Spain	0.02	0.95	0.01	0.01
UK.	0.11	0.67	0.18	0.04

In Table 6 we present the results from our multiple regression analysis of EU salience. We find that (dominant) mainstream party candidates were more likely to talk about the EU in the 2019 campaign. More specifically, Green party politicians were particularly less likely to talk about the EU, but this was also the case for some Eurosceptic party candidates. As in all previous studies, we document a strong incumbent MEP effect, but also consistent evidence regarding the avoidance of the EU topic if there is more within-party dissent regarding the EU.

Table 6: EU salience as proportion of all campaign Twitter communication

	(1) All	(1) HC	(2) All	(2) HC
Intercept	-2.17*** (0.24)	-1.68*** (0.27)	-2.12*** (0.23)	-1.63*** (0.25)
Challenger party	-0.23* (0.11)	-0.25 (0.13)		
Eurosceptic party			-0.31* (0.12)	-0.29* (0.14)
Green-challenger			-0.58* (0.26)	-1.00** (0.32)
Other challengers			-0.25 (0.20)	-0.35 (0.23)
Incumbent MEP	0.29*** (0.02)	0.21*** (0.03)	0.29*** (0.02)	0.20*** (0.03)
EU dissent	-0.10** (0.04)	-0.10* (0.04)	-0.10** (0.03)	-0.11** (0.04)
Germany	0.83*** (0.22)	0.35 (0.25)	0.81*** (0.21)	0.33 (0.23)
Greece	0.10 (0.27)	-0.40 (0.31)	0.07 (0.26)	-0.41 (0.29)
Hungary	0.52 (0.32)	0.07 (0.36)	0.55 (0.32)	0.20 (0.35)
Ireland	-0.33 (0.25)	-0.56 (0.29)	-0.36 (0.24)	-0.59* (0.27)
Italy	-1.23*** (0.24)	-0.95*** (0.28)	-1.25*** (0.23)	-0.97*** (0.26)
The Netherlands	0.04 (0.22)	0.07 (0.26)	0.07 (0.21)	0.11 (0.24)
Poland	-0.64* (0.26)	-0.35 (0.30)	-0.64** (0.25)	-0.36 (0.28)
Spain	-1.14*** (0.22)	-0.92*** (0.26)	-1.13*** (0.26)	-0.84** (0.29)
UK	1.07*** (0.22)	0.90*** (0.26)	1.10*** (0.22)	1.01*** (0.25)
AIC	17948.16	8981.46	17946.69	8976.75
BIC	18028.13	9059.26	18038.08	9065.67
LL	-8960.08	-4476.73	-8957.34	-4472.37
Politicians	2235	1915	2235	1915
Parties	61	61	61	61
Var: party	0.14	0.19	0.13	0.16

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Dominant mainstream as baseline.

As introduced in Table 5, cross-country differences also abound when looking at EU issue embedding. It is noteworthy that we find around 70% of EU issue tweets are communicated while also mentioning another political issue in France or Italy, while this embedding is in the 25% range for Germany and the United Kingdom (where this EU issue is essentially Brexit talk). These indicate very different approaches to *how and when* EU issues are discussed. In this example, the countries with high embedding are also the countries with generally low EU issue salience, whereas high salience cases such as Germany or the UK are low embedding countries.

When it comes to embedding heterogeneity, as shown in Table 7, we find that, on average, challenger parties are more likely to talk about EU as policy, embedding the EU issue with other political issues. However, this difference is not statistically significant, and masks within-challenger party heterogeneity, as seen in our send set of models. We find that as expected (see H2.a) Green-challenger and (see H2.c) non-Far right (left- or moderate) Eurosceptic party candidates are more likely to talk about the EU as policy, with an increased likelihood of embedding. In addition, we find large cross-country differences, further underlining that while the EP elections are held at the same time, national arenas of contestation are still different.

The final dimension of interest relates to the scope of embedding which we label as embedding style. To reiterate, a broader embedding indicates that, for each politician, EU issues co-occur with a broader range of other issues. As before, we define embedding or co-occurrence at the tweet level, but will aggregate first to the politician level. A broader embedding represents a higher normalized Shannon's H value (with maximum being 1 where the distribution of other issues is uniform). As with the previous dimensions, we report the multiple regression results in Table 8.

Overall, challenger parties use a more focused (less broad) style of embedding, however and contrary to our expectations, these differences are only significant for far-right Eurosceptic party candidates. Together with the results in Table 7 (i.e. lack of a statistically significant difference for far-right Eurosceptic parties) these seem to suggest that far-right Eurosceptic parties are by now are not only focusing their opposition against the EU around polity issues, but they also incorporate a narrow criticism targeted on specific policies. In contrast, non-far-right Eurosceptic party candidates rely on broader embedding, even com-

Table 7: EU embedding as EU tweets including other issues from total EU tweets

	(1) All	(1) HC	(2) All	(2) HC
Intercept	0.56*	0.55	0.67*	0.59*
	(0.28)	(0.33)	(0.26)	(0.30)
Challenger party	0.09	0.10		
	(0.13)	(0.16)		
Eurosceptic party			0.42*	0.35
			(0.20)	(0.24)
Eurosceptic FR party			-0.15	-0.12
			(0.18)	(0.22)
Green-challenger			0.85**	1.45***
			(0.31)	(0.43)
Other challengers			-0.09	-0.09
			(0.23)	(0.27)
Incumbent MEP	-0.00	-0.07	-0.00	-0.06
	(0.04)	(0.06)	(0.04)	(0.06)
EU dissent	0.03	0.04	0.01	0.03
	(0.04)	(0.05)	(0.04)	(0.05)
Germany	-1.35***	-1.39***	-1.39***	-1.40***
	(0.26)	(0.30)	(0.23)	(0.26)
Greece	-0.40	-0.41	-0.42	-0.41
	(0.33)	(0.38)	(0.30)	(0.33)
Hungary	-0.47	-0.46	-0.58	-0.58
	(0.45)	(0.51)	(0.45)	(0.49)
Ireland	-0.88**	-0.65	-1.00***	-0.73*
	(0.30)	(0.36)	(0.28)	(0.33)
Italy	0.47	0.14	0.47	0.16
	(0.30)	(0.35)	(0.27)	(0.31)
The Netherlands	-1.24***	-0.84**	-1.41***	-0.96**
	(0.26)	(0.32)	(0.24)	(0.29)
Poland	-1.53***	-1.33***	-1.45***	-1.24***
	(0.30)	(0.35)	(0.27)	(0.30)
Spain	-0.60*	-0.50	-0.53	-0.41
	(0.26)	(0.32)	(0.29)	(0.33)
UK	-2.31***	-1.64***	-2.37***	-1.77***
	(0.26)	(0.30)	(0.24)	(0.28)
AIC	6725.94	3938.64	6719.71	3930.86
BIC	6803.20	4012.06	6813.53	4020.01
LL	-3348.97	-1955.32	-3342.85	-1948.43
Politicians	1842	1400	1842	1400
Parties	61	61	61	61
Var: party	0.18	0.24	0.14	0.17

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Dominant mainstream as baseline.

Table 8: Broadness of EU embedding as Normalized Shannon's H (politician level)

	(1) All	(1) HC	(2) All	(2) HC
Intercept	-0.18 (0.09)	-0.21** (0.07)	-0.12 (0.09)	-0.15* (0.07)
Challenger party	-0.06 (0.04)	-0.01 (0.03)		
Eurosceptic party			0.04 (0.06)	0.10* (0.05)
Eurosceptic FR party			-0.15** (0.05)	-0.11* (0.04)
Green-challenger			-0.13 (0.08)	-0.06 (0.07)
Other challengers			-0.02 (0.07)	0.00 (0.05)
Attention (all)	1.00*** (0.08)	0.89*** (0.06)	1.01*** (0.08)	0.89*** (0.06)
Incumbent MEP	0.04* (0.02)	0.03 (0.02)	0.04* (0.02)	0.03 (0.02)
EU dissent	-0.01 (0.01)	-0.01 (0.01)	-0.03* (0.01)	-0.02* (0.01)
Germany	-0.08 (0.07)	0.00 (0.05)	-0.11 (0.07)	-0.01 (0.05)
Greece	-0.11 (0.09)	-0.01 (0.07)	-0.13 (0.08)	-0.02 (0.06)
Hungary	-0.20 (0.11)	-0.11 (0.10)	-0.24* (0.11)	-0.15 (0.10)
Ireland	0.02 (0.09)	0.13 (0.07)	-0.04 (0.09)	0.07 (0.07)
Italy	-0.30*** (0.08)	-0.15* (0.06)	-0.31*** (0.07)	-0.15*** (0.05)
The Netherlands	-0.25*** (0.07)	-0.03 (0.06)	-0.29*** (0.07)	-0.08 (0.05)
Poland	-0.43*** (0.08)	-0.15* (0.06)	-0.42*** (0.07)	-0.14* (0.06)
Spain	-0.18* (0.07)	-0.09 (0.06)	-0.22** (0.08)	-0.11 (0.06)
UK	-0.05 (0.07)	0.05 (0.05)	-0.06 (0.07)	0.04 (0.05)
AIC	217.15	30.59	224.85	36.97
BIC	303.75	111.68	327.70	133.26
LL	-92.57	0.71	-93.43	0.52
Politicians	1657	1174	1657	1174
Parties	61	61	61	61
Var: party	0.01	0.01	0.01	0.00
Var: residual	0.06	0.05	0.06	0.05

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Dominant mainstream as baseline.

pared to dominant mainstream parties. Importantly, those politicians who generally talk about more issues, i.e. have a more diversified issue focus on social media, are also likely to carry over the same political communication style to how they talk about EU issues.

A more qualitative inspection of these patterns is displayed in Table 9, followed by Figure 1, summarizing our core findings overall. Looking at these results we can note that, while the economy seems to be most commonly associated with debates around the policy role of the EU (see especially Italy and Netherlands), there is substantial variation between parties and countries when it comes to the most salient policy issue they associate with the EU. Within countries, there are some cases where debates around the EU seem to converge around the same issue (Italy and Netherlands-economy, Greece and Spain-democracy), but in other countries, we observe more heterogeneity around the debates over the policy role of the EU.

Going to the specific topics adopted by different types of challenger parties, green parties seem to indeed bring the domain in which there are clear issue owners (i.e. the environment), at the forefront of their communication about the EU. But this can be noted among both green challenger and green dominant parties (e.g. Die Grüne or Les Verts). At the same time, far-right Eurosceptic challenger parties associate their stance regarding the EU with an array of issues, which is in line with their attempt to politicize specific policy areas (Brack 2020, Whitefield & Rohrschneider 2019) and is likely dependent on national debates in each country. Surprisingly they also seem to be less focused on immigration, an issue which they traditionally own and which is considered fundamental to their Euroscepticism (Brack 2020), and are instead more interested in the emerging debates around (il)liberal values (van der Brug et al. 2021).

For dominant parties, most tend to focus on economic issues when it comes to debates around EU policy. Associating the EU with an issue that can easily be incorporated into traditional left-right debates, should decrease the strategic cost associated with focusing exclusively on the EU (Braun et al. 2016, De Vries & Hobolt 2020). Still, we can also note that among these parties there is also considerable focus on debates around democracy (probably as a response to the pressure from far-right Eurosceptic challengers) and green issues (seemingly marking a shift from previous strategies of de-emphasizing the issues (Abou-Chadi 2016, Grant & Tilley 2019).

Table 9: Top issues co-mentioned with EU issues

	Party type	Top 3 EU co-issues (n politicians top)
France	Dominant mainstream	other (112) green (59) econ (20)
	Eurosceptic	other (28) green (16) econ (10)
	Eurosceptic FR	other (21) econ (14) immig (8)
Germany	Dominant mainstream	dem (36) econ (34) green (30)
	Eurosceptic	dem (4) econ (3) immig (2)
	Eurosceptic FR	immig (3) crime (2) econ (2)
	Other challengers	green (2) econ (1)
Greece	Dominant mainstream	dem (16) econ (12) other (9)
	Eurosceptic FR	dem (3) other (1)
Hungary	Dominant mainstream	other (7) dem (1)
	Green-challenger	green (1)
	Other challengers	other (2) crime (1)
Ireland	Dominant mainstream	other (9) econ (5) green (5)
	Eurosceptic	other (2) econ (1)
	Other challengers	other (9) econ (2) immig (2)
Italy	Dominant mainstream	econ (67) other (15) dem (14)
	Eurosceptic FR	other (4) econ (2) immig (2)
	Other challengers	econ (18) dem (9) other (5)
Netherlands	Dominant mainstream	econ (34) green (27) dem (20)
	Eurosceptic	econ (18) green (11) other (6)
	Eurosceptic FR	econ (9) dem (7) elite (6)
	Green-challenger	green (7) econ (5) dem (4)
Poland	Dominant mainstream	econ (60) dem (31) other (20)
	Eurosceptic FR	dem (19) econ (14) crime (9)
	Other challengers	dem (13) green (10) other (10)
Spain	Dominant mainstream	dem (23) econ (15) green (13)
	Eurosceptic FR	econ (7) immig (6) other (3)
	Other challengers	dem (51) econ (19) immig (15)
United Kingdom	Dominant mainstream	econ (84) green (31) dem (18)
	Eurosceptic FR	econ (14) dem (6) other (6)
	Green-challenger	green (49) dem (3) econ (2)
	Other challengers	other (46) dem (36) econ (32)

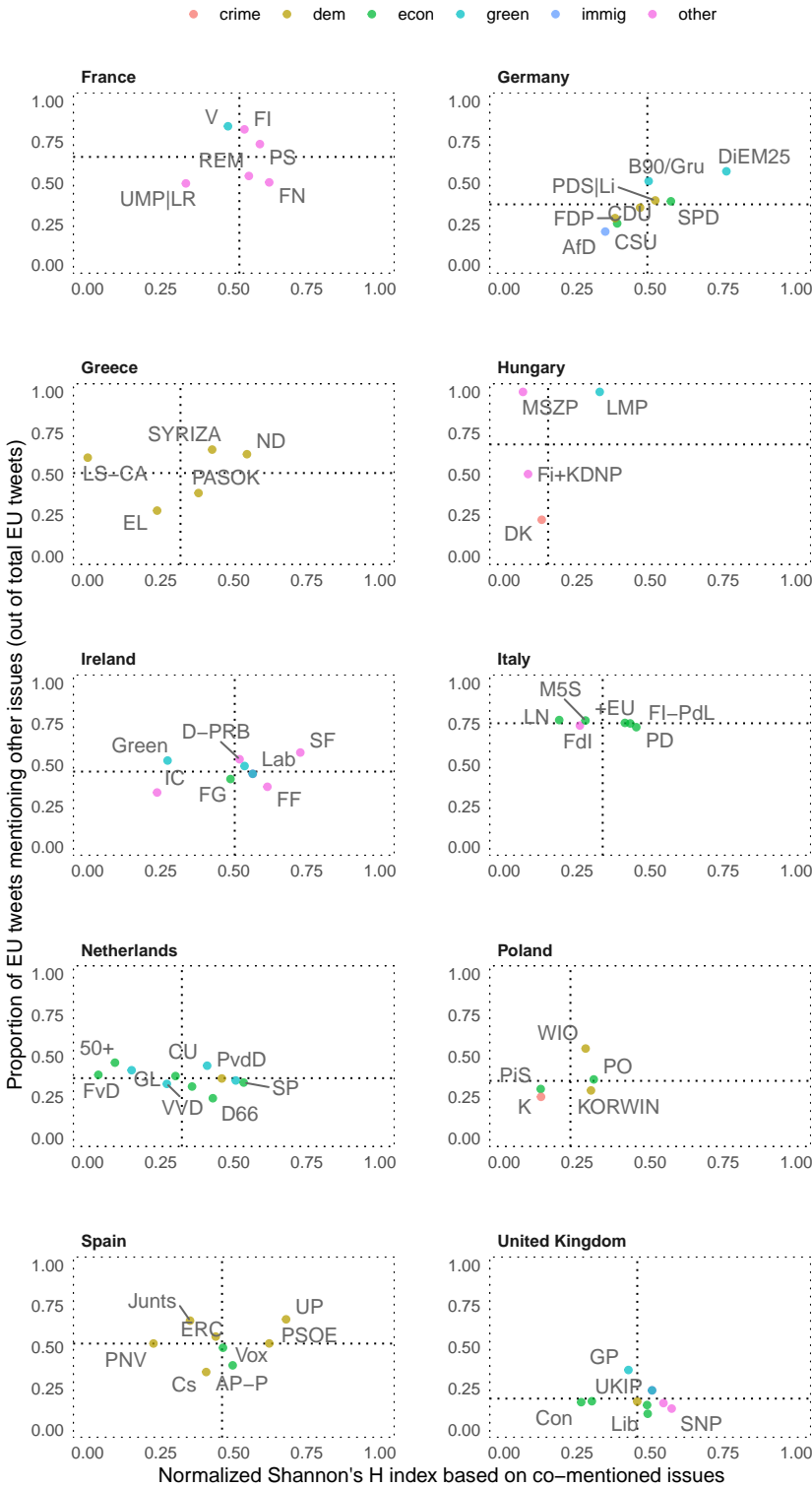
In our Appendix **A1** we present the results from a series of additional analyses. For both salience and embedding, we can fit models at the tweet level, modeling the probability of occurrence or co-occurrence. In these models, tweets are nested within politicians and politicians are nested in parties. In addition, we can also aggregate to a higher level, fitting essentially models with parties as units of analyses. These party level models are applicable for all measures of interest. Given the coding choices and the text length limitation, we cannot fit broadness or style related models at the tweet level. Overall, these models suggest that our core results are consistent across different choices. Finally, we also include an analysis of the environmental issue (following the same steps and operationalisation as we did for the EU issue), as a check on our measurement strategy. Here, the expectation is that environmental issue salience should be largest for Green parties and given that they are single issue-owners for this issue, it should also be less embedded, frequently appearing alone as an issue. Our green/environmental issue models confirm these expectation, lending further face validity to our measurement choices.

7 Next steps

As the project is still a work in progress, for our next steps we plan to:

- Complete the manual labelling of tweets for all 11 languages
- Extend the analysis to all EU member states
- Categorize the open ended 'other issue' values
- Explore the interplay between different types candidates (i.e. eligibility and pro-anti EU position) and the strategic consideration of dominant and Challenger parties
- Explore the influence of Pro/Anti-EU positioning on issue embedding in addition to the dominant/challenger typology

Figure 1: EU embedding and style, including top issue co-mentioned with the EU issue



Note: Top issue is based on the count of top issues for each politician within a party.

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Appendices

Online Supplementary materials for “The Evolving Nature of EU integration: Issue embedding in the EP election campaign communication”.

A1 Additional models

Table A1.1: EU salience results comparison (1)

	Original	Party level	Tweet level
Intercept	-2.17*** (0.24)	-2.15*** (0.02)	-2.23*** (0.15)
Challenger party	-0.23* (0.11)	-0.36*** (0.01)	-0.28** (0.10)
EU dissent	0.29*** (0.02)		0.26*** (0.06)
Incumbent MEP	-0.10** (0.04)	-0.09*** (0.00)	-0.11*** (0.03)
Germany	0.83*** (0.22)	0.83*** (0.03)	0.91*** (0.18)
Greece	0.10 (0.27)	0.10 (0.05)	0.03 (0.24)
Hungary	0.52 (0.32)	0.71*** (0.16)	0.43 (0.31)
Ireland	-0.33 (0.25)	-0.12* (0.05)	-0.13 (0.22)
Italy	-1.23*** (0.24)	-1.16*** (0.05)	-1.29*** (0.19)
The Netherlands	0.04 (0.22)	0.16*** (0.03)	0.06 (0.17)
Poland	-0.64* (0.26)	-0.65*** (0.02)	-0.77*** (0.18)
Spain	-1.14*** (0.22)	-0.92*** (0.03)	-1.14*** (0.18)
UK	1.07*** (0.22)	1.22*** (0.02)	1.15*** (0.17)
AIC	17948.16	3553.26	177398.68
BIC	18028.13	3578.59	177557.95
LL	-8960.08	-1764.63	-88684.34
N	2235	61	301979
Parties	61		61
Politicians			1689
Var: party	0.14		0.10
Var: politicians			0.35

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table A1.2: EU salience results comparison (2)

	Original	Party level	Tweet level
Intercept	-2.12*** (0.23)	-2.09*** (0.02)	-2.19*** (0.14)
Eurosceptic party	-0.31* (0.12)	-0.29*** (0.02)	-0.34** (0.11)
Green-challenger	-0.58* (0.26)	-0.86*** (0.02)	-0.73** (0.24)
Other challengers	-0.25 (0.20)	-0.26*** (0.02)	-0.24 (0.17)
Incumbent MEP	0.29*** (0.02)		0.26*** (0.06)
EU dissent	-0.10** (0.03)	-0.10*** (0.00)	-0.12*** (0.03)
Germany	0.81*** (0.21)	0.81*** (0.03)	0.90*** (0.16)
Greece	0.07 (0.26)	0.08 (0.05)	0.01 (0.22)
Hungary	0.55 (0.32)	0.69*** (0.16)	0.44 (0.31)
Ireland	-0.36 (0.24)	-0.16*** (0.05)	-0.15 (0.22)
Italy	-1.25*** (0.23)	-1.18*** (0.05)	-1.30*** (0.18)
The Netherlands	0.07 (0.21)	0.13*** (0.03)	0.10 (0.15)
Poland	-0.64** (0.25)	-0.69*** (0.03)	-0.77*** (0.15)
Spain	-1.13*** (0.26)	-0.95*** (0.03)	-1.15*** (0.19)
UK	1.10*** (0.22)	1.28*** (0.02)	1.19*** (0.16)
AIC	17946.69	2584.92	177395.34
BIC	18038.08	2614.47	177575.85
LL	-8957.34	-1278.46	-88680.67
N	2235	61	301979
Parties	61		61
Politicians			1689
Var: party	0.13		0.08
Var: politicians			0.35

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Dominant mainstream as baseline.

Table A1.3: EU embedding results comparison (1)

	Original	Party level	Tweet level
Intercept	0.56* (0.28)	0.45*** (0.04)	0.70* (0.29)
Challenger party	0.09 (0.13)	0.43*** (0.03)	0.02 (0.14)
Incumbent MEP	-0.00 (0.04)		-0.03 (0.06)
EU dissent	0.03 (0.04)	0.01* (0.01)	0.01 (0.05)
Germany	-1.35*** (0.26)	-1.09*** (0.05)	-1.45*** (0.27)
Greece	-0.40 (0.33)	-0.13 (0.10)	-0.41 (0.35)
Hungary	-0.47 (0.45)	-0.85** (0.29)	-0.43 (0.49)
Ireland	-0.88** (0.30)	-0.79*** (0.09)	-0.97** (0.32)
Italy	0.47 (0.30)	0.58*** (0.11)	0.35 (0.31)
The Netherlands	-1.24*** (0.26)	-1.33*** (0.06)	-1.32*** (0.27)
Poland	-1.53*** (0.30)	-1.47*** (0.05)	-1.55*** (0.31)
Spain	-0.60* (0.26)	-0.64*** (0.06)	-0.56* (0.28)
UK	-2.31*** (0.26)	-2.27*** (0.04)	-2.40*** (0.26)
AIC	6725.94	1910.95	32475.60
BIC	6803.20	1936.28	32601.13
LL	-3348.97	-943.48	-16222.80
N	1842	61	31847
Parties	61		61
Politicians			1296
Var: party	0.18		0.19
Var: politicians			0.14

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table A1.4: EU embedding results comparison (2)

	Original	Party level	Tweet level
Intercept	0.67* (0.26)	0.41*** (0.05)	0.77** (0.27)
Eurosceptic party	0.42* (0.20)	0.61*** (0.07)	0.33 (0.22)
Eurosceptic FR party	-0.15 (0.18)	-0.00 (0.04)	-0.18 (0.20)
Green-challenger	0.85** (0.31)	1.36*** (0.05)	0.89** (0.32)
Other challengers	-0.09 (0.23)	0.26*** (0.04)	-0.20 (0.25)
Incumbent MEP	-0.00 (0.04)		-0.03 (0.06)
EU dissent	0.01 (0.04)	0.03*** (0.01)	-0.01 (0.04)
Germany	-1.39*** (0.23)	-1.09*** (0.05)	-1.46*** (0.24)
Greece	-0.42 (0.30)	-0.14 (0.10)	-0.42 (0.32)
Hungary	-0.58 (0.45)	-0.79** (0.29)	-0.49 (0.48)
Ireland	-1.00*** (0.28)	-0.81*** (0.09)	-1.06*** (0.30)
Italy	0.47 (0.27)	0.59*** (0.11)	0.37 (0.28)
The Netherlands	-1.41*** (0.24)	-1.34*** (0.06)	-1.47*** (0.25)
Poland	-1.45*** (0.27)	-1.29*** (0.05)	-1.47*** (0.28)
Spain	-0.53 (0.29)	-0.56*** (0.06)	-0.43 (0.30)
UK	-2.37*** (0.24)	-2.40*** (0.04)	-2.46*** (0.25)
AIC	6719.71	1136.63	32469.73
BIC	6813.53	1168.29	32620.36
LL	-3342.85	-553.31	-16216.86
N	1842	61	31847
Parties	61		61
Politicians			1296
Var: party	0.14		0.14
Var: politicians			0.14

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Dominant mainstream as baseline.

Table A1.5: Broadness of EU embedding results comparison (1)

	Original	Party level
Intercept	-0.18 (0.09)	0.75*** (0.08)
Challenger party	-0.06 (0.04)	-0.02 (0.04)
Attention (all)	1.00*** (0.08)	
Incumbent MEP	0.04* (0.02)	
EU dissent	-0.01 (0.01)	0.01 (0.01)
Germany	-0.08 (0.07)	0.09 (0.08)
Greece	-0.11 (0.09)	-0.11 (0.09)
Hungary	-0.20 (0.11)	-0.42*** (0.10)
Ireland	0.02 (0.09)	-0.07 (0.09)
Italy	-0.30*** (0.08)	0.00 (0.09)
The Netherlands	-0.25*** (0.07)	0.05 (0.08)
Poland	-0.43*** (0.08)	0.10 (0.09)
Spain	-0.18* (0.07)	0.07 (0.08)
UK	-0.05 (0.07)	-0.05 (0.08)
AIC	217.15	-55.85
BIC	303.75	-28.41
LL	-92.57	40.93
N	1657	61
Groups	61	
Var: party	0.01	
Var: residual	0.06	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table A1.6: Broadness of EU embedding results comparison (2)

	Original	Party level
Intercept	-0.12 (0.09)	0.76*** (0.09)
Eurosceptic party	0.04 (0.06)	-0.03 (0.07)
Eurosceptic FR party	-0.15** (0.05)	-0.05 (0.06)
Green-challenger	-0.13 (0.08)	-0.10 (0.09)
Other challengers	-0.02 (0.07)	0.06 (0.07)
Attention (all)	1.01*** (0.08)	
Incumbent MEP	0.04* (0.02)	
EU dissent	-0.03* (0.01)	0.01 (0.01)
Germany	-0.11 (0.07)	0.08 (0.08)
Greece	-0.13 (0.08)	-0.11 (0.09)
Hungary	-0.24* (0.11)	-0.43*** (0.10)
Ireland	-0.04 (0.09)	-0.08 (0.09)
Italy	-0.31*** (0.07)	-0.00 (0.09)
The Netherlands	-0.29*** (0.07)	0.05 (0.08)
Poland	-0.42*** (0.07)	0.10 (0.09)
Spain	-0.22** (0.08)	0.01 (0.10)
UK	-0.06 (0.07)	-0.07 (0.09)
AIC	224.85	-53.36
BIC	327.70	-19.59
LL	-93.43	42.68
N	1657	61
Groups	61	
Var: party	0.01	
Var: residual	0.06	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Dominant mainstream as baseline.

Table A1.7: Green issue comparison

	Saliency (1)	Embedding (1)	Broad Emb (1)	Saliency (2)	Embedding (2)	Broad Emb (2)
Intercept	-1.60*** (0.39)	0.50*** (0.14)	-0.35*** (0.07)	-1.49*** (0.33)	0.44** (0.14)	-0.33*** (0.07)
Challenger party	-0.06 (0.18)	-0.09 (0.07)	-0.07** (0.03)			
Eurosceptic party				-0.27 (0.18)	-0.16 (0.12)	-0.05 (0.04)
Eurosceptic FR party					0.05 (0.11)	-0.12** (0.04)
Green-challenger				1.50*** (0.37)	-0.39* (0.16)	0.00 (0.06)
Other challengers				-0.49 (0.31)	-0.09 (0.13)	-0.05 (0.05)
EU dissent	0.04 (0.06)	-0.00 (0.02)	-0.02* (0.01)	0.04 (0.05)	0.01 (0.02)	-0.02* (0.01)
Incumbent MEP	-0.05** (0.02)	0.08** (0.03)	0.04** (0.01)	-0.05** (0.02)	0.08** (0.03)	0.04** (0.01)
Germany	-0.93* (0.37)	-0.63*** (0.14)	-0.41*** (0.05)	-0.95** (0.31)	-0.61*** (0.14)	-0.42*** (0.05)
Greece	-3.04*** (0.48)	-0.42 (0.29)	-0.39*** (0.08)	-3.06*** (0.41)	-0.39 (0.29)	-0.40*** (0.08)
Hungary	-0.98 (0.50)	-1.57*** (0.43)	-0.04 (0.13)	-1.45** (0.47)	-1.30** (0.45)	-0.10 (0.14)
Ireland	-0.59 (0.42)	-0.35* (0.16)	0.05 (0.07)	-0.65 (0.35)	-0.31 (0.16)	0.04 (0.07)
Italy	-0.85* (0.40)	0.77*** (0.15)	-0.22*** (0.05)	-0.89** (0.34)	0.78*** (0.14)	-0.22*** (0.05)
The Netherlands	0.10 (0.36)	0.74*** (0.13)	-0.06 (0.05)	-0.04 (0.31)	0.80*** (0.13)	-0.08 (0.05)
Poland	-0.87* (0.43)	0.29 (0.15)	-0.17** (0.06)	-0.86* (0.36)	0.25 (0.14)	-0.16** (0.06)
Spain	-0.74* (0.37)	0.96*** (0.13)	-0.06 (0.05)	-0.51 (0.38)	1.00*** (0.15)	-0.08 (0.06)
UK	-0.63 (0.38)	-0.36** (0.13)	-0.01 (0.05)	-0.79* (0.33)	-0.31* (0.13)	-0.03 (0.05)
Attention (all)			1.37*** (0.06)			1.37*** (0.06)
AIC	17762.89	7727.76	-741.98	17743.96	7727.23	-728.31
BIC	17842.86	7805.57	-653.73	17835.35	7821.72	-623.52
LL	-8867.45	-3849.88	386.99	-8855.98	-3846.62	383.15
Politicians	2235	1916	1836	2235	1916	1836
Parties	61	60	58	61	60	58
Var: party	0.41	0.04	0.01	0.29	0.04	0.01
Var: residual			0.04			0.04

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$