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The Ties That Bind: Text Similarities and Conditional Diffusion among Parties

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Abstract

Comparative analyses of party policy diffusion are only just emerging. To better understand the conditions under which diffusion occurs, this article argues that three heuristics – availability, representativeness and anchoring – shape parties' efforts to gather information (from elsewhere), leading to differing diffusion effects. The study operationalizes the outcome as textual similarity of party manifestos in nineteen Western democracies from 1960 to 2016, applying a text-as-data approach and machine translation. Analyzing dyads, it assesses how commonalities and sender/receiver attributes impact diffusion. It finds that there is little room for cross-border diffusion as successful parties stick to their old program. Beyond the still-prevailing domestic context, 'learning from cultural reference groups' in a region is most important. In addition, diffusion appears within EP factions and transnational party organizations independently of the success/loss of the sender. The analysis thus sheds light on (un-)favorable conditions for party policy diffusion and paves the way for future studies applying machine translation and quantitative text analyses.

Approaching Party Policy Diffusion

In the 1990s the 'Third Way' swept through Europe, fundamentally transforming Social Democratic parties. The emergence of green issues in the 1970s and 1980s had a profound impact on party manifestos in the Western world. Exchange among parties is quite an old phenomenon; they are more than simply functional responses. European parties in particular have a long history of cross-country interactions, starting with the First International in the 1860s. Closely aligned with the development of the European Union (EU), the professionalization of transnational party cooperation led to institutionalized platforms for the cross-border exchange of ideas, political guidelines and strategies. In addition to such 'landmark events', there are also smaller-scale anecdotes about party policy diffusion. For instance, the Norwegian *Kristelig Folkeparti* was a pioneer for Christian Democratic parties in Scandinavia, and the Finnish Christian League's first electoral program turned out to be 'virtually a verbatim translation of that of the Norwegian Christians' (Arter 1980, 146).

Comparative analyses of party policy diffusion, however, gained momentum rather late: emerging from studies about 'what moves parties?' (cf. Adams 2012), Böhmelt et al. found that parties respond to the left–right positions of (larger) governing parties in foreign countries (Böhmelt et al. 2016; Böhmelt et al. 2017). Still, they concluded that future studies should 'identify

conditions under which party-policy diffusion effects are stronger or weaker' (Böhmelt et al. 2016, 407; emphasis in original).

In this vein, we argue that parties adapt ideas, rhetoric or style from other party manifestos, resulting in increased text similarity. How similar they are, however, depends on which instances are considered, which is in turn shaped by three heuristics: availability, representativeness and anchoring. Applying heuristics means effort reduction, examining fewer cues and 'integrating less information' (Shah and Oppenheimer 2008, 209). Commonalities – *the ties that bind* – affect availability, while vote gains or losses, a sender and receiver attribute, mirror representativeness and anchoring. Differing diffusion effects occur if parties apply these heuristics when filtering relevant instances.

Building on a basic definition of diffusion, we shed light on how commonalities and heuristics are interlinked. Methodologically, we opt for a dyadic analysis, assessing the impact of linkages and sender/receiver attributes on text similarity as the outcome of diffusion. Moving beyond left–right positions, we choose a text-as-data approach and apply machine translation to estimate the textual similarity of multilingual party manifestos in nineteen Western democracies from 1960 to 2016 based on the Manifesto Corpus (Krause et al. 2018). Testing different ties, our results uncover (un-)favorable conditions for party policy diffusion. We find there is less room for ideas from abroad as parties stick to their old program – especially if they gained votes. Unexpectedly, cross-border diffusion is also less relevant when parties lost, despite being in need ('anchoring'). Beyond the still prevailing domestic impact, text similarity is highest among parties from the same 'family of nations' (Castles 1998). What Simmons and Elkins (2004, 175) labeled 'learning from cultural reference groups' mirrors a level of 'effort reduction' that particularly eases diffusion. Diffusion from and among government parties is partly driven by the representativeness heuristic – that is, text similarity is higher if the sender gained votes. Both are of minor importance though. Instead, diffusion takes place within factions in the European Parliament (EP) and in transnational party organizations; but 'success' does *not* matter for diffusion among rather ideologically like-minded parties.

While our focus here is on manifestos as a whole, the 'surface' of texts, we also show the potential of quantitative text analysis and machine translation paving the way for prospective analyses of the content that diffuses. Finally, our results suggest a stronger focus on *regional* party cooperation for unfolding the pathways of diffusion among parties.

Diffusion Among Parties – A Dyadic Approach

Rogers' (2003, 5) famous definition of diffusion is our cornerstone for approaching diffusion among parties: 'the process in which an innovation is communicated through certain channels over time among the members of a social system'. Adapting the definition to political parties and party competition has several implications. It puts the spotlight on parties being both a sender and receiver at times, with an exchange taking place among parties that are somehow 'connected', that is, within dyads sharing a tie.[1] Inherently, the exchange of ideas entails a process of convergence (Rogers 2003, 5–6), and we cannot observe diffusion per se but only its outcome (here, the pairwise similarity of manifestos). The outcome, in turn, is affected by commonalities; and certain characteristics of the sender and receiver may ease or hinder the spread of ideas (Rogers 2003, 15–16).

Besides, people and organizations often rely on heuristics when processing information and making decisions (Gigerenzer and Gaissmaier 2011, 451). Applying heuristics means examining fewer cues and alternatives, applying less effort to retrieve and weigh information, and 'integrating less information' (Shah and Oppenheimer 2008, 209). Combining both perspectives, on an

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[1]A different approach to capturing diffusion relies on estimating spatial lags; see Neumayer and Plümper (2016), however, for the meaning and difficulties associated with specifying the weighing matrix W.

abstract level one may hypothesize that the lower the effort expended to recognize and process information from other parties (elsewhere), the more likely a diffusion of ideas, rhetoric or style becomes.

More specifically, we argue that the ties that bind and vote gains/losses (that is, sender/receiver attributes) resemble the availability, representativeness and anchoring heuristic that shape diffusion. All three, though to different degrees, help reduce efforts by affecting the visibility or immediateness of relevant instances, the ease of adaptation or the wealth of information that needs to be processed. 'Filtering' which instances are taken into account (and which are ignored), they lead to differing diffusion effects.

Regarding commonalities, we will consider the role of several ties. In line with what Simmons and Elkins (2004, 175) labeled 'learning through communication', we look at governing parties abroad, EP factions and transnational party organizations. Echoing their 'learning from cultural reference groups', we consider Castles' (1998) 'family of nations'. Finally, arguing for a diffusional perspective even on domestic party competition, we take competitors and a party's past into account.

A Diffusional Perspective on Party Competition

Previous research on party competition and party policy change has almost exclusively focused on the domestic context. While there is abundant evidence and spatial theories on (rational) party behavior, it has seldom been viewed from a diffusional perspective. This is despite 'diffusional' evidence: parties respond to competitors' moves at the last election (Adams and Somer-Topcu 2009; Williams 2015); they adapt ideas to fight 'newcomers' (Meguid 2008); like a 'predator', they exploit 'successful choices made by other agents' (Laver and Sergenti 2012, 134); and they 'adjust their issue attention in response to (lagged) changes in other parties' issue attention' (Green-Pedersen and Mortensen 2015, 748). Admittedly, the rationale for observing and responding to other parties is different for the domestic context: parties compete with each other for votes, and they do not compete with other parties elsewhere. Party policy makers may therefore have a different motivation to adopt ideas, rhetoric, or style from one sender or the other. Yet each of the above-mentioned findings resembles Roger's fundamental definition of diffusion processes, backing the idea that linkages and sender/receiver attributes matter even in the domestic context.

But as Kayser (2007) has convincingly argued, party competition is no longer purely domestic. Parties respond to external impacts like economic globalization (for example, Adams, Haupt and Stoll 2009; Ezrow and Hellwig 2014; Haupt 2010), and a 'Europeanization' of party politics is taking place (Nanou and Dorussen 2013; Somer-Topcu and Zar 2014). Consequently, Böhmelt et al. find indications of 'party policy diffusion', that is, parties respond to the left–right positions of (larger) governing parties in foreign countries (Böhmelt et al. 2016; Böhmelt et al. 2017). This, again, resembles the basic definition: diffusion is more likely if a (larger) governing party (that is, a sender attribute) is 'connected' (that is, shares a tie) with other parties.

To uncover (un-)favorable conditions for party policy diffusion, we take a dyadic approach proposed for analyzing the diffusion of public policies (Gilardi and Füglister 2008; Volden 2006). It is advantageous because each entity 'is, in turn, allowed to be the potential "receiver" and "sender" of a policy, and independent variables can measure the characteristics of both [...] as well as their relationships' (Gilardi and Füglister 2008, 415). Arguing that party competition can fruitfully be seen from a diffusional perspective brings us back to our cornerstone and the question of how heuristics are interlinked with commonalities and sender/receiver attributes.

A Dyadic Approach to Diffusion among Parties

In line with Budge (1994, 452), we assume that parties act in an uncertain environment. Like any decision maker, parties can gather information from the past and elsewhere to look for

inspiration and ideas, 'draw their lessons' (Rose 1991) and thus reduce uncertainty about the 'best' strategy or policy offer. If parties were rational learners, they would collect information about *all* alternatives, and have full analytical capabilities and resources. These conditions are rarely met though, and people and organizations have been found to often rely on heuristics – a strategy 'that ignores part of the information' and reduces effort (Gigerenzer and Gaissmaier 2011, 454). In an uncertain environment with limited resources, applying heuristics can be an efficient solution though, leading to 'satisficing decisions' (Simon 1993, 397–98). Typically, three heuristics matter for (policy) learning (Meseguer 2006, 41; Simmons and Elkins 2004, 175; Tversky and Kahneman 1973; Tversky and Kahneman 1974): availability, representativeness and anchoring. Each is discussed in more detail below.

(1) The *availability heuristic*: Commonalities resemble the availability or perceptibility of information, that is, 'the ease with which relevant instances come to mind' (Tversky and Kahneman 1973, 207). Parties applying this heuristic are 'not guided by what they are able to compute, but by what they happen to see at a given moment' (Kahneman 2003, 1469). They would thus favour immediate, 'visible' cues even if limited (Shah and Oppenheimer 2008, 214). If domestic competitors come to mind more easily than ideas from governing parties elsewhere, the former should have a stronger impact on the outcome. Likewise, if information from members of the same EP faction is easier to gather and adapt than information from any other party with which the focal party has nothing in common, diffusion should be greater among the former. But even if information easily comes to mind and the number of instances is narrowed down through commonalities, certain attributes may further condition diffusion.

(2) Applying the *representativeness heuristic* means overemphasizing information from 'successful' parties – an attribute of the sender. The logic is that 'observers expect the statistics of a sample to closely resemble (or "represent") the corresponding population parameters, even when the sample is small' (Kahneman and Frederick 2002, 49). A victory or loss is an observable signal of a relative (dis-)advantage of a manifesto. Despite not being representative of all alternatives, parties considering only such instances further reduce their efforts (Shah and Oppenheimer 2008, 215), making diffusion more likely.

(3) Finally, applying the *anchoring heuristic* means parties adjust their evaluation of alternatives in light of a salient and accessible value – an anchor (Shah and Oppenheimer 2008, 211). The most salient trigger for parties is surely electoral defeat (Mair 1983, 408; Panebianco 1988, 243), which is a receiver attribute. Simply 'recycling' the same manifesto with which a party lost seems a rather bad idea. Conversely, there is less need to change a successful manifesto, so – consequently – there is less room for diffusion. Applying this heuristic further reduces a party's effort by eliminating alternatives (Shah and Oppenheimer 2008, 214).

In short, heuristics lead to 'heterogeneity in exposure' and 'heterogeneity in responsiveness' (Neumayer and Plümper 2012). As a result, differing party policy diffusion effects occur when heuristics guide parties in their search for information and their efforts to reduce uncertainty. As commonalities, vote gains of the sender and losses of the receiver make diffusion more likely, we expect text similarity to be higher if parties share a tie while being conditional on the performance of the sending or receiving party.

Differing Characteristics of Commonalities, Differing Diffusion Effects

Applying heuristics means reduced effort, examining fewer cues and taking less information into account. While a dyadic setup allows us to explicitly test the impact of commonalities, party policy diffusion research is still in its infancy regarding linkages. We therefore consider six ties,

mostly drawing on previous research: (1) a party's past, (2) domestic competitors, (3) governing parties abroad, (4) EP factions, (5) transnational party organizations and (6) other parties of the 'same family of nations'. Each commonality affects the availability or 'ease of coming to mind', the amount of information that needs to be processed and the ease of adaptation in terms of comparability. Each tie features characteristics that – more or less – reduce a party's effort when considering 'only' those instances rather than information from all (unrelated) parties.

(1) To start with, the easiest and cheapest approach is for a party to simply 'recycle' its last program rather than engage in a purposive search for information. It is a prime example of the availability heuristic, most likely being the first instance that comes to mind. In this way, parties also ensure their coherence and secure 'their' issue ownership (Budge 2015). Little can be learned from a single instance, though; especially not if the party lost. Mirroring the anchoring heuristic, a party's willingness to change indeed seems higher after losses (Schumacher et al. 2015; Somer-Topcu 2009). If parties were more open to diffusion in these circumstances, text similarity should be higher for any other tie.

(2) Broadening the view, the next instances that come to mind are domestic competitors. There is ample evidence that parties observe and respond to each other. The domestic context is identical, and parties 'know' each other, which makes it quite easy to adapt ideas, rhetoric or style. Yet some effort is required as the number of instances increases. And adaptation is recommended for reasons of credibility and avoiding the image of a 'poor copycat' (cf. Budge 1994; Laver and Sergenti 2012).

It is easy to see an ordering of 'recycling' and domestic competitors, with the former presumably having the strongest impact on text similarity (unless a party completely rewrites its entire manifesto). Turning to cross-border ties, this is less predictable. Undoubtedly, the efforts increase once broadening the view beyond borders: the number of instances explodes when considering *all* other parties elsewhere and the compatibility of contexts declines. Language borders arise, and other electoral systems with different imperatives (Cox 1990), diverging party systems (Lipset and Rokkan 1967) and different institutions (Castles 1998) need to be considered when thinking about adapting ideas, rhetoric or style. For this reason, *any* commonality among parties helps reduce the efforts by filtering and 'ignoring' parties with which the focal party has nothing in common, and instead learning and adapting from those with which they share a tie. Inspired by previous research, we consider four additional, cross-border ties.

(3) Böhmelt et al. (2016) found that parties respond to the left–right positions of governing parties elsewhere, arguing that parties focus on incumbency as a signal of 'success'. Resembling the representativeness heuristic, in light of our dyadic approach this would mean diffusion *from* any governing party to everyone else. Yet an alternative reading would be diffusion *among* governing parties. The idea is that '[f]requent intergovernmental meetings at multiple official levels can transmit information to policy makers about "what works" in other settings' (Simmons and Elkins 2004, 175), particularly in the European context with regular and formalized meetings. In this view, 'being in government' creates a tie and 'success' becomes a sender attribute. While it certainly reduces efforts, such meetings bring together ideologically diverse parties from heterogeneous contexts, and communication is likely about anything but party policies.

(4) Factions in the EP depict another link (Senninger, Bischof and Ezrow 2020). Exposed to members of like-minded parties from abroad, EP factions – already starting in the 1950s in the Common Assembly – represent an institutionalized platform for the exchange of information. Being a long-term member of an EP faction increases the likelihood of diffusion as regularity and stability in communication reduces uncertainty and deepens the

trustworthiness of the sender. Although member parties still have heterogeneous backgrounds, adaptation becomes easier through at least partial ideological congruence.

(5) The development of European parties closely resembles European integration (Ladrech 2006; Mittag 2006) but is not limited to it. Alongside integration, transnational party organizations (TPOs) have been founded. Despite some overlap with EP factions, these are not restricted to EU members (for example, the US Democrats and Conservatives became members of the European Democrat Union in 1982). Furthermore, parties may join different TPOs. Three Christian Democratic organizations, for example, existed side by side throughout the 1970s and 1980s; some parties (like the German CDU/CSU) were members of all three of them. Several TPOs exist, often along vaguely defined lines of party families, linking parties from around the globe. These federations provide institutionalized channels for the diffusion of ideas, platforms and strategies as well. While EP factions may be founded for reasons other than 'like-mindedness' (for example, access to resources), TPOs operate at a more ideational level, which simplifies adaptation.

(6) Previous cross-border ties reflect 'learning through communication' (Simmons and Elkins 2004, 175), while public policy studies often found a geographic pattern (Meseguer 2006, 41) as proximity and similarity in contexts are favoured in policy learning (Rose 1991, 13–15). The reason is that '[l]earning takes place at least partially through analogy, and lessons are viewed as more relevant the extent to which a foreign case is viewed as analogous' (Simmons and Elkins 2004, 175). Geographic proximity has been used as an indicator as often as it has been criticized as an oversimplification (Maggetti and Gilardi 2016). We therefore return to Castles' (1998) notion of 'families of nations' to capture 'learning from cultural reference groups' (Simmons and Elkins 2004, 175). Parties in the same region presumably come to mind first after leaving the domestic context. Recognizing and carrying over insights from regional parties is easier precisely because of their countries' proximity, common history, linguistic affinity and similarities of the political system. This commonality may therefore play a particular role in party policy diffusion providing the right amount of effort reduction vs. wealth of information to still arrive at 'satisficing decisions'.

In summary, we started with a famous definition of diffusion, arguing that even domestic party competition can be seen from a diffusional point of view. This perspective sheds light on the role of heuristics and commonalities. Applying heuristics helps parties reduce efforts when gathering and processing information from other parties (elsewhere). As they shape which instances are taken into account, and which parties are 'ignored', the availability heuristic in particular is interlinked with the ties that bind. Resembling the representativeness and anchoring heuristic, vote gains or losses of the sender and receiver may further condition diffusion.

As party policy diffusion research is still in its infancy regarding linkages, a dyadic approach is well suited to test the impact of commonalities and sender/receiver attributes on the outcome of diffusion, the pairwise text similarity. We identified two domestic and four cross-border ties that will be put to the test. Each commonality features certain characteristics that – more or less – reduce a party's effort. Thus heuristics lead to heterogeneity in exposure and responsiveness and, consequently, to differing diffusion effects. While it is partly indeterminate which ties are more important, we can nevertheless summarize the following expectations:

(1) *Availability*: In principle, we expect a higher level of text similarity for domestic ties than cross-border ones; still, we expect some ordering of the latter depending on the (dis-)similarity of contexts and the 'amount' of effort reduction it reflects.

(2) *Representativeness*: More is adapted, and text similarity is higher, if the sender gained votes.

(3) *Anchoring*: There is less space for (cross-border) diffusion if a party previously won and more if they lost.

In this way, our analysis contributes to better understanding the 'rationale' and conditions of party policy diffusion effects. Comparing party manifestos across time and space is not an easy task though, as we have to overcome language barriers. For this reason, we now present our methodological approach to assessing whether diffusion accounts for the (dis-)similarity of election manifestos.

Measuring Text Similarity, Ties and Attributes

Previous research on party policy diffusion has provided valuable insights using left–right positions (for example, Adams and Somer-Topcu 2009; Böhmelt et al. 2016; Williams 2015), more specifically the well-known RILE (Budge and Klingemann 2001). In order to move forward, we present a text-as-data approach. This method is superior to left–right scores in several respects. As Benoit, Laver and Mikhaylov (2009, 497–99) note, the Manifesto group's coding scheme per se and any derived index are but one of many possible realizations coded from the actual text. Sticking to the 'text generated by the authors' helps us to shorten the pathway of inference by circumventing all issues related to the measurement instrument, the coding and the scaling (Benoit, Laver and Mikhaylov 2009, 498). For example, parties may be misleadingly similar on a left–right axis but differ in their framing, as became apparent in the debate on welfare chauvinism (Schumacher and van Kersbergen 2016). To illustrate our point, consider Australia's National Party 2010, which may have been influenced by New Zealand's Progressive Party and its 2008 manifesto (≈ regional diffusion). Both score very similarly on the RILE (−0.47 and 0); when looking at the distribution across the categories that make up the RILE, both address very different topics, however. Unsurprisingly, we find a very low text similarity of 0.19 on a scale from 0 to 1; the mean within the English-speaking family of nations is 0.43 (SD = 0.15), with an overall mean of 0.27 (SD = 0.13).[2] Above all, since left–right scores are based on pre-selected categories, they miss the diffusion of new issues and further aspects of manifestos such as references to the past and future, to track records or policy pledges (Dolezal et al. 2018; Jahn 2014).

For this reason, we use the Manifesto Corpus (Krause et al. 2018) and look at party programs in nineteen Western countries.[3] Still, we must overcome language barriers before we can compare text similarity. Machine translation has matured as a feasible option for comparative analyses but has been seldom applied.[4] As a pilot, our analysis shows the potential of text-as-data approaches combined with machine translation to gain insights into party policy diffusion, and paves the way for prospective analyses of the content that diffuses.

The Dependent Variable: Estimating Pairwise Text Similarities

We define our dependent variable as the text similarity of both party manifestos within a dyad. Every dyad resembles the most recent information available to the focal party since its last election, making the dyad directed. We thus assume, for example, that Swedish parties competing in the 2010 election would only look at instances that became available during their inter-election

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[2]There is a negative but weak correlation of text similarity and the absolute distance of RILE positions (Pearson's r = −0.16). Including it in our regressions as a sensitivity check does not alter the results, which supports our notion that text-as-data approaches are better suited to analyzing diffusion among parties (cf. Appendix).

[3]Namely: Australia, Canada, Ireland, New Zealand, United Kingdom, United States, Denmark, Finland, Norway, Sweden, Austria, Belgium, France, Germany, Italy, Netherlands, Switzerland, Portugal and Spain. Due to data availability, we had to omit Iceland, Luxembourg and Greece.

[4]But see Proksch et al. (2019), who use machine-translated dictionaries to uncover sentiment in legislative speeches.

period since 2006 and with which they share a tie. Representing a 'bag-of-words approach' (Grimmer and Stewart 2013), we choose cosine similarity as our measure.[5] Derived as the cosine of the angle of two vectors, its metric is on a familiar scale from 0 to 1; it takes the overlap *and* frequency of words into account, and it is independent from document length (Bär, Zesch and Gurevych 2015, 16; Huang 2008, 51). To estimate text similarities, we use machine translation to create one document-feature matrix (DFM) in English that contains all party manifestos. We then apply common procedures to construct a DFM (Reber 2018): we first split n-grams into unigrams that may be present from translating compound words because 'n-grams do little to enhance performance' (Grimmer and Stewart 2013, 272). Secondly, we remove English 'stop-words', as they – by definition – do not contain topical content (de Vries, Schoonvelde and Schumacher 2018, 421). Thirdly, we trim the DFM, removing terms that occur in less than 1 and more than 99 per cent of the documents (Grimmer and Stewart 2013, 273). Finally, we normalize the DFM, turning term occurrences into relative frequencies (Welbers, van Atteveldt and Benoit 2017, 253–54), and opt for cosine similarity as our dependent variable.

Constructing such a DFM in English is not trivial, given the many languages in which party manifestos are written. Therefore, we now briefly present our translation approach that leads to this DFM. Afterwards we operationalize our independent variables.

Excursus: A Cost-Effective Approach for Overcoming Language Barriers

Cross-lingual analyses still face the obstacle that one would need a large amount of resources to translate all documents into one common language for analysis. Professional human translation is seldom feasible, given the amount of text and assets it would require. Machine translation is thus an alternative. It is cheaper (although not free) and faster, and recent advances make it a viable option. It has also been noted that working with translated DFMs is sufficient for analytical purposes in most cases (de Vries, Schoonvelde and Schumacher 2018; Lucas et al. 2015; Reber 2018). Reducing the amount of text being translated down to ≈5–10 per cent, this becomes all the more interesting for small-scale projects and pilot studies. As text similarity measures rest on a DFM, one needs to tokenize all manifestos and have the features translated only once. As for any automated text method, however, Grimmer and Stewart (2013, 271) remind us that validation is key. We summarize our translation approach here; the Appendix contains a comprehensive discussion.[6]

Opting for an intermediary solution in terms of resources, we take two 'paths'. First, we create cost-effective 'feature-translated DFMs' in which the features are translated to English only once. We then compare them to DFMs based on a random sample (≈20 per cent) of full-text translations for each language. This method allows us to contrast the feature-translated DFMs with the full-text ones to ensure the former still capture the essence of the full texts. The feature-translated DFMs can then be combined into a large DFM in English to perform analyses. We assess their equivalence by:

- looking at cosine and Jaccard similarity,[7] which ranges from 0.65 for Finnish to 0.80 for German and Portuguese with an overall mean of 0.74; the Jaccard coefficient ranges from 0.37 for Finnish to 0.57 for Catalan with an overall mean of 0.50;

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[5]In the Appendix, we discuss Jaccard similarity as an alternative measure. Re-running our regressions, the results reveal the same ordering of ties, which supports our substantive conclusions.

[6]The translation was done with Google Translate in January 2019. Note that we are not validating machine translation per se. It has been shown that full-text machine translation has caught up to human-translated texts (de Vries, Schoonvelde and Schumacher 2018; Le and Schuster 2016; Lotz and van Rensburg 2014; Lucas et al. 2015). If human translations were the 'gold standard', we instead compare the 'silver standard' of full-text machine translation to the 'bronze standard' of DFM translations. To our knowledge, only Reber (2018) provides first evidence of the suitability of this approach.

[7]Jaccard similarity solely quantifies the union of two sets and therefore gives lower scores (cf. Appendix for a discussion).

- looking at the vocabulary, which shows a slightly reduced number of types in the feature-translated DFM, ranging from −10.1 per cent for Catalan to only −2.4 per cent for Galician with an overall mean of −4.8 per cent;
- inspecting whether the pattern of pairwise similarities that we find across all sampled full-text translated documents can be detected by the feature-translated DFM as well. Here, Pearson's correlations range from 0.77 for Norwegian to 0.99 for Portuguese, with an overall mean of 0.95.

Our assessment shows that feature-translated DFMs are sufficiently equivalent, show an ample overlap in the vocabulary, and that no language systematically deviates due to the translation. Most importantly, these DFMs can detect the same patterns of pairwise similarities. This makes us confident that DFM translation is indeed a viable, cost-effective option, especially for pilot studies and small-scale projects, and that the combined DFM allows us to compare party manifestos across space and time.

Independent Variables: Capturing Ties and Attributes

There has been a lively debate in public policy studies about capturing diffusion processes at the indicator level (cf. Maggetti and Gilardi 2016; Neumayer and Plümper 2016). A dyadic approach allows us to explicitly test the impact of commonalities on the outcome of diffusion. We argue that six linkages and two attributes resemble the heuristics that shape diffusion, and lead to heterogeneity in exposure and responsiveness – and, consequently, to differing diffusion effects.

In Table 1 we summarize our operationalizations of the independent variables, denoting party i as the receiver and party j as the sender. Each tie represents a previously discussed commonality in the focal dyad. Vote gains or losses of the sender and receiver capture the representativeness and anchoring heuristic, signaling the success or disadvantage of a manifesto.[8]

Methodology

To account for the complex structure of the data, multilevel modeling is an appropriate approach (Rabe-Hesketh and Skrondal 2012). Gilardi and Füglister (2008, 425) suggest including three random intercepts in dyadic settings, one for each state plus time. Yet parties are nested in countries and elections. Other analyses indicate that unobserved election-specific factors are more important than the country or party level, though (Adams and Somer-Topcu 2009, 836; Lacewell 2017, 451; Meyer 2013). We therefore include two non-hierarchical random intercepts to control for peculiarities of the 'sender election' and 'receiver election'.[9] We further include decade fixed effects to deal with temporal trends and shocks (Plümper and Neumayer 2010). The oil crisis in the 1970s, the economic crisis in the early 1990s or the fall of the Iron Curtain may explain text similarity due to 'independent problem solving' (Holzinger and Knill 2005, 786) as parties responded to these new circumstances in a similar manner. For our analysis, we focus on 162 mainstream and niche parties, analyzing 105,575 directed party dyads in nineteen Western countries from 1960 to 2016.[10] A descriptive account of the (in-)dependent variable(s) can be found in the Appendix.

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[8]In the Appendix we report additional models using weighted vote gains/losses to account for the critique that a certain gain/loss may 'mean' different things for small and large parties. The interaction effects are slightly less pronounced, but still support our conclusions.

[9]Models with random intercepts for parties hardly differ, which confirms our conclusions (cf. Appendix). Furthermore, initial tests with more complex nesting structures often failed to converge and the variance component was close to zero, indicating that grouping at these levels was of no use (Hox and Wijngaards-de Meij 2015, 135).

[10]Due to gaps in the corpus we 'interpolated' a few missing documents by replacing them with their previous program, assuming the old text was still valid.

Table 1. Operationalization of commonalities and attributes

Tie/Attribute	Operationalization	Source(s)
Recycling	Dummy: 1 if i is linked to itself at the past election (that is, $i_t = i_{t-1}$)	Jahn et al. (2018)
Competitors	Dummy: 1 if j was a domestic competitor at the past election	Jahn et al. (2018)
From governments	Dummy: 1 if j is in government during the overlapping inter-election period but not i	Jahn et al. (2018)
Among governments	Dummy: 1 if i and j are both government parties during the overlapping inter-election period	Jahn et al. (2018)
EP factions	Dummy: 1 if i and j are members of the same EP faction during the overlapping inter-election period	Update and own extension of Warntjen, Hix and Crombez (2008)
Transnational party organizations	Dummy: 1 if i and j are members of the same TPO during the overlapping inter-election period	Update and own extension of Mittag (2006)
Family of nations	Dummy: 1 if i and j are in the same 'family of nations'	Castles (1998)
Vote gain/loss$_j$	j's past or previous vote gain/loss (in percentage points)	Jahn et al. (2018)
Vote gain/loss$_i$	i's past or previous vote gain/loss (in percentage points)	Jahn et al. (2018)

Note: for cross-border diffusion, the **past** vote gain/loss of the sender is relevant (that is, Δ vote share$_{it}$ = vote share$_{it}$ − vote share$_{it-1}$). For the domestic context, the **previous** gain/loss applies (that is, Δ vote share$_{it-1}$ = vote share$_{it-1}$ − vote share$_{it-2}$).

In sum, we argue that a text-as-data approach can overcome the shortcomings of left–right scores, and use pairwise text similarities as the dependent variable when analyzing diffusion among parties. Furthermore, we explicitly capture ties that bind and sender/receiver attributes. We are now able to assess whether diffusion processes become manifest in (dis-)similarities of election programs.

The Ties that Bind and Conditional Diffusion

We argue that three heuristics shape parties' efforts when gathering information (from elsewhere), leading to heterogeneity in exposure and responsiveness and, consequently, to differing diffusion effects. Rather than looking at all information, commonalities and sender/receiver attributes affect which instances are taken into account. Looking at the text where the diffusion of ideas, rhetoric or style materializes, we test whether (and in which way) ties and sender/receiver attributes explain the outcome of diffusion. Especially for cross-border ties we thus shed light on (un-)favorable conditions for party policy diffusion. Table 2 reports the results for seven regression models. Given abundant evidence that domestic party competition still accounts for the lion's share of the explanation – but also considering our notion to view it from a diffusional perspective – the 'purely' domestic Model 1 serves as the baseline to which each cross-border tie is then added.

Availability

The most important finding for the domestic context is the effect of *Recycling* on pairwise text similarities; it has the largest effect size in all models. Parties do not reinvent the wheel every time they draft a new manifesto. They instead drop parts of the text to make space for new ideas while keeping much of the old text. This ensures coherence and 'issue ownership' in the long run (Budge 2015). Changing too much would also distract voters, giving them a hazy signal about what the party actually stands for. However, this means there is restricted room for new ideas adapted from elsewhere.

Text similarity is higher if both parties are competitors, which corroborates earlier findings that parties observe and respond to each other (Adams and Somer-Topcu 2009;

Table 2. The impact of commonalities on text similarity

	1	2	3	4	5	6	7
'Recycling'	0.406***	0.406***	0.404***	0.400***	0.399***	0.359***	0.351***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Competitors	0.228***	0.228***	0.227***	0.228***	0.228***	0.180***	0.181***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
From governments		−0.001*					0.005***
		(0.001)					(0.001)
Among governments			0.016***				0.016***
			(0.001)				(0.001)
EP factions				0.017***			0.004**
				(0.001)			(0.001)
Transnational party organizations					0.019***		0.013***
					(0.001)		(0.001)
Family of nations						0.064***	0.063***
						(0.001)	(0.001)
Intercept	0.270***	0.271***	0.267***	0.269***	0.269***	0.256***	0.250***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Decade FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Random parts							
Var: elecid.i (Intercept)	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Var: elecid.j (Intercept)	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Var: Residual	0.007	0.007	0.007	0.007	0.007	0.007	0.006
Num. groups elecid.i	290	290	290	290	290	290	290
Num. groups elecid.j	290	290	290	290	290	290	290
AIC	−218,994	−218,983	−219,498	−219,158	−219,337	−229,179	−229,920
BIC	−218,889	−218,868	−219,383	−219,044	−219,222	−229,064	−229,767
LL	109,508	109,503	109,761	109,591	109,680	114,601	114,976
Obs.	105,575	105,575	105,575	105,575	105,575	105,575	105,575

Note: multilevel models with non-hierarchical random intercepts for elections. Decade fixed effects included but not shown. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Green-Pedersen and Mortensen 2015; Laver and Sergenti 2012; Meguid 2008; Williams 2015). It also shows that party manifestos as a text genre are more cohesive within countries.[11]

Two hypothetical examples may ease the interpretation: (1) a party adds previously unused terms or (2) it aligns its emphasis of a common word. First, imagine a draft and a document to learn from, each consisting of fifty unique terms mentioned once (that is, no overlap) and the frequency remains constant: under *ceteris paribus* conditions, the effect of *Recycling* is equivalent to adding ≈20 to 25 so far unused words from its old program or ≈10 to 15 terms from competitors. For the second case, imagine two documents with ten unique terms fixed, each of which is mentioned five times. In addition, both share one common word, mentioned twenty-five times in the template but initially only once in the draft. The effect of *Recycling* is equivalent to increasing the mentions to ≈7 to 8 times, or ≈4 times to align with a competitor.[12] In reality, parties adjust both the vocabulary and emphasis, which makes interpreting cosine similarity quite abstract.

Turning to cross-border ties, each commonality has a positive effect on the pairwise similarity of manifestos. Two findings are notable. First, their effect is smaller, indicating that there is little impact of new ideas from abroad. Secondly, ties differ, and an ordering appears whereby *Family of Nations* has the largest effect. Using Simmons and Elkins' (2004, 175) nomenclature, 'learning from cultural reference groups' seems more important than 'learning through communication'.

To start with, we find that diffusion *among* governments is more relevant than diffusion *from* government parties. While 'intergovernmental meetings […] transmit information to policy makers about "what works" in other settings' (Simmons and Elkins 2004, 175), their impact is very small. Likewise, government parties per se signal 'what works'. Still, both types of diffusion have a rather subtle and long-term impact on party programs.

EP factions and transnational party federations bring together like-minded parties. Joining an EP faction is rational for reasons other than the exchange of ideas though, for example access to resources and seats in committees. The development of the European's People Party and their Christian Democratic member parties' struggle over whether (and how) to include conservative parties (Jansen and van Hecke 2011, chap. 3) exemplifies that EP factions increase exchange, but not necessarily (ideological) compatibility. EP factions matter, providing instances that more easily come to mind (Senninger, Bischof and Ezrow 2020), but they still have a limited effect on the diffusion of ideas, rhetoric or style.[13] While transnational party organizations operate at a more ideational level than EP factions, they serve the same purpose. Depending on the assumed nesting structure (cf. Appendix) the effects of *EP Factions* and *Transnational Party Organizations* are often on par. Returning to the hypothetical scenario, their effects are equivalent to adding ≈1 to 2 adapted terms. What looks negligible at first sight amounts to a couple of paragraphs if for every fiftieth word, two previously unused terms are added, given that the 'average' manifesto in the corpus consists of 2,830 unique terms.

Supporting our expectation that 'learning from cultural reference groups' plays a crucial role in party policy diffusion, *Family of Nations* has the highest impact of all cross-border ties. The regional context provides more instances to learn from than the domestic one but is still accessible, providing 'analogous experience' due to cultural similarity. The effect of *Family of Nations* is equivalent to adding ≈3 to 4 unused terms or increasing the emphasis to 3 in our hypothetical examples. This is six times less than *Recycling* but three times more than any other cross-border tie. When considering other parties abroad, such instances seem to particularly represent the

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[11]We further interpret this as criterion validity of our dependent variable: documents of the same original language are still more similar when analyzing their translated, English version. Meanwhile, in multilingual countries like Switzerland or Canada, text similarity is higher among domestic competitors. Thus there is no bias towards higher similarity simply due to language.

[12]See the Appendix for a third scenario of a party replacing terms.

[13]Yet the outcome – increasing convergence of platforms – confirms Nanou and Dorussen's (2013) notion that European integration constrains the 'menu' on offer in the long run.

right mix of effort reduction, wealth of information and level of compatibility. In other words, it is less effort for the Swedish Social Democrats to gain insights and adapt ideas from the Norwegian Conservatives than the Spanish Socialist Workers' Party despite sitting together in the same EP group.

Representativeness and Anchoring

So far, we have only looked at how commonalities and the availability heuristic shape diffusion. Turning to sender/receiver attributes, we introduce an interaction term. This allows us to assess whether diffusion is conditional on the success of the sender signaling an advantage of its ideas (representativeness), the 'desperation' of a party and its willingness to change (anchoring), or whether instances 'just' need to be available.

We predict values of text similarity under *ceteris paribus* conditions, holding all covariates at zero except one linkage over levels of *Vote Gains/Losses* (Figure 1). As a baseline, assume both parties share one commonality. The degree of adaptation then depends on the success of the sender or 'desperation' of the receiver.

For *Recycling* we find a consistent pattern in line with previous research: the more a party gained, the more it keeps of its past program (Schumacher et al. 2015; Somer-Topcu 2009). Conversely, text similarity is lower if it (seriously) lost. Interestingly, this is the only conditional effect we find for the 'anchoring heuristic' (lower graphs in Figure 1). We expected that parties would look for inspiration elsewhere when they are in need. However, relevant instances are only considered to the extent they are available, but not assessed in terms of (dis-)advantage.

Severe losses often challenge the balance of power between factions, leading to internal struggle (Harmel et al. 1995; Harmel and Tan 2003). Such circumstances force parties to engage in 'soul searching', which leaves them less open to cross-border diffusion.

The picture looks different for 'representativeness' (upper graphs in Figure 1). As expected, text similarity is higher if the sender gained votes, and lower if it lost. This is especially true for competitors and slightly less so for diffusion *from* government parties. The former mirrors Laver and Sergenti's 'predator rule' that 'exploiting successful choices made by other agents' is an efficient strategy in an uncertain environment (Laver and Sergenti 2012, 134). The latter lends support to Böhmelt et al.'s (2017) finding that a governing party signaling 'success' makes diffusion more likely. In terms of our hypothetical example, for both the difference between a sender that gained vs. lost 5 percentage points is roughly equivalent to adapting ≈1 to 2 words more or less for every fiftieth type.

As EP factions and transnational party organizations connect quite ideologically like-minded parties, the almost 'non-conditionality' on the sender attribute indicates that 'success' or 'disadvantage' are irrelevant categories for diffusion among sister parties. Surprisingly, for diffusion *among* government parties, and even more for diffusion in the regional context, we find the reverse effect. Here, text similarity is higher if the sender lost and lower if it gained. When considering weighted vote gains/losses, emphasizing highly visible instances of loss or success (cf. Appendix), the same overall pattern emerges, though the latter two effects vanish. For now, we can only speculate about the 'rationale' for aligning one's own text with an unsuccessful one. Beyond availability, 'success' may simply be misinterpreted when considering 'analogous experience' from the region. A second reading comes to mind though: Böhmelt et al. (2016) estimated spatial lags using weighing matrices, which implies measuring the weighted sum of stimuli from abroad. Analyzing dyads focuses on commonalities in a one-on-one setting instead. Combining both results may point to 'herd behavior' (Levi-Faur 2002): a sufficient number of parties opting for the same idea is required before other parties respond to it. The resulting S-shaped curve of the number of adopters is a typical pattern for the diffusion of ideas (Rogers 2003). It may well be the case that 'herd behavior' takes place in the regional context – hence the largest cross-border effect for availability – even if it turned out to be less
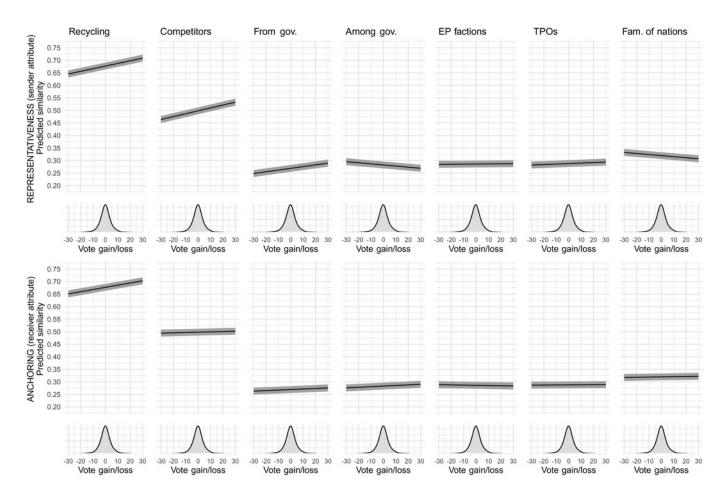
Figure 1. Conditional effect of sender and receiver attributes on text similarity

Note: predictions with 90 per cent confidence intervals, adjusting for all other covariates and assuming RE = 0. The bottom graphs show the kernel density of observed data for *Vote Gains/Losses*.

advantageous. This underlines that it is foremost the regional context where diffusion takes place, but future research should explore the underlying mechanisms.

In summary, our analysis shows that party policy diffusion is stronger if certain conditions are met (and less relevant otherwise). The domestic context prevails, but even here diffusion takes place with parties adapting ideas, rhetoric or style from competitors – especially when the latter gained votes. Parties change less of their manifesto if they were successful on their own (anchoring), which leaves less room for new ideas from abroad. Despite being in need, and against expectations, cross-border diffusion plays less of a role if a party (seriously) lost and instead may engage in internal struggles.

Our results complement Böhmelt et al.'s analyses regarding (un-)favorable conditions for party policy diffusion. Once looking abroad, the number of instances explodes that *could* provide information about the 'best' strategy or policy offer. Given limited resources, people and organizations tend to apply heuristics to 'filter' them, leading to differing diffusion effects. More specifically, we find diffusion *among* and *from* government parties to be less relevant. Instead, sitting together in an EP faction or joining a transnational party organization helps narrow down the instances. Because aligning with sister parties is unconditional on the sender attribute, diffusion among rather ideologically like-minded parties is *not* subject to assessing the (dis-)advantage of what diffuses. Still, 'learning from cultural reference groups' is most important. Considering 'analogous experience' from the region provides a particular mix of effort reduction vis-à-vis wealth of information and compatibility while still arriving at 'satisficing decisions' – at times even ignoring disadvantages.

Conclusion

We contribute to the emerging research on party policy diffusion by analyzing the outcome of diffusion as the pairwise similarity of party manifestos in nineteen Western democracies from 1960 to 2016. To this end, we overcame language barriers by using machine translation. Our study shows the potential of text-as-data approaches paving the way for refined analyses of the content of diffusion. As a first step, we took a bird's eye perspective looking at entire documents and cost-effective 'feature-translated' DFMs. For this reason, we are likely underestimating the role of party policy diffusion. Having established that machine translation is a suitable tool, a logical next step is zooming in on a reduced number of manifestos – focusing on one region, for example – to conduct full-text translations. This would allow for detecting and tracking specific terms and concepts and more advanced text analyses exploiting word embeddings and stylistic features.

Beyond our methodological approach, we started from a basic definition of diffusion, arguing that even domestic party competition can be seen from a diffusional perspective. This sheds light on the role of commonalities and sender/receiver attributes and how they link to heuristics. Heuristics are an efficient strategy in an uncertain environment with limited resources that reduce efforts when gathering and processing information (from elsewhere). Commonalities among parties help narrow down the instances taken into account, in turn leading to heterogeneity in exposure and responsiveness. The results are stronger and weaker diffusion effects.

Testing six linkages featuring different degrees of availability and effort reduction, the domestic context still prevails for explaining the outcome of diffusion. Beyond borders, we find that diffusion takes place mostly in the regional context. Parties adapt ideas, rhetoric or style from parties within the same family of nations – at times even ignoring any disadvantages of doing so. Membership in the same EP faction or joining a transnational party organization also increases the likelihood of diffusion. However, categories like 'success' or 'disadvantage' do *not* matter for diffusion among rather ideologically like-minded parties.

The 'verbatim translation' of the Finnish Christian League's program exemplifies that it is regional diffusion that matters most. Commonalities of countries within a family of nations

perfectly fit the bias and heuristics of policy makers to arrive at 'satisficing decisions'. Our results call for a closer inspection of the mechanisms, though, as it seems that we witness 'herd behavior' rather than 'rational learning'. To conclude, heuristics help to understand (un-)favorable conditions for party policy diffusion; it is the ties that bind and sender/receiver attributes that shape diffusion to different degrees.

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