

ARTICLE

# Adapt or Perish? How Parties Respond to Party System Saturation in 21 Western Democracies, 1945–2011

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## Abstract

This study examines whether (and how) parties adapt to party system saturation (PSS). A party system is oversaturated when a higher effective number of parties contests elections than predicted. Previous research has shown that parties are more likely to exit when party systems are oversaturated. This article examines whether parties will adapt by increasing the nicheness of their policy platform, by forming electoral alliances or by merging. Based on time-series analyses of 522 parties contesting 357 elections in twenty-one established Western democracies between 1945 and 2011, the study finds that parties are more likely to enter – and less likely to leave – electoral alliances if PSS increases. Additionally, a small share of older parties will merge. The results highlight parties' limited capacity to adapt to their environments, which has important implications for the literature on party (system) change and models of electoral competition.

**Keywords:** political parties; party change; party mergers; electoral alliances; party platform change

Party system instability is increasing in Western democracies (see, for example, Drummond 2006). In many countries, this has triggered debates on how to cope with increasing electoral fragmentation.<sup>1</sup> Whereas fragmentation may increase the ideological choices on offer, increased competition may also force parties out of business (Lowery et al. 2013), increase voter complexity, complicate the formation of government coalitions and negatively affect the survival of government coalitions (Sartori 1990). Despite these important consequences, there is limited research on how parties adapt to increased competition. This article addresses this gap by providing two contributions.

First, we use the innovative concept of party system saturation (PSS) to measure competition. A party system is oversaturated (undersaturated) when a higher (lower) effective number of parties contests an election than predicted based on electoral system permissiveness, the available space on the party system agenda and voter preferences (Lowery et al. 2013; van de Wardt, Berkhout and Vermeulen 2016). This concept captures the intuition that some party systems can sustain a higher number of viable parties than others.

Secondly, prior work indicates that PSS increases party *exit*, defined as the moment parties stop contesting elections (Lowery et al. 2013; van de Wardt, Berkhout, and Vermeulen 2016). We evaluate whether parties adapt to increasing PSS, that is, whether mainstream parties increase the nicheness of their platforms in response, whether (un)allied parties will (enter) not exit

<sup>1</sup>E.g., <https://www.theguardian.com/world/2018/mar/06/prospect-of-coalition-with-m5s-splits-italys-democratic-party>.

electoral alliances, and whether parties will merge. We consider merging to be only a *partial* exit strategy and potential adaptation.

Like Lowery et al. (2010), Lowery et al. (2013) and van de Wardt, Berkhout, and Vermeulen (2016), we build on organizational ecology, a theoretical perspective that assumes organizational (party) entry and exit to largely depend on the number of likeminded organizations (parties) already present, as organizations (parties) rely on the same key resources (for example, voters, members, donors and public funding) for their survival. Furthermore, organizations tend toward relative and structural inertia. That is not to say that organizations do not respond to their environments, but rather that they tend to do so too late (relative inertia theory) and mainly by launching adaptations in the periphery rather than in their core (structural inertia theory) (Gray and Lowery 1996; Hannan and Freeman 1989). These behavioural predictions echo spatial models assuming boundedly rational parties that are backward looking, respond to proxies (for example, vote loss and government–opposition status) rather than their environments, and that are constrained to move only within ideologically circumscribed areas (Bendor et al. 2011; Budge 1994).

In line with organizational ecology, previous research has found that parties are more likely to exit in response to increasing party density (van de Wardt, Berkhout, and Vermeulen 2017) and PSS (Lowery et al. 2013; van de Wardt, Berkhout, and Vermeulen 2016). However, the proposition of inert and boundedly rational political parties that die rather than adapt does not sit well with models of elections (for example, Cox 1990a; Cox 1990b; Downs 1957; Enelow and Hinich 1981), party strategy (for example, De Sio and Weber 2014; Meguid 2008), coalition formation (for example, Golder 2005; Golder 2006) and mergers (Bélanger and Godbout 2010), which emphasize parties' rationality, informational foresight and optimal strategizing in response to their competitive environments.

Building on this literature, we theorize that if PSS increases: (Hypothesis 1) mainstream parties will increase their ideological nicheness, (Hypothesis 2) parties will be likelier to enter electoral alliances and refrain from exiting them, and (Hypothesis 3) parties will be likelier to merge. Alternatively, our Inertia Hypothesis (Hypothesis 4) builds on organizational ecology's inertia theory and distinguishes core from peripheral change, predicting that mainstream parties will not increase their nicheness and parties will not merge (reflecting core changes), but that they will adapt by forming or dismantling alliances (peripheral change). Thus Hypothesis 4 is confirmed and organizational ecological theory supported when Hypothesis 2 is supported and Hypotheses 1 and 3 are rejected.

We test our hypotheses on a dataset covering 522 parties and 357 post-war elections in twenty-one Western democracies. There is only evidence that, when PSS increases, parties are more likely to enter and less likely to exit electoral alliances, and that a small share of older parties will merge. This set of results confirms our Inertia Hypothesis (Hypothesis 4), since it is in line with organizational ecology and bounded rationality models of electoral competition.

## Theory and hypotheses

### *Organizational Ecology and Party System Change*

This study can be situated in a small but growing literature applying organizational ecology to party competition (Lowery et al. 2010; Lowery et al. 2013; van de Wardt, Berkhout, and Vermeulen 2017). Organizational ecology is well established in organization studies and sociology. Within political science, it has been applied to the turnover of social movement organizations (for instance, Vermeulen 2013), interest groups (for example, Gray and Lowery 1996), and public organizations (for example, van Witteloostuijn et al. 2018). However, organizational ecology has received little attention in the party competition literature beyond the few exceptions referred to above.

Organizational ecology proposes that organizations compete for the same scarce resources. Therefore, organizational entry and exit largely depend on the number of organizations that are competing for these resources. The theory acknowledges that adaptation in response to competitive pressures may help organizations to survive, but argues that deep and successful adaptation is rare because organizations resist core changes, and if they ultimately change, they are often too late (Hannan and Freeman 1984). Hence, resource competition among parties is expected to increase party exit (and their replacement by new parties) rather than adaptation by existing parties, meaning that party system change mainly occurs through macro-level selection rather than micro-level adaptation.

To test these propositions, a first step was to develop the concept of PSS, which is the difference between the effective number of electoral parties (ENEP) and what organizational ecologists would call the party system's 'carrying capacity', defined as the maximum number of organizations sustainable in a given environment (Lowery et al. 2013; van de Wardt, Berkhout, and Vermeulen 2016). For parties, the carrying capacity equals the *predicted* ENEP based on a country's electoral rules (Cox 1997), cleavages (Lipset and Rokkan 1967), the political agenda's issue diversity (Lowery et al. 2013) and their interactions (Clark and Golder 2006). Simultaneously considering a multitude of explanations is important, as a party system could still be highly competitive despite a heterogeneous demand side, if, for instance, the electoral system is very disproportional. A party system is oversaturated when more effective parties contest elections than predicted by these variables.

Typically, competitiveness is measured by the observed ENEP (for example, Kselman, Powell, and Tucker 2016). However, we propose that the electoral fragmentation of party systems should be assessed in the context of each country's party system. For example, the 3.9 effective parties contesting the UK 2015 elections may be seen as many considering the UK's disproportional electoral system.<sup>2</sup> Yet in a very proportional electoral system like the Netherlands, this would qualify as few. Whereas Lowery et al. (2013) only measure the carrying capacity of the Dutch party system, we use a cross-national measure of PSS, relying on van de Wardt's (2017) ENEP model.

Prior organizational ecology studies have found that resource competition – measured either by the number of parties in a party's niche or PSS – increases the likelihood of party exit (Lowery et al. 2013; van de Wardt, Berkhout, and Vermeulen 2017). As explained below, PSS has a greater effect on parties that do not occupy a niche (van de Wardt, Berkhout, and Vermeulen 2016). The finding that increased resource competition fosters party exit provides evidence to support one of the basic assumptions of organizational ecology – that organizations are constrained by their resource environments, rather than that they simply manage to increase the available resources. Although increased competition could mobilize new activists and donors, electoral systems and the 100 per cent vote ceiling impose hard constraints. Importantly, Laroze (*forthcoming*) demonstrates that the successful entry of new parties is directly related to the exit of parties in the previous election, which provides evidence that party systems have finite carrying capacities.

That PSS and density increase party exit suggests that, like other organizations, parties may be considerably inert. This is not surprising, given that political parties are organizations composed of leaders and members tied together by an ideology, shared goals and routines. Indeed, organizational ecology is a universal theory that applies to any organizational form that competes in the same environment for the same set of scarce resources. However, some studies in the party competition literature have challenged organizational ecology's assumption of inertia as being overly deterministic (Harmel and Janda 1994, 263). Assuming (relatively) inert parties does not sit well, for instance, with models of electoral competition assuming that parties have full information and strategically respond to their environments (for example, De Sio and Weber 2014; Downs 1957; Enelow and Hinich 1984; Meguid 2008). Hence, we explore whether parties adapt to PSS.

<sup>2</sup><http://www.parl.gov.org/explore/GBR/election/>

### **Core Versus Peripheral Change**

We are interested in three potential responses: (1) whether mainstream parties will increase the nicheness of their platforms, and whether parties in general respond to an increase in PSS by (2) coalescing into electoral alliances or (3) mergers. Rational choice models of party strategies, pre-electoral coalition formation and party mergers provide arguments on why each of these may be rational responses to electoral competition. Organizational ecology, however, predicts that structurally and relatively inert parties can only engage in peripheral changes (alliance building) and not in core changes (nicheness strategies or merging).

Core changes are defined as adaptations to an organization's stated goals, authority arrangement or fundamental marketing strategy (Hannan and Freeman 1984). Hence, a party's core refers to its ideology, internal power balance and targeted core electorate. Peripheral change involves adjustments to how an organization connects with its external environment, and aims to protect its core from environmental shocks and insecurity (Hannan and Freeman 1984), such as a party's campaign strategy or press releases. We argue below that increasing nicheness and merging affect a party's core. Yet by entering an alliance, a party does not necessarily have to change its ideology or organization. Hence, we conceptualize alliance building as a peripheral change. Thus organizational ecology is confirmed if we find evidence of alliance building but not for nicheness strategies and mergers (see Hypothesis 4 below). Our three responses are not exhaustive. Parties can, for instance, also engage in peripheral change on valence dimensions of politics by electing a new leader or implementing a new campaign strategy (for example, Schofield 2003), keeping their ideological core intact. Yet due to data limitations and the simple fact that we cannot evaluate all potential responses in a single article, we focus on the three responses below.

### **Nicheness Hypothesis**

First, a party may increase the nicheness of its platform in response to PSS, which occurs when, relative to its competitors, the salience of its non-economic niche issue dimensions (for example, new politics) increases and/or that of economic issues decreases (Meyer and Wagner 2013). This saliency-based nicheness conception follows Meguid's (2005) seminal study, arguing that rather than the traditional class-based orientation of politics, niche parties prioritize cross-cutting issues. Mainstream parties do the exact opposite, and mainly focus on economic left–right issues. Like Meguid (2005), we thus assume that parties cannot establish a niche by emphasizing economic issues. Given the centrality of the economic debate in established democracies (Pierce 1999), this assumption appears to be justified.

Why would a nicheness strategy be a rational response to competition? Van de Wardt, Berkhout and Vermeulen (2016) argue that by targeting a specific segment of the electoral market, parties avoid competing with other parties (see also Bischof 2017). Clearly differentiating themselves from competitors and appealing to a target electorate becomes even more important in a highly competitive, oversaturated electoral market. By showing that the effect of PSS on party exit decreases with nicheness, van de Wardt, Berkhout and Vermeulen (2016) provide empirical evidence that a nicheness strategy protects parties against exit in competitive electoral markets.

This argument echoes spatial, game-theoretic election models. Although these models focus on position taking in a predefined dimensional space rather than on parties' issue emphasis, they also argue that parties in multiparty systems have an incentive to spread out over the competitive space when crowdedness, conceptualized as ENEP, increases (Cox 1990a; Merrill Iii and Adams 2002). Despite empirical evidence that this is indeed what parties do (Dow 2001, but cf. Ezrow 2008), these spatial models require strong assumptions like unidimensional competition and uniform voter distributions; even then, equilibria are rare (Cox 1990b). Nonetheless, also spatial theories not in search of equilibria propose that parties respond to competition through

product differentiation. Kitschelt's (1994, 123) 'simple theory of spatial competition' states that parties will maximize their votes in the short run if they respond to the balance of fractionalization of the party system. A party should move to the left if more significant competitors are located to its right than its left. If the reverse is true, the party should move towards the right. Thus according to spatial theory, parties should differentiate when competition increases.

Nicheness strategies are, however, not without costs. Entering new market segments may to a certain extent come at the cost of maintaining ownership over the issues that a party owns (Walgrave, Lefevere and Nuytemans 2009). Furthermore, it requires time and resources (for example, in-house expertise) to develop ownership over new issues. De-emphasizing economic issues may be especially costly for mainstream parties, as they are the ones associated with this traditional segment of the market. However, since they are also the most poorly differentiated, we hypothesize that only mainstream parties will increase their nicheness when PSS increases. Niche parties lack this incentive because they already occupy a niche. Furthermore, nicheness increases by niche parties cannot be conceptualized as core change (and potentially at odds with organizational ecology), as this captures the intensified use of a pre-existing strategy rather than a move in a new direction.

Are mainstream parties capable of moving into a niche? This requires fully informed and forward-looking parties, as a nicheness strategy will only succeed if other parties stay away from that niche. The election models referred to above all assume that parties are able to choose the optimal strategies given the strategies of rival parties (see also Adams and Somer-Topcu 2009; Meguid 2008). Hence, our first hypothesis is:

**HYPOTHESIS 1: (Nicheness Hypothesis):** Parties with a mainstream profile will, on average, be more likely to increase the nicheness of their policy platform when party system saturation increases.

### *Alliance Hypothesis*

Secondly, parties can adapt by joining an electoral alliance. We define electoral alliances as collections of parties that do not compete independently because they publicly agree to coordinate their campaigns by running joint candidates or lists (Golder 2005, 652). Hence, we largely follow Golder's (2005) definition of pre-electoral coalitions, only excluding instances in which parties only claim that they will form a coalition government after the elections. We are interested in alliances as a response where parties contest elections together.

Little research has been conducted on this topic, yet some insights regarding pre-electoral coalitions are applicable (Golder 2005; Golder 2006), since electoral alliances are also coalitions. According to Golder (2006, 197), one potential benefit of an alliance is that it could 'attract a higher number of voters than any of the coalition parties would win running independently'. Assuming that, at the very most, an alliance will pool the existing voters of its constituent members ( $1 + 1 = 2$ ) and that the electoral system offers no electoral economies of scale, only small parties that might not win seats on their own have an electoral incentive to join. Larger parties aspiring to govern can also form a coalition after the election. Even without economies of scale, however, electoral alliances already bring economies of *scope* by reducing campaign expenses (for instance, drafting a common manifesto and fielding a common candidate).

Furthermore, in any type of electoral system, in addition to pooling voters, a coalition bonus (that is,  $1 + 1 > 2$ ) is conceivable. Rather than assuming that voters' utility function only depends on the ideological proximity of parties, extensions of the traditional Downs (1957) model propose that when several parties are located closely together, voters will opt for the biggest contender in terms of expected size. Voters can coordinate their actions and learn about the coalition's strength through polls and media hype (Kaminski 2001; McKelvey and Ordeshook 1984). Additionally, voters may value certainty about what a party will do if elected (Enelow and Hinich 1981). By

declaring that they will govern together, electoral coalitions may attract voters from other parties that cannot provide this certainty (see also Golder 2006).

Despite these potential synergies, alliances are not without risks or costs: their success depends on whether voters are willing to transfer their votes between parties (Golder 2006). When deciding on a common list, candidate and/or platform, parties have to make policy compromises, which risks alienating their activists and core support base (Blais and Indridason 2007). The fact that compromises have to be made prior to elections is especially painful, given that, contrary to post-electoral government coalition bargaining, parties cannot claim that they are taking their public responsibility to form the government wanted by the electorate (Golder 2006).

Given these costs, running in an electoral alliance becomes rational especially when PSS is high. Here we build on Golder's (2005, 648) argument that 'disproportionality encourages pre-electoral coalition formation, but only when the number of parties is sufficiently large'. She uses 'sufficiently large' to refer to the presence of 'surplus' or 'excess' parties, which exactly captures our argument that the incentives to coalesce are high when ENEP exceeds the carrying capacity (even though we argue that the carrying capacity is determined by more than just the electoral system). In such a competitive electoral market, electorally large parties will be less dominant, which threatens their office ambitions. For small parties, their very survival may be in jeopardy.

Consider the 2004 'Valentine cartel' between the Christian Democrat Christen-Democratisch en Vlaams (CD&V) Party and the Flemish nationalist Nieuw-Vlaamse Alliantie (NVA) Party in Belgium. Around 2001, the CD&V repositioned itself towards a more Flemish nationalist stance, reducing the transaction costs of cooperating with the NVA.<sup>3</sup> In 2003, NVA rejected their first rapprochement attempt. However, CD&V's second attempt in early 2004 was successful against the backdrop of an election poll indicating that NVA was below the electoral threshold, while CD&V was leading after having been Flanders' third party for a long time and having spent two consecutive terms in opposition. Hence, CD&V's motive was to re-establish itself as Flanders' largest party and to regain office, while NVA's was to survive (Van de Looverbosch 2015). Ultimately, the coalition won the 2007 election. Notably, the Belgian party system was heavily oversaturated in the run-up to the Valentine cartel (with 5.1 and 3 effective parties in 1999 and 2003, respectively). This provides anecdotal evidence that based on election polls, rational parties will try to reap economies of scope and coalition bonus by coalescing when they fail to reach their goals due to increased electoral competition.

**HYPOTHESIS 2:** (Alliance Hypothesis): Parties will, on average, be more likely to enter and less likely to exit alliances when party system saturation increases.

### **Merger Hypothesis**

Thirdly, parties can merge, which involves the amalgamation of two or more parties into a single party organization (Ibenskas 2016). What distinguishes mergers from full exit is that members, activists, politicians and policies from the merging parties can transfer to the new party (for example, Sikk and Köker *forthcoming*). Hence, a merger can be conceptualized as a *partial* exit strategy and core adaptation, in which two or more parties give up their individual identities to create a new organization, develop a common party platform and have a single party leader (Ibenskas 2016). Compared to an electoral alliance, which parties can enter or leave relatively easily (Ibenskas 2016), a merger may take more time to complete (for instance, lengthy negotiations), initially costs money (for example, branding), and tends to be permanent if successfully completed. Moreover, mergers come with the same risk that voters of the merging parties must be willing to support the new party.

<sup>3</sup><https://www.demorgen.be/nieuws/en-toen-verdwaalde-cd-v-in-zijn-eigen-plot-be41b1f4/>

Mergers can, however, amplify the rewards from electoral alliances. In terms of scope economies, parties not only save money by running one campaign, but also by merging their organizations, especially in the longer run. Besides lower costs, activists and donors may prefer to donate their time and money to parties with a better chance of winning (Bélanger and Godbout 2010). Additionally, parties can profit from a coalition bonus ( $1 + 1 > 2$ ), even in systems without seat bonuses for larger parties, because voters of adjacent parties may defect to the merged party due to its larger size (Kaminski 2001). A final, particular advantage of merging is that parties can credibly rebrand themselves (Bélanger and Godbout 2010). Consider the Canadian Reform Party, which, when renaming itself as the Canadian Alliance, was incapable of changing its reputation of being a Western, social-conservative and anti-Quebec party despite a new leader, platform and name. As argued by Godbout and Bélanger (2005), it took the merger with the Progressive Conservative Party in 2003 for the Canadian Alliance to finally shed this image. Hence, a potential synergy arises when a new platform can be developed that would not have been attainable by each party independently. Our measure of saturation indicates heavy oversaturation in the Canadian party system in the run-up to this merger. Hence, we formalize that in oversaturated party systems, rational parties will be more likely to merge.

**HYPOTHESIS 3:** Parties are, on average, more likely to merge when party system saturation increases.

### *Inertia Hypothesis*

The literature motivating Hypotheses 1–3 assumes that parties have full information and carefully weight the costs and benefits of platform changes, alliances or mergers in light of their competitive environment. However, organizational ecology's micro theory argues that organizations (parties) are not 'rational, flexible and speedy adapters to changing environmental circumstances' (Freeman and Hannan 1989, 426). There is considerable evidence that organizations are 'structurally' or 'relatively' inert: they rarely have the capacity to make meaningful or timely adaptations (Aldrich 1999, 43–48, cf. Wezel and van Witteloostuijn 2006). Organizational ecology does not deny that organizations can (and do) adapt: 'organizational changes of some kinds occur frequently and organizations sometimes even manage to make radical changes in strategies and structures' (Hannan and Freeman 1984, 149). The argument is that organizations have difficulty launching and implementing changes that affect the core of their organization (hence, they are structurally inert), and that they rarely succeed in doing so correctly and in time, given the environmental shifts (hence, they are relatively inert).

Whereas organizational ecology has received little attention in the party competition literature, these assumptions echo election models that assume bounded rationality, in which parties lack full information and their ideology is a lens through which to interpret and react to their uncertain environment (Bendor et al. 2011; Budge 1994). Therefore, parties can only move within a circumscribed area, making radical ideological change highly unlikely. Moreover, due to information shortages and cognitive constraints, parties lack the capability to directly respond to their environment (such as public opinion shifts). Instead, they rely on proxies such as past election results (for example, Budge 1994), government–opposition status (Bendor et al. 2011; Schumacher et al. 2015) and marker parties (Adams and Somer-Topcu 2009) when deciding about programmatic change.

Within organizational ecology, the distinction between core and peripheral change is essential. It is risky for an organization to change its core in response to environmental shifts. Hence, this literature stresses the benefits of stability (Brunsson and Olsen 1993). Stakeholders, from customers to politicians, expect organizations (private and public) to be accountable, reliable and consistent. Hannan and Freeman (1984, 153) argue that 'the modern world favours collective actors that can demonstrate or at least reasonably claim a capacity for reliable performance

and can account rationally for their actions' (cf. Meyer and Rowan 1977). Adapting an organization's core features undermines the legitimacy derived from accountability, reliability and consistency. Organizations should therefore not change their identity or legally sanctioned *modus operandi*.

To apply this notion to political parties, when increasing their nicheness, parties try to establish ownership over new issue dimensions. If they merge, they disappear as independent organizations. Both changes affect a party's core. Running in an electoral alliance requires no change to a party's ideology or organization. A party will not be able to set the joint coalition program squarely at its own ideal point (Golder 2006). However, this is a matter of compromise, similar to government coalition formation after elections, and does not involve ideological change within the party. Building on bounded rationality models and organizational ecology, parties are highly unlikely to respond to PSS with core changes:

**HYPOTHESIS 4:** (Inertia Hypothesis): Parties will only respond to party system saturation by being more likely, on average, to enter alliances and less likely to exit them.

So, support for Hypotheses 1 and 3 goes against Hypothesis 4, and will imply that we cannot accept organizational ecology. In contrast, support for Hypothesis 2 but not for Hypotheses 1 or 3 is in line with organizational ecology.

### *Moderating Variables*

Based on party platform change studies, we test whether party size, age, intraparty balance of power, or government–opposition status conditions the effect of PSS. This is in line with organizational ecology, which has a long tradition of research into the impact of organizational features such as age and size on organizational change and survival (Hannan and Freeman 1989). First, small parties may have less divergent interests to accommodate, implying more flexibility (Meyer and Wagner 2013). Secondly, older parties are more historically rooted (Marks and Wilson 2000), and are hence likelier than younger parties to lose credibility among voters after adaptation. Thirdly, parties with an internal power balance favouring party leadership have greater freedom to respond to environmental incentives (Schumacher, de Vries, and Vis 2013). Finally, most studies argue that opposition parties are more likely to adapt, because they are risk acceptant (Bendor et al. 2011; Meyer and Wagner 2013, but cf. Schumacher et al. 2015). In case of a nicheness strategy, it is also unlikely that government parties will be able to downplay economic issues owing to their status as incumbents. Our final moderation hypotheses are thus as follows:

**HYPOTHESIS 5:** Parties with a mainstream profile that are younger (Hypothesis 5a), smaller (Hypothesis 5b), more leader dominated (Hypothesis 5c) and in opposition (Hypothesis 5d) are more likely to increase the nicheness of their policy platform when party system saturation increases.

**HYPOTHESIS 6:** Parties that are younger (Hypothesis 6a), smaller (Hypothesis 6b), more leader dominated (Hypothesis 6c) and in opposition (Hypothesis 6c) are more likely to enter and less likely to exit alliances when party system saturation increases.

**HYPOTHESIS 7:** Parties that are younger (Hypothesis 7a), smaller (Hypothesis 7b) and in opposition (Hypothesis 7c) are more likely to merge when party system saturation increases.



## Data and measurement and model specifications

### Data and Case Selection

We compiled a longitudinal dataset from 1945 until 2011 for twenty-one established Western democracies;<sup>4</sup> each country was included from its first democratic post-war election.<sup>5</sup> We focus on established democracies, as our measure of PSS does not travel to newer democracies (see below), and because we cannot expect Hypotheses 1–3 to surface when voters and parties lack the electoral history necessary to behave strategically.

Information on which parties contested elections is from the ParlGov database (Döring and Manow 2015). Parties obtaining at least 1 per cent of the vote or one seat in lower house parliamentary elections are systematically included in ParlGov. The only important modification that we made is that we ensured that all party–election observations are included: if party *X* runs in elections *t* and *t* + 1 but only in election *t* manages to acquire at least 1 per cent of the votes or a seat, ParlGov will exclude party *X* in election *t* + 1, while we will include it at *t* and *t* + 1. Parties that have never met ParlGov’s threshold are not included. This poses no threat to the validity of our conclusions, since a large share of these parties is likely to run for other reasons (such as playing pranks or raising publicity) than those assumed by models of elections (for example, office, votes) and coalition formation, making them inappropriate for evaluating Hypotheses 1–3. We abided by ParlGov’s definition of a party, implying that party name changes are not coded as new parties.<sup>6</sup>

### Measuring Party System Saturation

To measure PSS, we need the residuals from a model that regresses ENEP on a party system’s characteristics. A positive residual implies that more effective parties contest elections than predicted, while a negative residual indicates the reverse. The first goal of the research project of which the underlying article is part was to create a parsimonious model of ENEP with explanatory power in all party systems under examination. This is an ambitious goal, and it is the subject of a standalone manuscript. Our measure of PSS is based on Model 2 of Table 2 in van de Wardt (2017). This model includes measures of public demand, political supply and electoral openness, explaining 31 per cent of the variance and including a large number of elections. Van de Wardt (2017) shows that explanatory power drops to 13 per cent when this model is run on less institutionalized party systems, justifying our focus on advanced democracies.

We consider two alternative measures, detailed in the Appendix, in our robustness checks. First, we utilize the residuals of Model 3 of van de Wardt (2017), and include the heterogeneity of voters’ short-term ideological left–right preferences (increasing the  $R^2$  to 37.7 per cent, but reducing the number of available elections from 387 to 151). Secondly, we take the residuals from Clark and Golder’s (2006) well-known study that excludes the heterogeneity of the political supply, but delves deeper into the effect of electoral institutions ( $R^2 = 40$  per cent). Our main findings hold across all measures of PSS. Below, we briefly summarize the model used here. Further detail are available in the Appendix and van de Wardt (2017).

The dependent variable *ENEP* is an inverse Herfindahl Index (Laakso and Taagepera 1979). Indices are from Gallagher (2017). *ENEP* takes into account parties’ relative vote shares, which serves as a proxy for the number of electorally viable parties (Goloso 2010). Parties’ vote shares need to be considered since organizational ecology’s concept of carrying capacity relates to the maximum number of viable parties that is sustainable within a party system.

<sup>4</sup>We analyzed Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. Due to missing data relating to PSS, we could not include Iceland, Luxemburg or Malta.

<sup>5</sup>Greece, Portugal and Spain enter the dataset in 1977, 1975 and 1974, respectively.

<sup>6</sup>For more detail, see <http://www.parlgov.org/documentation/codebook/#party>

Regarding the explanatory variables, the model includes the interaction – referred to as the standard model – between electoral system permissiveness, measured by logged median district magnitude ( $\log M$ ) and societal heterogeneity (for example, Clark and Golder 2006). This measure of heterogeneity categorizes social groups on the basis of divisions that have strong descent roots, and that are locally viewed as the most consequential (Fearon 2003). The standard model posits that societal heterogeneity leads to a higher ENEP if electoral rules are sufficiently permissive.

Secondly, following Stoll (2011), the model considers that when more dimensions are salient, such as religious or post-materialist issue dimensions, electoral support spreads out over a greater effective number of parties. This so-called party-defined space is captured by the raw dimensionality of the party system (Stoll 2011). Data on parties' issue emphases was derived from the Comparative Manifesto Project (CMP) (Volkens et al. 2013).

Thirdly, when party issue attention is spread out over a wider array of policy issues, more effective parties can survive (Lowery et al. 2013; van de Wardt 2017). The diversity of the party system agenda is measured based on the CMP too. For each election, Shannon's H entropy is calculated over the salience proportions associated with each individual issue by all parties. Analogous to the standard model, raw dimensionality and issue diversity are interacted with logged median district magnitude, capturing the notion that a heterogeneous demand or supply only increases ENEP if electoral systems are sufficiently permissive.

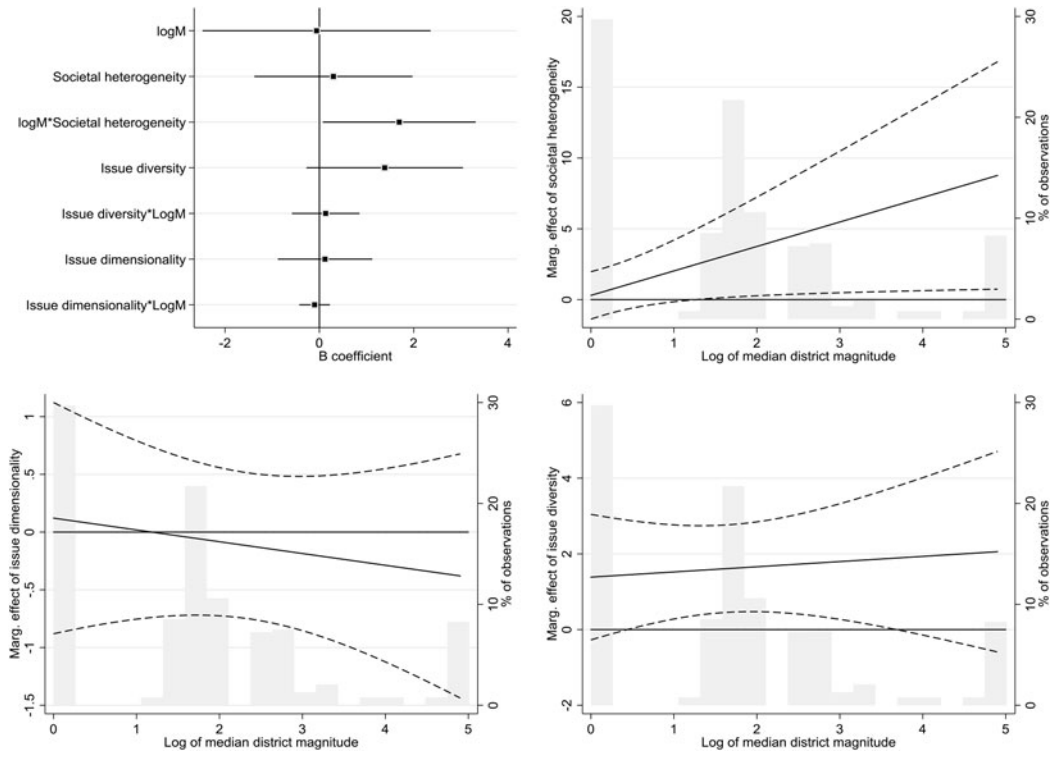
The model was estimated using OLS with robust standard errors clustered by countries to handle time dependencies within countries. Figure 1 summarizes the findings.

The upper-left figure shows that the interaction between  $\log M$  and societal heterogeneity is statistically significant ( $b = 1.694$ ,  $p < 0.1$ ). We are primarily interested, however, in the marginal effects, as the effects of societal heterogeneity, issue diversity and raw dimensionality should especially play out when electoral systems are sufficiently permissive. Indeed, the effect of societal heterogeneity is statistically significant when  $\log M$  is 1.3 or higher, thus when  $M$  is equal to or higher than 3.5 (upper right). That the effect of heterogeneity is suppressed when  $M$  is lower is perfectly in line with the standard model. Then, voters can still be expected to vote strategically, implying that greater societal heterogeneity will not automatically yield a higher ENEP. Like Clark and Golder (2006, Figure 1), we find that the marginal effects are significant against two-tailed 90 per cent confidence (corresponding to a one-tailed alpha of 0.05), which suffices to confirm the standard model.<sup>7</sup> There is no evidence that raw dimensionality increases ENEP. The marginal effects (bottom left) reveal that the effect of raw dimensionality is insignificant for each observed value of  $\log M$ . Still, the political supply matters, as issue diversity significantly increases the number of parties when  $\log M$  ranges between 0.5 and 3.7 – that is, when  $M$  ranges between 1.7 and 41 (bottom right).

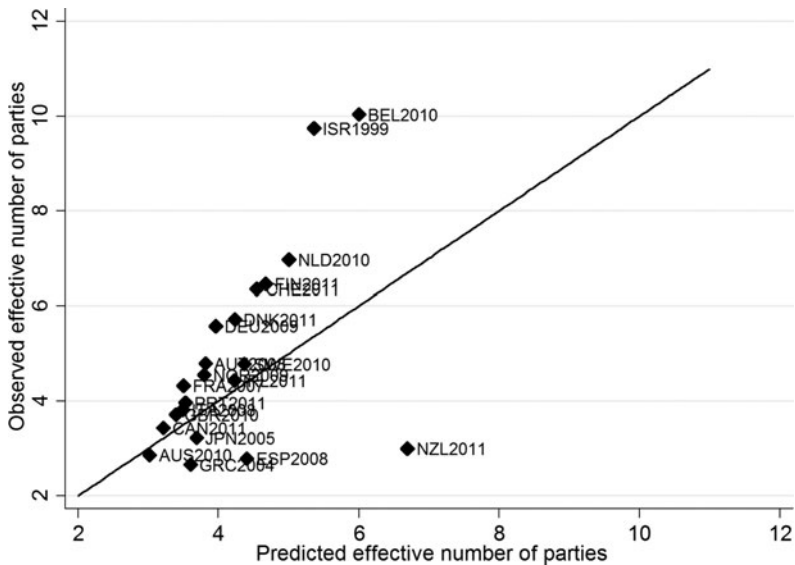
Figure 2 maps the residuals by country for the most recent elections. If a case lies on the diagonal line, observed ENEP equals predicted ENEP. For instance, the Belgian and Israeli party systems are heavily oversaturated, while the carrying capacity of the Spanish party system would allow for more parties than were present in 2008, which may help explain the recent electoral breakthroughs of Podemos and Ciudadanos. The heavy undersaturation of New Zealand's party system suggests that, in the end, (new) parties were unsuccessful at exploiting the 1993 electoral reform from first past the post to mixed-member proportional system, widening the carrying capacity.

Below, we discuss the data, operationalizations and statistical techniques for each of our hypotheses. The descriptive statistics and model specifications are displayed in Appendix Tables A1, A2 and A3.

<sup>7</sup>Even more so, because a replication study has shown that this significance test is too conservative (Esarey and Sumner 2018).



**Figure 1.** Regression coefficients explaining ENEP (upper left) and marginal effect plots (remaining graphs)  
 Note: from Model 2 of Van de Wardt (2017). The explained variance is 31 per cent. 90 per cent CI.



**Figure 2.** Party system saturation in the most recent elections  
 Note: the distance to the diagonal line indicates the degree of under(over)saturation.

### Testing the Nicheless Hypothesis (Hypothesis 1)

Parties' nicheless at  $t$  is obtained by subtracting a party's emphasis on economic issues compared to other parties in the system from its relative emphasis on the niche issue dimension (see below) it emphasizes the most (Meyer and Wagner 2013).<sup>8</sup> We chose this continuous dependent variable because it captures the fact that parties may not be able to afford to completely ignore economic issues (for instance, Sigelman and Buell 2004). Data on parties' issue emphases are from the CMP (Volkens et al. 2013). The CMP employs human coders who assign each quasi-sentence (the part of sentences with an actual statement) in a party's election manifesto to one of fifty-six issue categories. The number of quasi-sentences in each category is divided by the manifesto's total number of quasi-sentences to derive saliency. Our measure is calculated in two steps. First, we aggregated all issues into Stoll's (2011) seven policy dimensions: economic, cultural-ethnic, religious, post-materialist, foreign policy, democratic-authoritarian or urban-rural. Secondly, following Meyer and Wagner (2013), we calculated how many standard deviations a party's emphasis on a dimension was above the weighted average emphasis of the other parties in the same election.<sup>9</sup> Issue emphases were weighted according to parties' vote shares. Finally, we subtracted the party's standard deviation on the economic dimension from its largest positive standard deviation on any of the non-economic niche dimensions.

Since we only hypothesize that parties with a mainstream profile will increase their nicheless, we interact PSS at  $t - 1$  with a party's profile, mainstream or niche, at  $t - 1$ . The moderating variable is thus a dichotomized version of the dependent variable.<sup>10</sup>

Next, we use three-way interactions to determine whether mainstream parties' nicheless strategies are conditioned by their size, age, intraparty balance of power or government-opposition status. Party size was measured by its vote share at  $t - 1$ , age by the number of years at  $t$  since the party's founding, opposition status at  $t - 1$  denotes whether election  $t - 1$  resulted in opposition or government status for a party (all derived from ParlGov), and intraparty balance of power is scaled from 0 (activist dominance) to 30 (leadership dominance) (Schumacher, de Vries and Vis 2013).

We control for party size, age and opposition status, which may also exert additive effects on a party's nicheless. First, electorally larger parties may not only have more divergent interests to accommodate (Meyer and Wagner 2013), making a focus on a larger range of issues necessary; they may also have more organizational resources at their disposal to do so. Secondly, in becoming more established players, niche parties may come under pressure to emphasize economic issues, implying that nicheless decreases with age. Thirdly, government parties are expected to solve the important economic issues of the day, implying that they cannot afford more nicheless (Green-Pedersen and Mortensen 2010). Fourthly, we control for vote losses between  $t - 1$  and  $t - 2$ , as losses may serve as a proxy that nicheless adjustment is needed (Meyer and Wagner 2013). We specified multilevel models with party-election observations nested within parties. Throughout, we controlled for period dummies.

### Testing the Alliance Hypothesis (Hypothesis 2)

We estimate transition models (Jackman 2000) using logistic regressions, which give the probability of parties moving in and out of electoral alliances. The dependent variable is dichotomous, capturing whether a party contests an election in an alliance (1) or not (0). Data are from ParlGov (Döring and Manow 2015). Following Golder's (2005) conceptual definition, ParlGov codes parties as alliance members if the election results demonstrate that they ran joint candidates

<sup>8</sup>Although nicheless is a relative measure, all parties can simultaneously increase their nicheless if they all prioritize a different niche dimension.

<sup>9</sup>See the supplementary information of their article.

<sup>10</sup>We applied Wagner's (2012) procedures.

or under a joint list. Regarding the component that the alliance must be made public, we assume that the statistical agencies on which ParlGov relies provide the results as presented to voters on the ballot.

Analogous to our analysis of Hypothesis 1, the transition model makes a party's strategy at  $t$  conditional on its strategy at  $t - 1$ . To accept Hypothesis 2, we must first demonstrate that parties that were not in an alliance at  $t - 1$  join one if PSS increases. With two-way interactions, we consider whether parties can more easily adapt if they are younger, smaller, more leadership dominated or opposition parties. Next, we explore the reverse transition – whether parties are less likely to exit alliances if PSS increases – by multiplying the stability probability (that is, remaining in an alliance) by  $-1$ . We also evaluate how the moderating variables affect this alternative transition. Since this yields the same substantive conclusions, we report this in Appendix Table A4 and Figure A1.

We consider several controls. First, previous studies revealed that two parties are likelier to form a coalition if they are located more closely together ideologically, as this reduces transaction costs (for instance, Golder 2006). Translated to a non-dyadic setting, ideologically moderate parties are expected to more easily find alliance partners. A measure of left–right policy extremity is generated by calculating the Euclidean distance between the focal party's left–right position at  $t - 1$  and the average position of the other parties at  $t - 1$ . For left–right positions, we rely on the CMP's Rile measure (Laver and Budge 1992). To avoid list-wise deletion, we take a party's latest observed left–right position when its position is missing. Secondly, parties are more likely to team up with those known as trustworthy (Debus 2009). Therefore, we control for a party's history of cooperation by including the proportion of elections up to election  $t - 1$  for which it was in an alliance or government coalition. Thirdly, when facing electoral fragmentation, parties may use electoral alliances as signalling devices (Golder 2005). Therefore, we include the number of parties that gained at least one seat in the previous elections.

A second set of controls builds on the party merger literature. We add advantage ratio and performance thresholds (Bélanger and Godbout 2010; Ibenskas 2016). The advantage ratio equals a party's proportion of seats divided by its acquired proportion of the votes in the previous election. Higher values indicate that a party was more advantaged by the electoral system, which may decrease its utility from alliances. Moreover, parties join alliances to overcome electoral thresholds and/or to win office (Ibenskas 2016). Hence, we include dummy variables capturing whether a party had parliamentary representation in the preceding legislative term (1 = yes; 0 = no) and whether it was in opposition (1 = yes, 0 = no). Because members of electoral alliances do not receive separate vote shares and usually refrain from drafting their own manifesto, a party's ideological extremity and advantage ratio could only be included in the model explaining transitions from non-membership to membership. Finally, we consider the hierarchical structure of the data, nesting party–election observations in countries.

### **Testing the Merger Hypothesis (Hypothesis 3)**

Hypothesis 3 is not tested using transition models, because a merger aims at an irreversible transition.<sup>11</sup> Parties score 1 on the dependent variable if election  $t$  is the last they contested independently, meaning that at  $t + 1$  they must have merged (0 if otherwise). Data on party mergers are from ParlGov (Döring and Manow 2015). Since there are only sixty merger instances, we estimate the model using Firth's penalized likelihood for rare event data (Leitgöb 2013).

We consider whether this relationship is conditioned by a party's age and its size and government–opposition status resulting from election  $t$ . We had to exclude leader dominance. Due to missing data combined with the few merger instances, we would not have enough events per

<sup>11</sup>Merger termination does happen occasionally (Bolloyer, Ibenskas and Keith 2016). However, we have no data on whether pre-merger parties are being re-established, implying that we cannot study mergers as transitions.

variable (Vittinghoff and McCulloch 2007). The controls are largely similar to Hypothesis 2, as mergers can be seen as permanent alliances. Since mergers require high levels of trust (Mair 1990), we include a party's previous experience in electoral alliances and government coalitions. Parties with a history of cooperation are expected to be likelier merger candidates. It is also expected that parties without political representation or office are more likely to merge (Coffé and Torenvlied 2008), and that those more advantaged by the conversion of votes into seats are less likely to do so (Bélanger and Godbout 2010). The only difference with our alliance model is that we control for the costs involved with new party founding (Cox 1997; Tavits 2006): higher costs may increase the utility from mergers (Coffé and Torenvlied 2008). We measure these costs as the deposit for registering a party as a proportion of current GNP per capita, the number of signatures required to have access to the ballot (petition) per 1,000 eligible voters, and public party financing measured by a dummy variable that indicates if public funds were available to cover a share of the campaign expenditure. Data is from Tavits (2006).

## Results

### *Evaluating the Nicheless Hypothesis (Hypothesis 1)*

Table 1 presents the results. Model 1 shows that parties with a mainstream profile at  $t - 1$  decrease rather than increase their nichelessness when PSS increases ( $b = -0.189$ ,  $p > 0.1$ ). This effect, as well as the additional effect for parties with a niche profile at  $t - 1$  ( $b = 0.010$ ,  $p > 0.1$ ), is statistically insignificant. The marginal effects (Figure 3, upper left) confirm this: for mainstream (and niche parties), the confidence bounds entrap the zero line. Hence, we have no evidence for Hypothesis 1.

In Models 2 to 5, we add three-way interactions to evaluate whether party age, intraparty balance of power, size or opposition status conditions this relationship. Figure 3 maps the interactions. None of the moderators significantly increases the chances that a party with a mainstream profile at  $t - 1$  will increase its nichelessness in response to PSS: the marginal effects are either negative or statistically insignificant. There is evidence that they are more likely to decrease nichelessness in response to PSS if they are moderately leader dominated (upper right) or in opposition (bottom centre). These effects run counter to Hypothesis 1, as mainstream parties should adapt by increasing their nichelessness. Importantly, mainstreamness increases by mainstream parties is not evidence of core changes. The latter requires the adoption of strategies outside parties' current repertoire (Boone and van Witteloostuijn 1995). Hence, this effect is not at odds with organizational ecology. Further note that the effect is not robust (see Appendix Sections 3.1, 3.2, 4.1 and 4.2). As for the controls, there is strong evidence that nichelessness decreases with party size and age.

### *Evaluating the Alliance Hypothesis (Hypothesis 2)*

Table 2 depicts the results. Model 1 focuses on transitions where alliance members at  $t - 1$  leave their alliances at  $t$ , whereas the remaining models pertain to the opposite transition. In line with Hypothesis 2, Model 1 shows that PSS decreases the likelihood that alliance members will leave alliances when PSS increases. This transition probability follows from multiplying the stability probability, remaining in an alliance, by  $-1$ . Thus, a one-unit increase in PSS decreases the logged odds of leaving by 0.536 ( $-1 \times 0.536$ ,  $p < 0.01$ ).

Turning to the transition from non-alliance to alliance membership (Model 2), there is also convincing evidence in favour of Hypothesis 2. In response to a one-unit increase in PSS, the logged odds of alliance entry increase, on average, by 0.373 ( $p < 0.01$ ), or by a factor of 1.452 (odds ratio =  $\exp(0.373)$ ), which is a sizable effect. In Models 3 to 6, we evaluate whether this effect is conditioned by party age (Model 3), leader dominance (Model 4), size (Model 5) or opposition status (Model 6). Figure 4 maps the marginal effects. There is little evidence in favour of interaction, as the marginal effect of PSS on alliance entry does not meaningfully increase or decrease with the moderating variables. The fact that the marginal effect is positive and

**Table 1.** Nicheless Hypothesis

	Model 1	Model 2	Model 3	Model 4	Model 5
Party system saturation (PSS) <sub>t-1</sub>	-0.189 (0.116)	-0.263 (0.184)	-0.354 (0.289)	-0.188 (0.171)	-0.070 (0.150)
Niche profile <sub>t-1</sub>	0.554** (0.275)	1.224*** (0.453)	0.302 (0.883)	0.684* (0.407)	0.330 (0.435)
PSS <sub>t-1</sub> × Niche profile <sub>t-1</sub>	0.010 (0.215)	-0.087 (0.344)	-0.466 (0.643)	-0.044 (0.303)	-0.613 (0.456)
Party age <sub>t</sub>	-0.014** (0.007)	-0.012* (0.007)	-0.012** (0.006)	-0.014** (0.007)	-0.014** (0.007)
PSS <sub>t-1</sub> × Party age <sub>t</sub>		0.002 (0.003)			
Niche profile <sub>t-1</sub> × Party age <sub>t</sub>		-0.014* (0.008)			
PSS <sub>t-1</sub> × Niche profile <sub>t-1</sub> × Party age <sub>t</sub>		0.003 (0.007)			
Leader dominance			-0.043 (0.039)		
Niche profile <sub>t-1</sub> × Leader dominance			0.007 (0.047)		
PSS <sub>t-1</sub> × Leader dominance			0.006 (0.015)		
PSS <sub>t-1</sub> × Niche profile <sub>t-1</sub> × Leader dominance			0.018 (0.031)		
Party size <sub>t-1</sub>	-0.058*** (0.016)	-0.057*** (0.016)	-0.045*** (0.012)	-0.056*** (0.017)	-0.057*** (0.016)
PSS <sub>t-1</sub> × Size <sub>t-1</sub>				0.000 (0.009)	
Niche profile <sub>t-1</sub> × Size <sub>t-1</sub>				-0.008 (0.021)	
PSS <sub>t-1</sub> × Niche profile <sub>t-1</sub> × Party size <sub>t-1</sub>				0.004 (0.021)	
Opposition <sub>t-1</sub> (RC: Government)	0.152 (0.231)	0.152 (0.231)	-0.086 (0.170)	0.154 (0.231)	0.160 (0.247)
PSS <sub>t-1</sub> × Opposition <sub>t-1</sub>					-0.216 (0.164)
Niche profile <sub>t-1</sub> × Opposition <sub>t-1</sub>					0.328 (0.541)
PSS <sub>t-1</sub> × Niche profile <sub>t-1</sub> × Opposition <sub>t-1</sub>					0.821 (0.515)
Vote loss <sub>t-1</sub>	0.008 (0.022)	0.006 (0.022)	-0.004 (0.017)	0.008 (0.023)	0.006 (0.022)
Constant	3.879*** (0.488)	3.783*** (0.494)	4.614*** (0.769)	3.855*** (0.492)	3.830*** (0.492)
Decade dummies available upon request					
σ <sup>2</sup> level 2 (party)	9.205 (1.333)	9.169 (1.327)	3.248 (0.586)	9.180 (1.336)	9.177 (1.330)
σ <sup>2</sup> level 1 (party/election)	11.268 (0.431)	11.241 (0.420)	5.405 (0.235)	11.270 (0.431)	11.242 (0.430)
BIC	8,990.145	9,008.183	5,665.482	9,012.047	9,008.344
N	1,620	1,620	1,178	1,620	1,620

Note: multilevel regression models explaining the nicheless of parties' policy platforms. The coefficients are b-coefficients. Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01 (two-tailed)

statistically different from zero for several values of age (1–68), party size (2–29 per cent), government as well as opposition parties and each value of leader dominance, is too little to conclude in favour of interaction, as the slope of the interaction terms does not differ from zero (Berry, Golder and Milton 2012).

Regarding the controls, Model 1 shows that political parties are less likely to leave alliances if they have more alliance experience (log odds =  $-1 \times 2.036$ ,  $p < 0.01$ ) and more likely to leave if there are more parliamentary parties (log odds =  $-1 \times -0.141$ ,  $p < 0.1$ ). The latter is consistent with Golder

**Table 2.** Alliance Hypothesis (Hypothesis 2)

	Alliance member $t - 1$ Model 1	Non-member $t - 1$ Model 2	Non-member $t - 1$ Model 3	Non-member $t - 1$ Model 4	Non-member $t - 1$ Model 5	Non-member $t - 1$ Model 6
Party system saturation (PSS) $_{t-1}$	0.536*** (0.167)	0.373*** (0.131)	0.346* (0.177)	2.265*** (0.790)	0.274 (0.173)	0.408** (0.183)
Party age $_t$	0.006 (0.007)	0.002 (0.006)	0.002 (0.007)	0.009 (0.011)	0.003 (0.006)	0.002 (0.006)
PSS $_{t-1} \times$ Party age $_t$			0.001 (0.004)			
Leader dominance				0.176 (0.117)		
PSS $_{t-1} \times$ Leader dominance				-0.036 (0.030)		
Size $_{t-1}$					-0.029 (0.023)	
PSS $_{t-1} \times$ Size $_{t-1}$					0.014 (0.015)	
Opposition $_{t-1}$ (RC: Government)	-0.311 (0.593)	-0.216 (0.568)	-0.222 (0.567)	-0.213 (0.801)	-0.206 (0.576)	-0.160 (0.605)
PSS $_{t-1} \times$ Opposition $_{t-1}$						-0.056 (0.203)
Without parliamentary representation $_{t-1}$ (RC: Represented)	-0.706 (0.626)	0.810 (0.777)	0.800 (0.779)	-1.837 (1.829)	0.886 (0.773)	0.810 (0.775)
Alliance experience $_{t-1}$	2.036*** (0.679)	0.782 (1.515)	0.825 (1.526)	-8.518* (4.687)	0.505 (1.537)	0.791 (1.514)
Government experience $_{t-1}$	-0.275 (0.821)	-0.849 (0.754)	-0.866 (0.757)	-0.502 (1.180)	-0.720 (0.767)	-0.850 (0.755)
Number of parliamentary parties $_{t-1}$	-0.141* (0.078)	0.130 (0.081)	0.129 (0.082)	-0.057 (0.178)	0.106 (0.084)	0.131 (0.082)
Advantage ratio $_{t-1}$		-1.180* (0.702)	-1.179* (0.703)	-1.040 (1.333)	-0.877 (0.736)	-1.179* (0.702)
Left-right distance $_{t-1}$		-0.095 (0.088)	-0.095 (0.087)	-0.465 (0.326)	-0.091 (0.087)	-0.094 (0.088)
Constant	1.009 (1.134)	-4.267*** (1.151)	-4.228*** (1.162)	-8.668*** (3.274)	-4.093*** (1.160)	-4.319*** (1.167)
$\sigma^2$ level 2 (country)	0.991 (0.855)	1.619 (0.931)	1.625 (0.934)	8.321 (5.284)	1.697 (0.963)	1.623 (0.932)
BIC	289.101	438.148	445.639	224.012	450.640	445.614
N	312	1,888	1,888	1,252	1,888	1,888

Note: multilevel logistic regression models explaining transitions from alliance membership to non-membership (Model 1) and from non-membership to membership (Models 2-6). The coefficients are logged odds. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  (two-tailed)

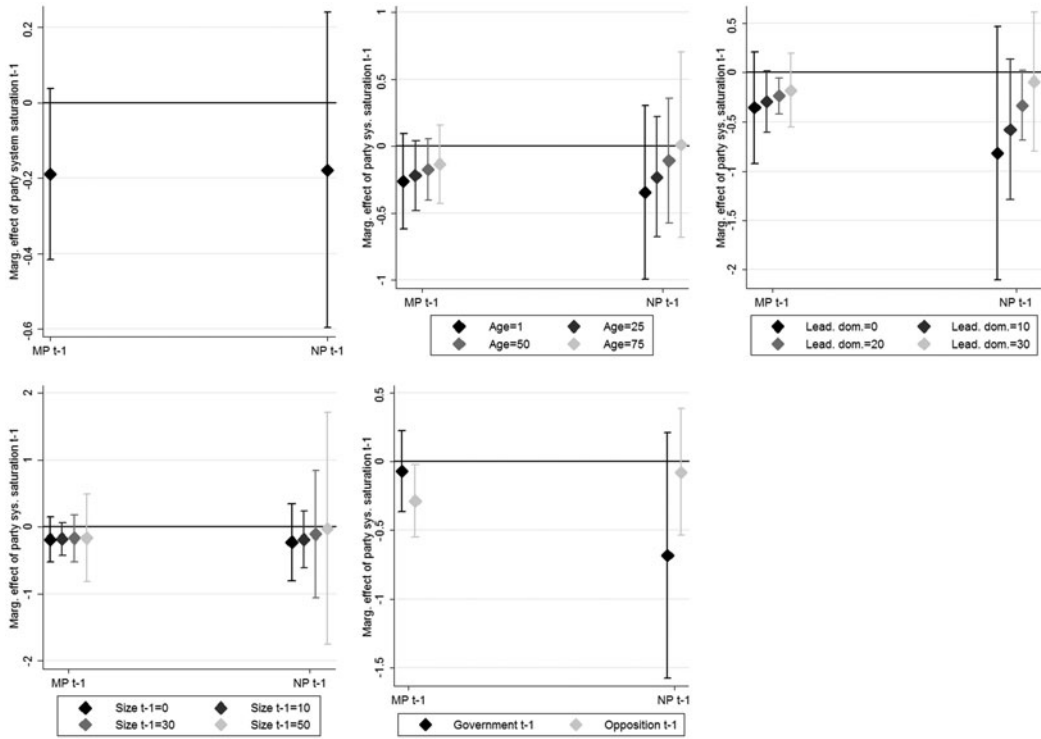
(2005), suggesting that alliances are *not* used as signalling devices. Finally, there is evidence (see Models 2, 3 and 6) that parties are less likely to enter alliances if they benefit from the conversion of their vote share into seats (For example, log odds = -1.180,  $p < 0.1$ , Model 2).

### Evaluating the Merger Hypothesis

Table 3 depicts the results. Model 1 contains all the independent variables. Given the relatively few instances of mergers, we proceed with a specification excluding predictors causing substantive list-wise deletion (Models 2-5), asserting that the number of events per variable remains at least 5 (Vittinghoff and McCulloch 2007).<sup>12</sup> There is no evidence in favour of Hypothesis 3, as the effect of PSS on a party's propensity to merge at  $t + 1$  is statistically insignificant (log odds = 0.161 and  $p > 0.1$ , Model 1; log odds = -0.001,  $p > 0.1$ , Model 2).

<sup>12</sup>In Models 2-5, the number of mergers is 57, 43, 57 and 57, respectively. Thus we remain well above this rule of thumb.





**Figure 3.** Marginal effects of PSS on nicheness

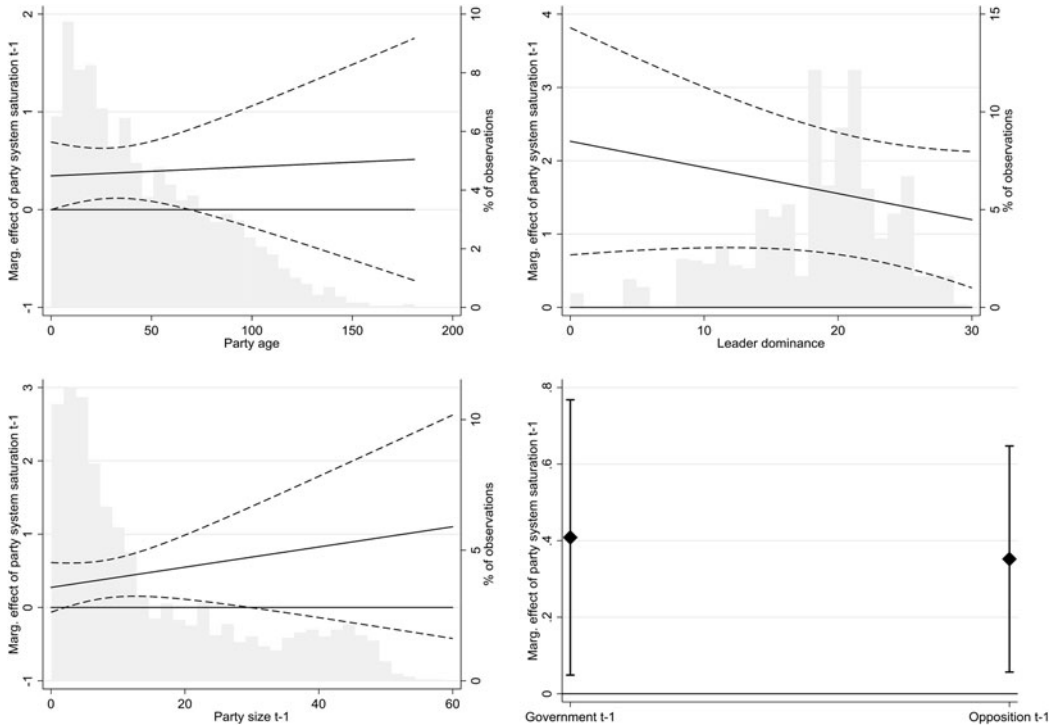
*Note:* the upper-left graph shows the marginal effect of PSS in election  $t - 1$  on programmatic nicheness at  $t$  ( $y$ -axis) for parties with a niche and mainstream profile at  $t - 1$  ( $x$ -axis). The remaining graphs show how these effects are conditioned by party age (upper centre), leader dominance (upper right), party size (bottom left) and opposition status (bottom centre). 95 per cent CI.

In Models 3 to 5, we test whether this effect is conditioned by party age (Model 3), size (Model 4) or opposition status (Model 5). Model 3 provides evidence that PSS and party age interact (log odds = 0.009,  $p < 0.05$ ). Figure 5 (upper left) shows that the marginal effect is positive and statistically significant for parties aged 65 or older. Initially we expected that older parties should be less likely to merge (Hypothesis 7a), because organizational inertia increases with age (Hannan and Freeman 1984). As parties age, however, they also develop more and deeper exchange relations with other parties (Hannan and Freeman 1984). Since mergers require high levels of trust (Mair 1990), younger parties may be less attractive to merge with given greater uncertainty as to how they will behave. Moreover, it is more costly to leave behind organizations in which members and donors have invested over a long period of time (Hannan and Freeman 1984). Hence, older parties may be more inclined to see a merger as a last resort to avoid total disappearance than younger parties with fewer sunk costs.

Regarding the controls, there is evidence that younger parties (Models 2, 4 and 5), opposition parties (Models 2 and 3) and parties with more alliance experience (Models 2, 3 and 5) have a higher proclivity to merge. It is impossible to combine the Firth method for rare-event analysis with nested observations, yet in Appendix Table A17 we reach the same conclusions if we specify multilevel models.

### Evaluating the Inertia Hypothesis (Hypothesis 4)

In line with organizational ecology’s inertia claim, *on average*, parties tend *not* to adapt to PSS by changing their core. Mainstream parties do not increase their nicheness (Hypothesis 1) and parties do not merge with other parties (Hypothesis 3). Our non-findings on Hypothesis 1 hold for



**Figure 4.** Marginal effects of PSS on alliance formation

Note: the figures depict the marginal effects of PSS in election  $t - 1$  on whether a non-alliance member at  $t - 1$  will enter an alliance at  $t$  (y-axis) for increasing values of party age (upper left), leader dominance (upper right), party size (bottom left) and opposition status (bottom right). 95 per cent CI.

all moderating conditions, while for Hypothesis 3 there is evidence that a relatively small share of older parties will merge. However, given that parties do not merge, on average, we conclude that they are structurally inert regarding changes that would affect their identity. In contrast, they do adapt by allying with other parties (Hypothesis 2). Doing so, they avoid core changes in ideology and organization, but rather revert to peripheral adaptation that leaves both intact. In all, our findings fully accord with Hypothesis 4.

### Sensitivity Analyses

We also carried out ten robustness tests, discussed in the Appendix, all of which support our conclusions. We asserted that our conclusions hold against alternative indicators of PSS, nicheness, moderating variables and nesting structures. As a substitute for nicheness strategies, we also confirmed that parties fail to increase the clarity of their left–right position when PSS increases.

### Conclusion and discussion

This study examines whether political parties adapt to PSS. This is important, given that previous research has found that PSS increases party exit (Lowery et al. 2013; van de Wardt, Berkhout, and Vermeulen 2016). A stringent question is therefore whether parties also adapt to this environmental force. Our empirical analyses span all democratic post-war elections in twenty-one Western democracies until 2011, revealing that parties only adapt by being likelier to move into alliances when PSS increases and moving out when PSS decreases. In turn, there is no evidence that mainstream parties increase their nicheness, while only a small segment of older

**Table 3.** Merger Hypothesis

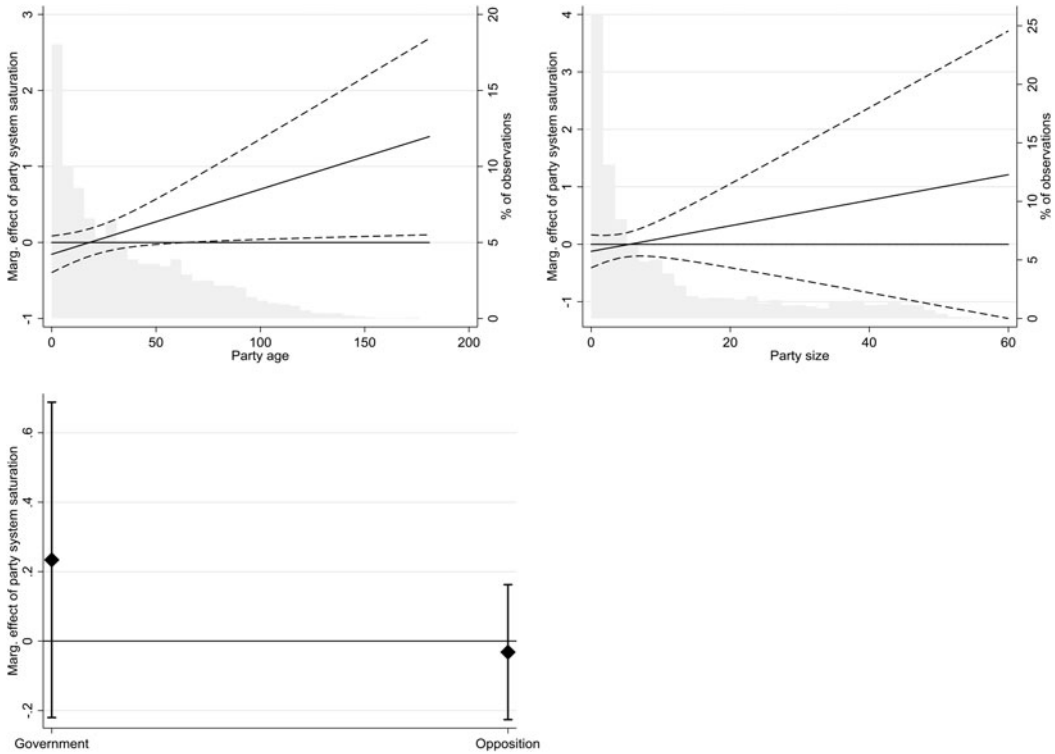
	Model 1	Model 2	Model 3	Model 4	Model 5
Party system saturation (PSS) <sub>t</sub>	0.161 (0.217)	-0.001 (0.092)	-0.155 (0.123)	-0.123 (0.146)	0.234 (0.232)
Party age <sub>t</sub>	-0.009 (0.011)	-0.016*** (0.006)	-0.020*** (0.007)	-0.017** (0.007)	-0.016*** (0.006)
PSS <sub>t</sub> × Party age <sub>t</sub>			0.009** (0.004)		
Size <sub>t</sub>				-0.094** (0.038)	
PSS <sub>t</sub> × Size <sub>t</sub>				0.022 (0.023)	
Opposition <sub>t</sub> (RC: Government)	0.599 (1.013)	1.301** (0.604)	1.274** (0.605)	1.013 (0.731)	1.464** (0.656)
PSS <sub>t</sub> × Opposition <sub>t</sub>					-0.266 (0.251)
No representation <sub>t</sub>	2.223*** (0.675)	0.166 (0.333)	0.175 (0.334)	-0.052 (0.372)	0.161 (0.333)
Alliance experience <sub>t</sub>	0.752 (1.085)	1.356*** (0.358)	1.429*** (0.357)	0.644 (0.587)	1.349*** (0.358)
Government experience <sub>t</sub>	0.333 (1.373)	0.435 (0.663)	0.382 (0.670)	1.513* (0.828)	0.440 (0.663)
Advantage ratio <sub>t</sub>	0.249* (0.139)				
Left-right distance <sub>t</sub>	-0.045 (0.174)				
Registration costs <sub>t</sub>	0.145 (2.412)				
Party financing <sub>t</sub>	0.183 (0.613)				
Petition (logged) <sub>t</sub>	-0.092 (0.170)				
Constant	-5.284*** (1.249)	-4.843*** (0.645)	-4.762*** (0.645)	-4.214*** (0.783)	-4.996*** (0.694)
McFadden's R <sup>2</sup>	0.16	0.061	0.069	0.08	0.062
BIC	185.434	561.867	554.956	442.607	566.167
N	1,472	3,008	3,008	2,811	3,008

Note: penalized likelihood estimates (Firth Method) for rare event data explaining whether a party will have merged at  $t + 1$ . The coefficients are logged odds. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  (two-tailed)

parties merges. This pattern confirms the Inertia Hypothesis (Hypothesis 4) and fully aligns with organization ecology's predictions of relative and structural inertia.

Our results have important implications for the literature on party (system) change and models of electoral competition. With respect to the party (system) change literature (Harmel and Janda 1994; Katz and Mair 1995), our non-findings on ideological adaptation and the propensity of mergers support organizational ecology's assumption of inertia. Studies on party change are thus well advised to distinguish between different types of change, considering that parties may resist changes touching on their ideological and organizational core. For the literature on party system change (Katz and Mair 1995), these inertial forces suggest that party entry and exit may be a more important mechanism behind the renewal of party systems than adaptation by existing parties (see also Hooghe and Marks 2018).

With respect to models of electoral competition, our non-findings on ideological adaptation reveal parties' limited capacity to adapt to their environments. In contrast with models positing full information and utility-maximizing parties (for example, De Sio and Weber 2014; Downs 1957; Enelow and Hinich 1984; Meguid 2008), mainstream parties do not engage in ideological differentiation when PSS increases even though this may bring about their demise (van de Wardt, Berkhout, and Vermeulen 2016). This suggests that models – spatial as well as saliency based –



**Figure 5.** Marginal effects of PSS on mergers

Note: the figures depict the marginal effects of PSS in election  $t$  on whether parties will merge at  $t+1$  (y-axis) for increasing values of party age (upper left), size (upper right) and opposition status (bottom left). 95 per cent CI.

assuming uncertainty, boundedly rational parties and reliance on proxies (Bendor et al. 2011; Budge 1994) may be better equipped to explain and predict whether and how parties adapt.

We see a clear parallel between these models and organizational ecology. The argument that parties operate in highly uncertain environments, where ideology serves as a lens with which to interpret and react to this uncertain world (Budge 1994), echoes the idea of structural inertia. That is, ideologies set the (limited) parameters within which party change is possible. In turn, the idea that parties use proxies instead of directly adapting to their environments (Bendor et al. 2011; Budge 1994) explains relative inertia. The use of proxies implies delayed adaptation, meaning that by the time the party has changed, the environment might have done the same.

This study also raises questions for further research. One is to evaluate other reactions to PSS. Moreover, our theoretical framework contrasts organizational ecology with predictions from the rational choice literature on party positioning, coalition formation and mergers. Based on a careful literature review, we argue that nicheness strategies, electoral alliances and merging are rational responses. However, each of these are under-researched topics; PSS is a new concept and the game-theoretic literature that we mainly use to motivate the Nicheness Hypothesis requires strong assumptions and is unable to make crisp equilibrium predictions (Laver 2005). Thus, while we can give a convincing answer to the question of *whether* parties will adapt in response to PSS (that is, not by making core changes), more research is needed on *how* rational parties should adapt. Nonetheless, the bottom line of the studies motivating Hypotheses 1–3 is that rational parties should – and will – adapt to their environments rather than remain structurally inert (for instance, Adams and Somer-Topcu 2009; Cox 1990a; Kitschelt 1994; Merrill

iii and Adams 2002; Golder 2005; Golder 2006). Therefore, we found it fruitful to contrast these studies against organizational ecology's proposition of core change resistance.

With respect to societal implications, the positive side of our limited evidence in favour of adaptation is that stability may increase parties' perceived reliability and voters' clarity of party platforms. However, regarding societal concerns about increasing electoral fragmentation, parties will only reduce voter complexity by entering alliances. Parties will not merge; nor will poorly differentiated parties mime new niches.

**Supplementary material.** Data replication sets are available in Harvard Dataverse at: <https://doi.org/10.7910/DVN/R2X0VR> and online appendices at: <http://doi.org/10.1017/S0007123419000152>.

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