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The Persistence of Memory: Evidence that Perceptions of Support Parties Update Gradually

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ABSTRACT

Previous research has demonstrated that citizens use heuristics in their ideological perceptions of the placement of governing partners. Yet what about the perceptions after the government termination from non-government support parties? To what extent is updating evident and is there heterogeneity in the response? We examine these questions using a Spanish Survey Panel over 6 months in 2018–2019 after the termination of the Rajoy II government. We demonstrate that updating prior beliefs tend to be conservative, but that greater and stronger informational signals can lead respondents to alter their perceptions. Significant updating can be found with time, among those more politically knowledgeable, and in regions not governed by the previously nationally cooperating partners. Our results have implications for those interested in party perceptions and consequences of government cooperation – in particular supporting party relationships.

KEYWORDS

Spain; support parties; party perceptions

1. Introduction

When talking about cooperation between parties, coalition governments are usually the first thing that comes to mind. In a coalition government, two or more parties join forces in order to influence public policy and share governmental office (Strøm et al., 2008). It has been well established that perceptions of parties that cooperate in government are correlated since citizens rely on such coalition heuristics when placing parties on a left-right scale: Some argue they are perceived to shift in parallel (Bernardi & Adams, 2019) while others argue that they converge (Fortunato & Adams, 2015). Recent research has now established that such associations may also be evident with support parties (Bergman et al., 2024). Support parties are parties that are not officially part of the government (i.e. they did not obtain governmental offices) but are supporting the government in the legislature (Strøm, 1990). Hence, there might not only be a coalition heuristic, but also a more general governance heuristic for such support relationships. We go further than these previous studies to

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suggest that the perceptions of parties that jointly support governance need not end at the termination of a government and that people are likely to still rely on governance heuristics¹ after the termination of a governing cabinet.

Our key argument is that as belief updating tends to be conservative and subject to confirmation bias (Coutts, 2019): individuals continue to ideologically associate formerly governing parties with one with one another. The ideological placement of parties and the effects of association with other parties is crucial to theories of party accountability, forming the basis for literatures on party responsiveness (Adams, 2012; Adams & Somer-Topcu, 2009) and economic voting (Duch & Stevenson, 2008), for example.

Should memories of governance persist, we first argue that the strength of the connection between the parties should decrease the longer it has been since the parties have cooperated, as individuals will more likely be exposed to information that previously cooperating parties might no longer be associated: a broad set of counterfactual belief updates is able to weaken previously held beliefs (Coutts, 2019). Given this informational argument, we also argue that political knowledge could weaken the association of formerly governing parties. Another key factor would then be continued information of co-governance by these previously nationally governing parties. Should a regional-level government composition parallel that of the previous national governing constellation, individuals might continue to receive information through the media or regional-level policy that these parties continue to be associated with one another.

To test these arguments, we take advantage of a panel survey that occurred in Spain 5 months after the termination of a government where two parties were cooperating. We examine individual-level heterogeneity in the ideological association of these previously cooperating parties with one another. We find that in general, individuals *do* continue to associate these previously cooperating parties with one another, even without a formal coalition arrangement and when parties seek to distance themselves from one another. We find support for the arguments presented above with heterogeneity related to the time since government termination, political knowledge, and region of residence. These findings have implications for parties considering governing arrangements, in that even after the termination of cooperation, individuals will continue to associate the parties with one another ideologically.

Studying what influences the perceptions of parties by (potential) voters is important for several reasons. It might be the case that even though coalition or support parties are trying to differentiate themselves from the partners (Müller, 2024; Nonnemacher & Spoon, 2023; Sagarzazu & Klüver, 2017), these efforts might have limited success if associations remain intact even after the end of their governing arrangement. Additionally, if the perceptions of parties are biased due to previous government arrangements, then voters might not be able to make a voting decision that maximises their potential policy-related benefits (Downs, 1957). Analysing the reasons for (mis)perceptions of parties, especially due to previous governing cooperations, is therefore of utmost importance.

The paper is structured as follows. In the next part, we review the literature and present our theoretical argument as well as our hypotheses. Next, we discuss how we go about testing our hypotheses in the research design section. This is followed by the analysis section where we present our statistical models and then conclude with a broader discussion.

2. Literature Review and Hypotheses

There is now a broad set of literature that has established that parties that govern together are not only perceived to be closer together ideologically but that this connection also has implications for how citizens perceive shifts of these parties: respondents use a ‘coalition heuristic’ when they are asked to locate parties in ideological and governing coalition partners perceived to be closer together space (Fortunato & Adams, 2015; Fortunato & Stevenson, 2013; Hjermitsev et al., 2024). PM parties serve as ‘marker parties’ to which citizens perceive junior partners as closer to (Fortunato & Adams, 2015) or dynamically shifting with (Bernardi & Adams, 2019), while the converse of PM perceptions or opposition perceptions are not as easily detected statistically. Hjermitsev et al. (2024) have further demonstrated that parties are perceived closer together if they govern together at the regional level.

There is now also evidence that a coalition heuristic is not only measurable for junior coalition partners but also for support parties. When offering their legislative or investiture support to a minority government, support parties do not formerly hold any cabinet posts, but are perceived to have policy influence (Tromborg et al., 2019). Similar to junior partners, citizens perceive support parties to shift with the PM party (Bergman et al., 2024). Citizens are receiving informational signals that these cooperating parties have some form of policy association and employ governance heuristic when asked to place these parties in ideological space. Even suggestions of potential party cooperation can alters voter’s ideological perceptions of parties (Falcó-Gimeno & Muñoz, 2017).

What most of these studies are overlooking, though, is the influence of time. To be more specific, Bernardi and Adams (2019), for instance, take into account (Table S12) whether there is a national election in the year when respondents are surveyed, but make no argument on this point. Similarly, Fortunato and Stevenson suggest the need to control for the effect of partisan familiarity – historical government cooperation between two parties – but also make no argument about this history. That said, the effect of previous cooperation for parties jointly in opposition, as compared to those governing together, is stronger, which is suggestive that respondents still associate previous governing parties together, even if currently in opposition (2013, p. 473). We build on this empirical finding to drive a theoretically motivated and empirically detectable persistence of memory.

With persistence of memory, we refer to a situation in which the parties that have been previously cooperating in government no longer share governing responsibility at the time of the survey. Drawing on literature from belief updating, we can assume that voters have created some association between these parties when they were in government. Following the logic of Bayes’ rule, their current (posterior) belief will be a function of this prior belief and the integration of new evidence.

Previous research has demonstrated where citizens may form such priors from: they are able to identify that coalition partners and support parties have stronger influence on policy outcomes than opposition members (Tromborg et al., 2019) and that parties that indeed are in coalition or supporting relationships² are seen as been more cooperative than parties that do not work jointly on legislation, especially by those most attentive to the media (Santoso et al., 2023).

This belief has lead voters to dynamically perceive coalition and support parties (Bernardi & Adams, 2019) to be shifting parallel to the perceived ideological shift of the prime ministerial party. A similar belief may be driving respondents to perceive parties in coalition to be ideologically closer than objective measures may suggest (Fortunato & Adams, 2015; Fortunato & Stevenson, 2013). These later findings are static in nature, and are not our primary concern here, though we do empirically test a dynamic version of this theory later in the paper in section 5.

Previous research on perceptions of party shifts has also identified strong priors, as voters do not pick up immediately when parties change their manifestos or their parliamentary behaviour. For instance, Adams and Somer-Topcu (2009) find that the effect of moderating the left-right position on election performance is only significant with a time lag. Or, in other words, moderating the left-right position between election t and election $t-1$ is not beneficial but moderating the left-right position between election $t-1$ and election $t-2$ will lead to vote gains at election t .

The, mainly experimental, literature on ‘belief updating’ has also identified such detectable lags in posterior updating. On political matters especially, respondents are reluctant to update their beliefs (Su, 2022). Perhaps due to (politically) motivated confirmation bias (Su, 2022), citizens overweight signals that affirm their beliefs and discount those that run counter (Coutts, 2019), which results in updating of perceptions to be ‘conservative’. When respondents are subject to information that challenges preexisting beliefs, they tend to discredit or reject this new information (Su, 2022).

Relating this back to the literature on party perceptions, governing heuristics are not only cheap and easily available (Fortunato & Stevenson, 2013) but should also be sticky in the sense that voters should update them only conservatively and not immediately forget previous information. Such strong priors should be detectable, then, even after parties have stopped cooperating and could be reinforced through confirmation bias, in seeking out information that such parties are in joint opposition cooperating in parliamentary votes, govern in subnational regions, or are portrayed as both countering the government in the media.

Hence, the main hypothesis in our paper reads as follows:

H1: Previously cooperating parties are still perceived to shift in parallel, even though their cooperation has ended.

Potential moderators for our main hypothesis derive from known asymmetries in updating beliefs. We distinguish between three potential moderators of previous information: time, political knowledge, and multilevel governing compositions.

First, one potential moderator behind the fact that voters still perceive parallel shifts, even after parties no longer govern together, is time. If we find support for hypothesis 1, then one potential explanation could be that citizens have not received enough informational signals to dissociate the parties; or, in other words, that memories fade but with some time. While we do not have a specific time frame in mind, such countervailing dissociating signals could include a new government establishing itself in office and the subsequent media coverage of such events, or active opposition to each other as new elections draw closer. Vote-seeking coalition partners need to differentiate themselves as elections approach to create distinct profiles (Sagarzazu & Klüver, 2017). Müller and König (2021) have also identified patterns of reduced

cooperation in the case of (Swedish) support parties as new elections approach. Over time, then, parties that previously governed together might pursue different strategies or campaign against one another in elections, which should produce negative signals counter to the prior of cooperation and to fading memories. Accordingly, our first moderation hypothesis reads:

H1a: The longer the time since the dissolution of the government, the weaker the perceived parallel shift.³

Hypothesis 1a can also help us test one alternative explanation for a persistent governance heuristic. For instance, we might find support for hypothesis 1 but only because the previously cooperating parties are now in opposition together. Hence, we might not find a memory effect of previous governing cooperation, but citizens might pick up on the previous government parties now cooperating while in opposition. If that were the case, however, we would not expect to find support for hypothesis 1a since we should not observe a decline in the memory if respondents primary signal is party cooperation while in opposition.

We now turn to a potential individual-level moderator for our main effect: political knowledge. Those who are more politically knowledgeable are more politically engaged and therefore have more information about governing arrangements, such as who is cooperating with whom (Santoso et al., 2023) and when. Those with higher levels of political knowledge are more likely to be attentive to contemporary political events and thus should update quicker and be better able to distinguish between the two parties. Experimental research has demonstrated just that, as the more knowledgeable are not associated with confirmation-biased processing (Tappin et al., 2020): findings in line with previous studies noting that voters with higher levels of sophistication are less likely to rely on coalition heuristics when placing parties ideologically (Fortunato & Adams, 2015; Fortunato & Stevenson, 2013).

H1b: The perceived parallel shift is lower for citizens with higher levels of political knowledge.

Finally, we argue that the institutional configuration of a country importantly influences the perceived shift of previously governing parties. More specifically, we posit that the (non-) overlapping government configurations at the regional and the national level have a moderating effect on the perception of parties.⁴ People living in federal countries are confronted with at least two government signals: those at the national level and those at the regional level. In federal systems, where cooperation between the two levels is needed (Thorlakson, 2017) it might be difficult for individuals to assign responsibility to one specific level of government (Rodden & Wibbels, 2011) as they are confronted with decisions made by both the national and regional levels in their everyday life. However, due to familiarity of cooperation at the national level, a congruent relationship might form at the regional level (Bäck et al., 2013). Those living in regions governed by a similar governing arrangement tend to receive greater fiscal transfers from the centre and thus have a stronger memory of this parallel arrangement (Kleider et al., 2018).

More recently, Hjermitslev et al. (2024) have shown that regional government participation leads to parties being perceived to be closer to each other at the national level. Previous research has found that parties at the regional level do not only include regional-

level policy competencies in their manifestos or coalition agreements, but also issues related to national-level competences (Gross & Krauss, 2021), especially if those parties are participating in governance at the national level (Gross et al., 2023). As such, voters will be confronted with regional governments and local media reporting on national-level policies, which in turn might strengthen the association between formerly governing parties, and result in heterogeneous ‘belief polarization’ (Lord et al., 1979) among different regions.

If those parties, that were previously cooperating at the national level, are still in a governing relationship at the regional level, then citizens might still be exposed to regular information about their cooperation. Negative signals are more likely to result in updating than positive ones (Coutts, 2019), which means those continuing to receive affirmative signals in regions still governed by those formerly at the national level would be less likely to update their belief in parallel shifts. They also might have been exposed to greater values on their prior belief of these associating parties and therefore be the least likely to observe updating.

Hence, hypothesis 1c reads as follows:

H1c: If the former national government parties are still cooperating at the regional level, the effect of their perceived parallel shift is stronger as compared to regions with governing arrangements that duplicate the contemporary national level.

Adding to that, we argue that the presence of regional parties in regional government also importantly influences the governance heuristic. Within such regions, national matters of political competition are of secondary importance (Belous & Tarasov, 2022). Should then regional parties be in government, the salience of the national level left-right policies and parties is less than regions in which national state-wide parties dominate. In line with previous experimental research (Li & Wagner, 2020), we would expect these ‘ambiguous’ individuals to update as if they were ‘uninformed’ or become even more polarised based on prior beliefs (Su, 2022), which would mean that citizens in regions dominated by regional parties would update less than those governed by nationally dominant parties. Accordingly, we hypothesise the following:

H1d: If there are regional parties in government at the regional level, the effect of the perceived shift is stronger as compared to regions with governing arrangements that duplicate the contemporary national level.

3. Case Selection, Data and Operationalisation

While other studies examining the correlation between cooperating parties opt for examining aggregate perceived positions of parties at different points in time (Bernardi & Adams, 2019; Fortunato & Adams, 2015), we instead opt for a panel study, whereby the same respondents were asked about their perception of a party’s ideology at multiple points in time. In order to test the hypotheses we derived above, we rely on the Spanish E-Dem panel, which had 4 waves of data on a representative sample of Spanish respondents, and focuses on ideological dynamics of the Spanish political landscape at that time (Torcal et al., 2020). Panellists were first interviewed in a 14-day period around November 1, 2018 and then again 97 days later in February 2019. A third wave was conducted 60 days later in April 2019 and a final wave in May 2019. For the first three waves

they were asked to locate political parties on a left-right spectrum. Such a dataset is valuable as, given the multi-wave format, we are able to test whether the effects of previous party cooperation varies over time.

On June 1st, 2018 a no-confidence vote ended the center-right Rajoy II cabinet, which was a minority cabinet of the People's Party (PP) supported by Citizens [Ciudadanos] (Cs). Ciudadanos had supported the investiture of the Rajoy cabinet as well as voted against the no-confidence motion. They also frequently collaborated at the regional level, with Ciudadanos providing support to PP governments in Andalusia, Madrid, Castile and Leon, Murcia, and La Rioja. Hence, it was quite obvious that these two parties were cooperating, even though Ciudadanos was not an official part of the government.

The Spanish case can be considered crucial in determining whether cooperative governance heuristics persist after the termination of a government. Once out of power the two parties did not jointly campaign in the subsequent elections. During the period of the E-Dem dataset, Spain had an election: 28 April 2019. According to data released by the Comparative Campaign Dynamics Dataset, which includes details of how parties discussed one another as captured through mainstream media sources, during the campaign, PP made 35 statements about Cs, 85% of which were negative, and Cs made 41 statements about PP, 88% of which are negative (Debus et al., 2022). Given this countervailing source of information, we would consider the Spanish case as a hard test: in that campaign effects should work counter to the remembrance of past cooperation in government.

That said, other aspects of the Spanish case crucially test hypotheses predicted by foundational literature. The Rajoy II cabinet was the *first* time in post-war Spanish democratic history that two national (as opposed to regional) parties were cooperating at the national level. Fortunato and Adams (2015) suggest that one is most likely to find evidence of the use of heuristics if such historical familiarity is low and there is a large difference in party sizes: PP held 134 seats compared to Cs's 32. Furthermore, there was a complete turnover in national government: neither PP nor Cs continued in government. They were replaced by the Socialist Party (PSOE) supported by the far-left Podemos. Thus, perceptions of neither of the former government's cooperating parties is potentially contaminated by subsequent national cooperating circumstances.

Furthermore, Spaniards might have been unfamiliar with Cs and this cooperation might have served as a strong introductory signal for those uninformed with this party's positions: a party now crucial to the prevention of cabinet dissolution (Bernardi & Adams, 2019). Without other informational cues by which to assess Cs and having been elected in only 20 out of 52 multi-member constituencies, this party that might have appeared on the 'outskirts of policy-making' (Fortunato & Adams, 2015) and for many was now associated nationally with the PP.

Yet, while there was a formal agreement, Cs did not serve in cabinet during the Rajoy II government. Formal cabinet cooperation has been the criteria used by the aforementioned studies examining the coalition heuristic. The cooperative governance heuristic might need a stronger signal, such as cabinet participation, as opposed to simple legislative cooperation. Perhaps then only the most political knowledgeable would have been aware of such cooperation. Furthermore, much of the politics surrounding the Rajoy

II cabinet was not related to standard policy-making. Instead, the Catalan crisis and Rajoy's Popular Party's corruption scandals and investigations dominated media coverage (Delgado et al., 2018). Ciudadanos continued to support the government in these actions, even opposing the confidence motion against the government that was called over allegations of corruption.

In the E-Dem panel data set, respondents were asked to place parties on a 0–10 left-right ideological scale. We operationalise our dependent variable, *shift Cs*, as the perceived shift in Cs placement between wave *t* and *t*-1. Theoretically, we argue that citizens continue to associate former parties that have collaborated, and as such a shift in the former support party Cs can be explained by a shift in the former PM party, PP. Accordingly, our main independent variable, *shift PP*, is the perceived shift in PP between wave *t* and *t*-1.

Originally, the unit of observation was an individual, meaning that the data format was wide. However, we transformed the data in a way that differences between each panel are now a new observation. Accordingly, we have to account for this repeated sampling of the same individuals and the fact that individuals are sampled within regional units which correspond to our independent variables. We do so by relying on random-effects at the individual level in order to not restrict ourselves to individuals who varied on independent variables between waves. We also include random-effects at the regional level to account for regional variables (such as media coverage or effective number of parties) that we do not directly account for in our model but might affect perceived ideological shifts. Observations in our dataset are thus respondent-wave combinations.

H1a suggests that there is a declining association between parties that formerly cooperated over time. As such, to test H1a, we interact a respondent's perceived PP shift with the *wave* number, expecting there to be a negative coefficient. In order to test H1b, we need information on political knowledge. As there are no direct questions on this in the E-Dem dataset, we follow what previous scholars have done and create a measure based on 'correct relative placement of parties on a left-right scale' (Harteveld & Wagner, 2023, p. 754), operationalised here as a 0–3 scale with a point for placing Podemos to the left of PSOE and a point each for placing Cs and PP to the right of PSOE.

H1c suggests that those who are living in regions still governed by the former allies will continue to rely upon the former national heuristic as they are still exposed to the cooperation on a regional level. H1d suggests those who are living in regions governed by regional parties receive less countervailing information and continue to rely upon the former national heuristics. In order to evaluate this hypothesis, we interact the regional governing structure with their perceived PP shift, expecting there to be a positive coefficient for those in regions in which PP and Cs continue to support one another (*PP-Cs Cooperation Region*) and a positive coefficient for those in regions governed by regional parties (*Regional Party President*) as compared to those governed by the national arrangement (*PSOE-Podemos Cooperation Region*). In these models, the base region of comparison would be to those regions governed by the current government of the Socialist Party supported by Podemos. In the models testing other hypotheses, we retain the constituent interaction variables as control variables.

All models also control for the respondent's own shift in position and the previous positions of both PP and Cs. The former (*shift respondent*) tries to capture shifts in

relative position. If a voter shifts to the left, but parties remain stable, they might perceive parties moving rightward. The previous ideological perception variables (*Position PP*; *Position Cs*) of previous perceived positions account for any potential regressing to the mean effects. So, for example, if a voter previously momentarily perceived Cs as being extremely left (right), then they might automatically adjust to their equilibrium belief and thus perceive a rightward (leftward) shift just based off this recalibration. We also include the perceived *PSOE shifts* (the current prime minister) as previous research has suggested that opposition parties may also be perceived to be shifting in the direction of the current prime minister (Bernardi & Adams, 2019), in this way, we are also controlling for respondents believing that all parties have shifted in parallel so as to isolate the effect of *PPshift*.

4. Results

Figure 1 presents the distribution of the key independent and dependent variable. A plurality of respondents perceive no shift in PP on the left-right dimension between waves, which is also the modal response of perceptions of Cs. After no response, believing both to shift the left by one point is most common, following by shifting one to the right. Next would be shifting two to the left and then two to the right. These distributions also provide some evidence that respondents do not tend to think that all parties are shifting leftward or rightward, even if their manifestos suggest otherwise,⁵ which follows from previous work that voters do not respond to such policy statements (Adams et al., 2011). There is no a priori reason that suggests the same voters who perceived PP shifting left (right) also perceived Cs shifting left (right). However, our argument suggests that the

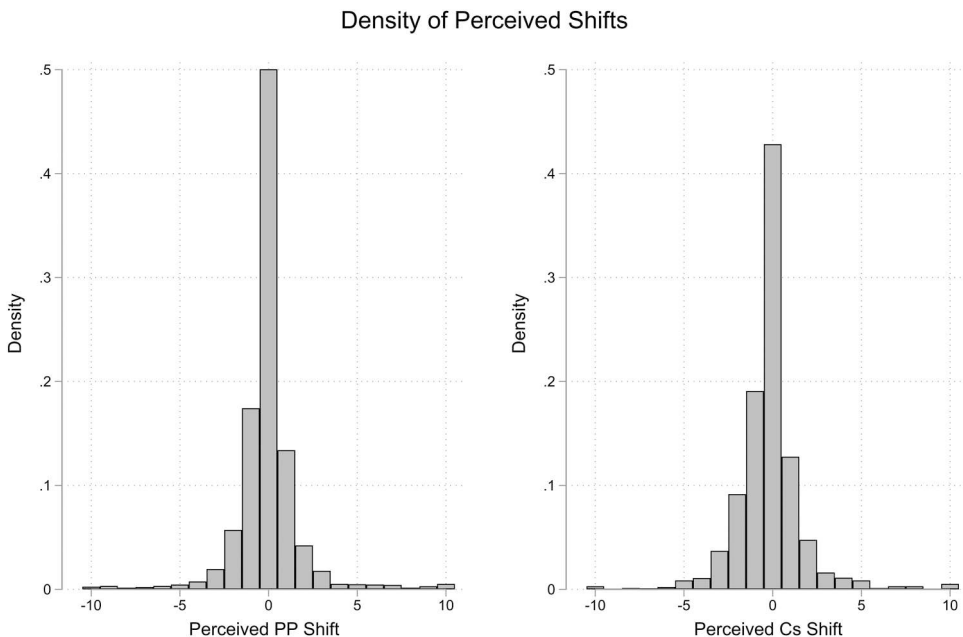


Figure 1. Distribution plots of key variables.

Table 1. Predicting perceived shifts in Cs.

DV: Shift Cs	Model 1	Model 2	Model 3	Model 4	Model 5
Shift PP	0.510*** (0.051)	0.658*** (0.054)	0.642*** (0.081)	0.415*** (0.047)	0.683*** (0.077)
Shift PSOE	0.027 (0.024)	0.029 (0.022)	0.033 (0.022)	0.027 (0.022)	0.033* (0.019)
Wave	-0.057 (0.040)	-0.060 (0.040)	-0.050 (0.041)	-0.058 (0.040)	-0.050 (0.040)
Knowledge	-0.165*** (0.050)	-0.165*** (0.048)	-0.118*** (0.042)	-0.161*** (0.051)	-0.119*** (0.042)
PID Cs	-0.559*** (0.156)	-0.561*** (0.159)	-0.550*** (0.151)	-0.558*** (0.156)	-0.551*** (0.154)
PID PP	-0.380*** (0.128)	-0.383*** (0.129)	-0.357*** (0.131)	-0.376*** (0.127)	-0.357*** (0.131)
Position PP	0.412*** (0.038)	0.412*** (0.038)	0.426*** (0.039)	0.411*** (0.036)	0.424*** (0.037)
Position Cs	-0.569*** (0.019)	-0.568*** (0.019)	-0.570*** (0.019)	-0.568*** (0.019)	-0.568*** (0.019)
Shift respondent	0.007 (0.018)	0.006 (0.017)	0.005 (0.020)	0.004 (0.018)	0.000 (0.019)
Shift PP * Wave		-0.105*** (0.034)			-0.096*** (0.034)
Shift PP * Knowledge			-0.066* (0.035)		-0.061* (0.034)
PP Cs cooperation reg.					0.030 (0.064)
Regional party President				0.029 (0.066)	0.268** (0.128)
Shift PP * PP Cs coop.				0.268** (0.130)	0.102*** (0.041)
Shift PP * Reg. party.				0.111** (0.046)	0.142** (0.041)
Constant				0.162** (0.064)	0.884** (0.355)
Observations	3004	3004	3004	3004	3004
N (Clusters)	17	17	17	17	17
Log-likelihood	-5328.36	-5321.45	-5317.77	-5315.16	-5300.03

*** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.10$; Clustered standard errors by region in parentheses; Coefficients include random-effects as the regional and individual level.

same respondents who are perceiving PP to shift rightward (leftward) are those who also believe Cs to be shifting rightward (leftward), which we argue is a result of these parties' previous cooperation in national governance.

The results of our multi-level regression analysis are presented in Table 1. The key coefficients as it relates to our variables of interest have been bolded and each column represents one of our hypotheses. The first column is our base model. We test our suggested moderators for hypothesis 1 in the following three models where we introduce the theoretically derived interaction effects.

In model 1, we can see with a positive and statistically coefficient that indeed as respondents perceived PP shifting in one direction, they were also likely to perceive Cs shift in the same direction. So, if someone perceived PP shifting to the right by two points, they perceived Cs also shifting to the right by one point (technically 0.86 points on average when factoring in the constant). If someone perceived PP shifting to the left by two points, then they perceived Cs also shifting to the left by 1.1 points. We visualise this in Figure 2 along with a scatter plot of the distributions⁶ noted in Figure 1. What is visible here is that observations are more common along the positively

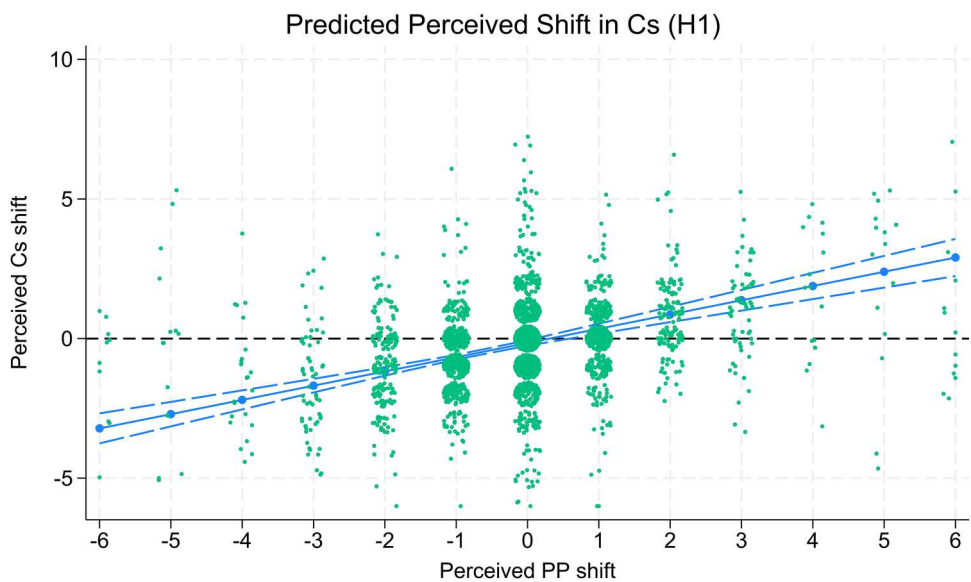


Figure 2. Predicted perceived shift in Cs (H1).

sloping diagonal than negative one, which is the source of the statistical correlation. Key to our hypothesis is that those respondents who perceive a positive (rightward) shift of PP also perceive a positive (rightward) shift in Cs and the converse: those perceiving a negative (leftward) shift of Cs also perceive a negative (leftward) shift in Cs. Hence, model 1 lends support to our first hypothesis.

H1a suggested that over time, informational signals would update beliefs and this association would decrease. We test this hypothesis in model 2. As compared to the

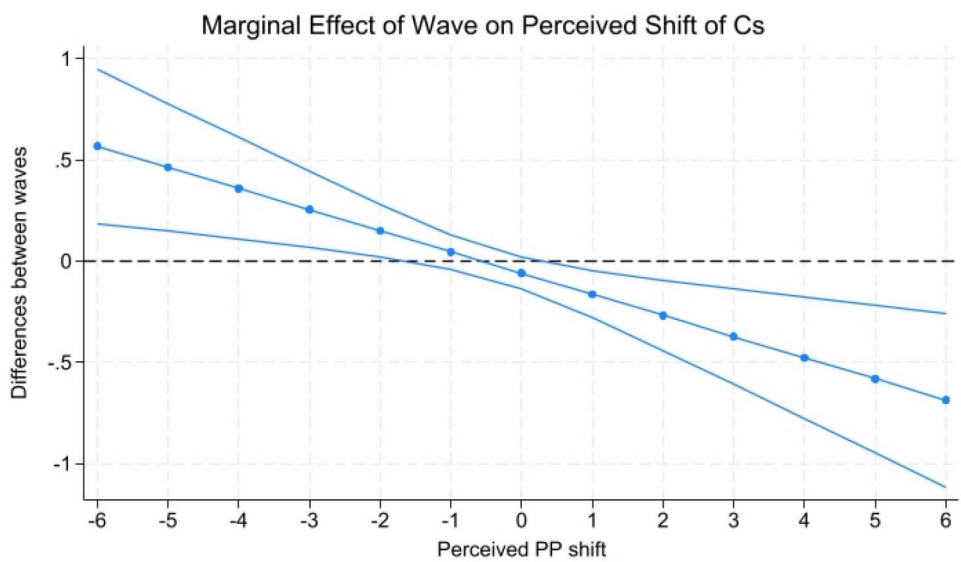


Figure 3. Marginal effects of wave on perceived shift in Cs (H1a).

shift between the first and second wave, the perceived shift between the second and third was weaker by 0.1. This coefficient is in the hypothesised direction and is statistically significant. We demonstrate this marginal effect on [Figure 3](#). We see that with each greater wave, the associated ideological shift between the parties decreases, as the marginal effect is in the opposite direction of the main effects noted on [Figure 2](#). For example, in model 2, imagine a respondent consistently perceived PP to be shifting rightward by one. In between the first and second wave, the respondent would perceive Cs to be shifting rightward by 0.42. Between the next two waves (negative value on [Figure 3](#) for a positive shift of one) the respondent would only perceive Cs to be shifting by 0.26. Next, imagine a respondent consistently perceiving PP to be shifting leftward by two between each wave. Between the first two waves, she would perceive Cs to be shifting leftward by 1.23 and between the next wave (positive value on [Figure 3](#) so more rightward of a shift) only by 1.08.

This would suggest that over time, relying upon the heuristic of previous legislative cooperation weakens, perhaps as respondents become exposed to more alternative sources of information such as new governing arrangements or the aforementioned campaign effects. Overall, then, we find support for hypothesis 1a with results hinting at time as an important explanatory moderator for the persistence of memory.

H1b suggested that those with greater political knowledge would have access to greater informational signals and more strongly update their priors. Similar to the effect of wave, we find a negative effect for greater knowledge (significant at the $p < 0.1$ level). We visualise these effects on [Figure 4](#) comparing those respondents with the lowest knowledge (43% of the sample) to those with the highest (38% of the sample). A statistically significant effect (at the 0.1 level) is visible for those respondents who believed that PP had shifted rightward between waves. The more knowledgeable the individual, the less that the perceived shift in the former supporting party's position is perceived. For example, in comparing individuals who perceived PP to be shifting rightward by two, low

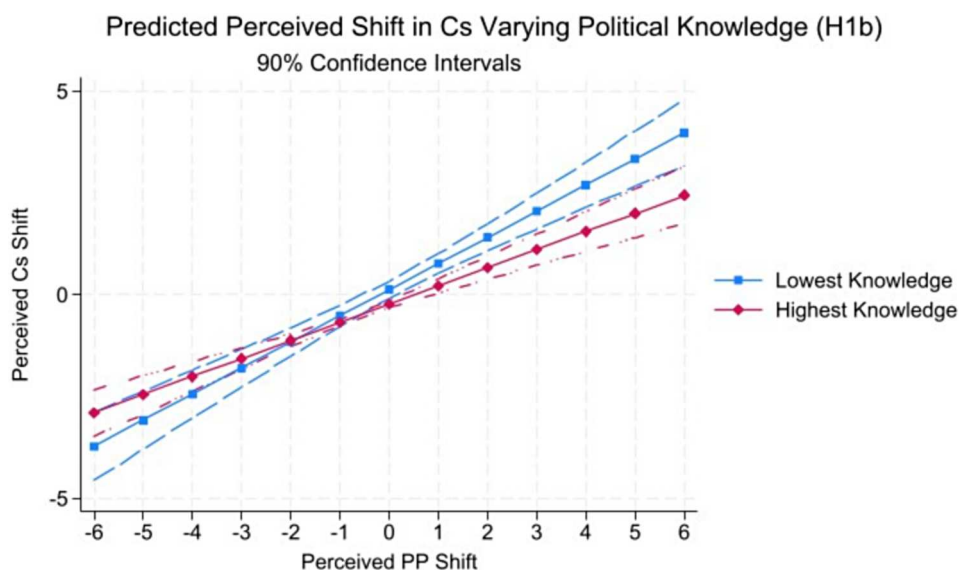


Figure 4. Predicted perceived shift in Cs varying political knowledge (H1b).

knowledge individuals would perceive Cs to have shifted 1.4 on average while high knowledge individuals would have perceived only half of that on average: 0.7. We have argued that these individuals are more likely to be exposed to new sources of information and update their beliefs, which would counter a previous governance heuristic.

Finally, H1c and H1d suggested that regional governance could amplify the reliance upon cooperating governance heuristics. Those living in regions still governed by the former cooperating parties or by regional parties that do not partake in national governance would see a greater level of ideological association than those governed by those with a governing arrangement similar to that of the current national government that replaced the former cooperating partners. The coefficients in model 4 are correctly signed and statistically significant, indicating that those living in regions whereby PP and Cs are continuing to cooperate perceive a 0.11 greater shift between these parties than those living in regions governed by the parties in power at the time of the survey and those governed by regional parties perceive a 0.16 greater shift than those living in regions governed with a parallel administration to the national government. [Figure 5](#) visually depicts these results and follows a similar pattern as [Figure 4](#). On the left panel, one can note regions in which PP and Cs continue to cooperate have a steeper slope, and thus a stronger association between the parties, than those regions in which the currently nationally governing cooperating parties are in power regionally as well. On the right panel, one can note regions in which regional parties govern have a steeper slope, and thus a stronger association between the formally nationally cooperating parties, than those regions in which the currently nationally governing cooperating parties are in power regionally as well.

The final model tests all sub-hypotheses simultaneously and we note that all relevant variables remain significant. We also perform a number of robustness checks in the Appendix. We include an additional model as to whether Cs or PP partisans are quicker or slower to update. While PP and Cs voters see less of an association

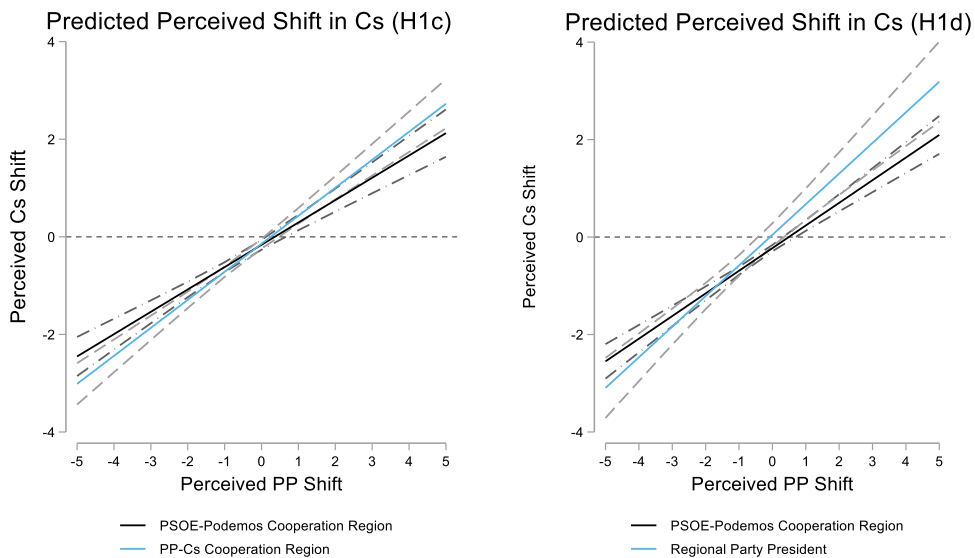


Figure 5. Predicted perceived shifts in Cs varying sub-national governance (H1c & H1d).

between shifts, this interaction does not reach standard levels of statistical significance (Table A.2). For potential concerns about perceptions of all parties shifting in parallel we run a model with only the current prime minister party (PSOE, Spanish Socialist Party) as the key predictor without the inclusion of PPshifts (Appendix Table A.1): the relationship is near null and far from statistically significant. Thus, the only Prime Minister's party that predicts a shift in Cs, is the former one (PP) with whom it cooperated.

We also demonstrate that the persistence of memory is not limited to the left-right dimension. As Field and Hamann (2015, p. 902) note, in the Spanish context, 'the primary dimensions of party competition are the left-right and the center-periphery'. The E-Dem panel also asked respondents their perceptions of party positions on a 0–10 scale on the centralisation–decentralisation dimension ('The Spanish Government should regain its powers' – 'The Autonomous Communities should be able to legislate on major issues in citizens' daily lives'). In Appendix Table A.3 we replicate our primary model replacing all independent variables and controls with relevant placements and shifts on this dimension. The significance of PP shifts predicting parallel shifts in Cs is replicated on this dimension as well. The coefficient on the decentralisation dimension is actually larger than the one on the left-right dimension. This could perhaps be a result of the salience of that dimension during the actions of the Rajoy II cabinet; we leave for future research to determine if issue salience has an impact on this persistence. Regarding potential interaction effects, we find support that partisans of Cs rely less on the governing heuristic. We also examine on Appendix Table A.4 whether PP shifts can predict shifts in PDeCAT (Catalan European Democratic Party) – a party that voted with PP and Cs against investiture of PSOE and sits in the same European Parliament group as Cs but had limited other aspects of supporting the previous government. Of particular note, we see that PP shifts are not statistically significantly associated with PDeCAT. Low knowledge voters are even predicted to perceive PDeCAT and PP shifting in opposite directions. This provides further evidence that an official supporting arrangement would be needed in order for voters to perceive the associated shifts, even among parties with similar ideologies.

5. Divergence

Previous research has demonstrated that while they might not converge (Bernardi & Adams, 2019), respondents perceive that governing parties are perceived to be ideologically closer than objective measures would predict (Fortunato & Adams, 2015; Fortunato & Stevenson, 2013). Lack of convergence can potentially be explained by Non-nemacher and Spoon (2023), who show that junior parties are more likely to defect from the PM party position in roll-call votes at the European Parliament in an attempt to differentiate themselves via media or domestic parliamentary behaviours. Müller (2024) offers more specific evidence that (Swedish) support parties, for example, are more likely to defect from supporting a government agenda towards the end of a term in order to remain distinct in upcoming elections.

Research has not determined whether a convergence relationship exists for support parties, though it has established that governing support parties, like coalition partners, shift in parallel to prime minister parties (Bergman et al., 2024). The aftereffects of

Table 2. Predicting PP-Cs divergence.

DV: Shift in PP-Cs Perceived Distance	
Wave	0.102* (0.059)
PID PP	0.247 (0.158)
PID Cs	0.483*** (0.142)
Knowledge	0.091** (0.043)
Position Cs	0.349*** (0.017)
Position PP	−0.224*** (0.037)
Regional Party President	−0.172 (0.140)
PP-Cs Cooperation Region	−0.008 (0.072)
Shift respondent	0.025* (0.015)
Constant	−1.061*** (0.339)
Observations	3026
N (clusters)	17
Log-likelihood	−5798.69

*** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.10$; Clustered standard errors by region in parentheses.

support party convergence, however, would be theoretically and empirically detectable in the Spanish case. Should the parties have perceptually converged during the previous government, after the termination of their cooperation, the ideological perceptions of the parties should then diverge. The informational signals perceived by voters that would dissociate parties from shifting in parallel should also update beliefs about their ideological distance from one another. Using the same dataset as above, we can explore the perceived distance between these formerly cooperating parties at the respondent-wave level. Aggregating each wave, we find evidence suggestive of divergence between PP and Cs: with a mean differences of 1.31, 1.34, and 1.40 (each having a standard error rounding to 0.04), respectfully, during the first, second, and third waves. Using our variables of interest, Table 2 presents full regression analysis of this perceived divergence. As time goes on ($p < 0.1$), for the more knowledgeable ($p < 0.05$), and for partisans of the Cs ($p < 0.01$), we can see greater levels of perceived left-right divergence after the termination of cooperation, which is further evidence that individuals with these characteristics and exposed to greater informational signals are more likely update their beliefs on the perceived ideological distance between these parties.

6. Discussion & Conclusion

The key takeaway from our analysis is that memories of past party cooperation persist: citizens still perceive parties to be ideologically associated, even after the end of a government at the individual level. Fortunato and Adams (2015) were able to only find such cross-sectional evidence for coalition parties with a large size difference and little history of cooperation. Here we are able to find evidence of the use of heuristics

between a former single-party minority government and the party that provided the government legislative support.

Political psychology has demonstrated that political beliefs are sticky, yet respondents do update their previous beliefs when exposed to new information. Observing a broad set of counterfactual evidence leads to the strongest updating of beliefs (Coutts, 2019). Evidence of perceived shifts weakening over time and parties perceived to be further apart indicates that time is an important explanation for the persistence of memory. Even though the time-period we are analysing here is comparatively short, we can already observe changes in the perceived associations between parties. The more politically knowledgeable are also those who update their beliefs quicker. Furthermore, the institutional setting of a country also could provide negative or positive signals for belief updating. We find that the persistence of memory is weakest if regional governing arrangements at the time of the survey overlap with current national governing arrangements. Each of these conditions suggests that respondents with the strongest informational signals of updated governing arrangements more weakly associate former governing parties with one another. We also then demonstrate this can be detected in these individuals placing formerly cooperating parties further apart ideologically.

While these results are an important first step into analysing the persistence of memory, there are a number of different avenues for future research. Our analysis relied upon panel data from Spain. Concerning potential differences between junior and support parties, due to data availability, we could only analyse perceived shifts between the PM party and a support party. There is reason to believe, though, that such a shift and the lasting memories of cooperation are even stronger for junior coalition partners since these governing arrangements could be more strongly anchored in the minds of the voters. A longer cooperative relationship might have also created a stronger familiarity between the parties (Fortunato & Adams, 2015; Fortunato & Stevenson, 2013), creating perhaps even stronger priors. Conversely, the end of the Rajoy II government was not conflictual. Had it been, perhaps the informational signals of dissociation would have been stronger. Finding other cases to test such persistence of association would enable researchers to determine which contextual situations affect such ongoing perceptions.

Our data was also limited in for how long we could test such memories of previous government cooperation. Would a change in party leader negate such associations? What about a new governing relationship in which one of the former cooperating parties continues to remain in power? The limits and extent of the memory detected above also serves as an avenue for future research. Our focus here lay in the perceived ideological association between parties, yet other forms of association exist such as trust, polarisation, or affect between these partisans could also be analysed in future research.

Notes

1. We diverge from using the terminology of 'coalition heuristic' because in our argument and empirics we do not assume joint cabinet participation.
2. As noted by descriptive results presented in appendix figure 3.3 of Santoso et al. (2023).
3. In the main section of the paper, following Bernardi and Adams (2019), we test for parallel shift. We test for the perceived distance between the parties after the primary analysis.

4. Our argument refers to the regional level only. While the local (and possibly even city) level also has competences, they are not as powerful as the regions in Spain (our empirical case with relevant data availability): Spain is high on the rankings as it relates to Regional Authority (Hooghe et al., 2016) within Europe while only mid-level on local authority measures (Ladner et al., 2019).
5. Appendix figure 1 depicts these manifesto-based positional changes, which is followed by a brief discussion relating these manifesto-based shifts to the perceived shifts analysed here in the main-text.
6. Excluding outliers so the bulk of the data can be more easily viewed.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Competing Interests

The authors report there are no competing interests to declare.

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Appendix

Table A1. Shift PSOE.

DV: Shift Cs	
Shift PSOE	−0.006 (0.034)
Wave	0.015 (0.048)
PID PSOE	0.398*** (0.066)
PID Cs	−0.411** (0.130)
Knowledge	−0.190*** (0.047)
Position Cs	−0.462** (0.021)
Position PSOE	0.082*** (0.017)
Shift respondent	0.028 (0.022)
Constant	3.049*** (0.248)
Observations	3094
N (clusters)	17
Log-likelihood	−5904.269

*** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.10$; Clustered standard errors by region in parentheses.

Table A2. PID moderation.

DV: Shift Cs	
Shift PP	0.520*** (0.052)
Shift PSOE	0.026 (0.023)
PID PP	−0.379*** (0.127)
Shift PP * PID PP	−0.112 (0.112)
Shift PP * PID Cs	−0.044 (0.063)
PID Cs	−0.554*** (0.153)
Wave	−0.058 (0.040)
Knowledge	−0.164*** (0.051)
Position PP	0.520*** (0.052)
Position Cs	−0.570*** (0.0190)
Shift Respondent	0.008 (0.018)
Constant	1.218*** (0.330)
Observations	3004
N (clusters)	17
Log-likelihood	−5325.738

*** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.10$; Clustered standard errors by region in parentheses.

Table A3. Decentralisation.

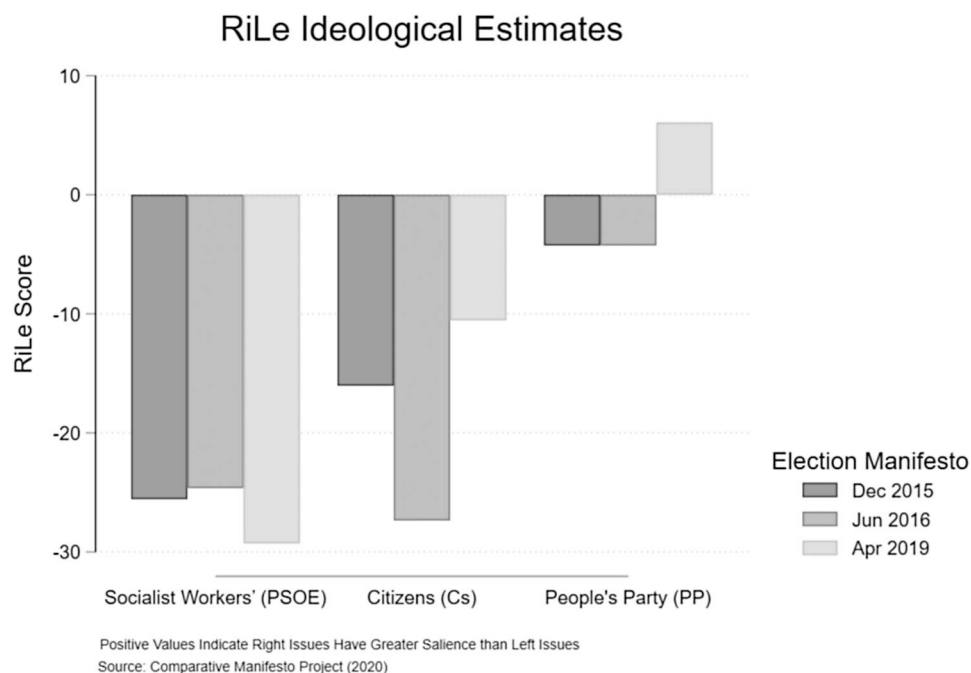
	DV = Cs Shift on Decentralisation				
	Model 1	Model 2	Model 3	Model 4	Model 5
PPDECshift	0.618*** (0.024)	0.611*** (0.038)	0.614*** (0.050)	0.606*** (0.016)	0.592*** (0.060)
PSOEDECshift	0.061*** (0.009)	0.061*** (0.009)	0.061*** (0.009)	0.060*** (0.009)	0.060*** (0.009)
wave	-0.014 (0.039)	-0.015 (0.037)	-0.014 (0.039)	-0.014 (0.039)	-0.015 (0.037)
knowledge	-0.207*** (0.047)	-0.207*** (0.046)	-0.207*** (0.047)	-0.207*** (0.047)	-0.207*** (0.047)
Csvoter	0.138 (0.100)	0.137 (0.099)	0.138 (0.100)	0.136 (0.100)	0.135 (0.099)
PPvoter	0.254** (0.119)	0.254** (0.118)	0.254** (0.119)	0.252** (0.118)	0.252** (0.118)
PPDECposition	0.575*** (0.032)	0.575*** (0.032)	0.575*** (0.032)	0.573*** (0.032)	0.572*** (0.032)
CsDECposition	-0.802*** (0.028)	-0.802*** (0.028)	-0.802*** (0.028)	-0.800*** (0.027)	-0.800*** (0.027)
ownDECshift	0.042*** (0.011)	0.042*** (0.011)	0.042*** (0.011)	0.042*** (0.011)	0.043*** (0.011)
PPDECshift * wave		0.004 (0.017)			0.004 (0.017)
PPDECshift * knowledge			0.002 (0.016)		0.003 (0.016)
PP-Cs Cooperation Region				0.076 (0.088)	0.075 (0.088)
Regional Party President				-0.14 (0.177)	-0.14 (0.178)
PPDECshift * PP-CS Cooperation Reg				0.003 (0.017)	0.003 (0.016)
PPDECshift* Regional Party President				0.037 (0.025)	0.038 (0.024)
Constant	1.312*** (0.145)	1.313*** (0.143)	1.313*** (0.146)	1.325*** (0.157)	1.328*** (0.156)
Observations	3728	3728	3728	3728	3728
Number of Regions	17	17	17	17	17
Log Likelihood	-7587.443	-7587.399	-7587.434	-7585.313	-7585.24

Table A4. Predicting PDeCAT shifts.

PPshift	0.284 (0.202)
PSOEshift	0.137** (0.054)
PDeCATvoter	-0.663 (0.406)
knowledge	0.321* (0.171)
PPvoter	-0.661 (0.749)
PPposition	-0.009 (0.076)
PDeCATposition	-0.367*** (0.039)
ownshift	0.007 (0.067)
wave	-0.13 (0.197)
PPshift * wave	-0.271** (0.108)
PPshift * knowledge	0.128** (0.055)

PPvoter * PPshift	-0.516 (0.407)
PDeCATvoter* PPshift	-0.218 (0.220)
Constant	1.535** (0.733)
Constant	0.719*** (0.034)
Observations	445
Log-Likelihood	-951.318

Appendix Figure: Overtime left-right estimates of party positions in Spain



We plot the estimated left-right positions as compiled by the Comparative Manifesto Project (Volkens et al., 2020) for the election before the cooperation began (2015), the one in which the two parties did cooperate thereafter (2016), and the election occurring at the end of the panel (2019) in Figure 2. Of note is the minimal shift in left-right issue emphasis between the 2015 and 2016 election of the major center-left (PSOE) and center-right (PP) parties. However, before the beginning of our panel and the cooperative agreement between the PP and Cs, you can note the leftward shift of Cs, so much so that it could have been considered more left-issue focused than PSOE on some criteria. PSOE and Cs had even signed a 200-measure cooperative agreement in February of 2016 (Clemente, 2019). That said, between the 2016 and 2019 elections, the cooperating PP and Cs parties both shifted their manifesto issue focus rightward. Compare this to Figure 1, which suggested a relatively leftward or symmetrical distribution of perceived shifts. This supports the findings that voters do not update their party perceptions based on manifestos (Adams et al., 2011) and that shifts in voter ideological perceptions and shifts in manifesto ideological placements are uncorrelated (Adams et al., 2019). Yet our research question is not whether voters accurately perceive shifts in party positions, nor are we claiming manifestos would be the best measure for such objective shifts (Gemenis, 2013).