Marriage of Love or Marriage of Convenience?

The Determinants of Pre-electoral Coalition Formation during the French Fifth Republic 1968-2002

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Abstract

In this paper I investigate whether parties choose a pre-electoral coalition partner because they are close ideologically or because of the electoral strength of the other party. To answer this question I use electoral data from the first round of the French legislative elections from 1968-2002 and I use data from the manifestos of the parties that ran in these elections. First, I build a measure to examine the joint electoral strength of any two parties. Second, I determine the policy distance between the parties using non-linear correspondence analysis. I find that both of these factors increase the odds that a pre-electoral coalition will form between two parties but the two factors do not interact.

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Introduction

In this paper I examine how parties choose their pre-electoral coalition partners in France. In multiparty parliamentary democracies, the government needs the support of a legislative majority. Normally, if no party wins the majority of the seats, smaller parties that competed against each other in the elections form a post-electoral coalition to govern. However, sometimes parties choose to form a coalition even to contest the elections. In France, pre-electoral coalitions have run in every election since the beginning of the Fifth Republic.

In this paper, after a brief discussion of the background for this project, I propose two possible hypotheses as to how parties choose their running mates. One of these theories is that parties choose their partners to maximize their collective competitiveness. The second one is that parties choose allies that they feel ideologically close to (Golder 2006).

After this I discuss the measures I calculated to evaluate the joint competitiveness and the ideological distance of any two parties. France has a two-round plurality legislative electoral system. This unique system allows me to develop a joint competitiveness measure based on the electoral results of the first round of the elections. In addition, I calculate the policy positions of all the parties vis-a-vis to each other using all the 56 issue dimensions of the the Comparative Manifesto Project dataset.

With these two variables I create a new dataset which includes all the possible coalitions of the biggest party and the biggest opposition party. Next, I run a logistic regression to test how these variables predict the probability that any two parties will enter into a pre-electoral coalition together. My results show that the relative closeness of the policy positions of the parties, especially their closeness on the main issue dimension, and their joint competitiveness both increase the probability that two parties form a pre-electoral coalition. In the last part, I conclude.

Background

Pre-electoral coalitions are coalitions that form before the elections to compete together in the given elections. The parties have an incentive to form pre-electoral coalitions when there are a lot of parties in the country (so there is little chance that any party alone can win the majority) and when the electoral rules give an advantage to larger parties or coalitions (Golder 2006).

France fits this description on both accounts. France has a two-round plurality electoral system with single member districts to elect their legislature. This means that after a first round of voting where very small parties drop out, the voters can vote again to choose a single winner from the remaining candidates. The threshold to get into the second round is relatively low, it is 12.5% of he votes in the districts. Under this electoral system smaller parties survive the first round of elections. In fact, parties are incentivized to run candidates in all districts in the first round. Parties receive public support based on the results of the first electoral round (Blais and Indridason 2007, 195). The number of parties which run in the first round of the elections varies. Usually it is around 14 but in 1988, after the only elections in the country that was run with the rules of Proportional Representation (PR), 24 parties entered the race.

In the second round of the elections the plurality winner of the single member district wins the legislative seat. At this stage only the strongest candidates have a chance to win. Consequently, parties have an incentive to form alliances for the second round of the competition (Duverger 1954; Golder 2006).

Due to these factors, in France pre-electoral coalitions form regularly between the two electoral rounds. In each legislative elections there were at least two pre-electoral coalitions running (Blais and Indridason 2007; Golder 2006). Negotiating the pre-electoral coalitions may be difficult but it seems to benefit all parties. In an electoral system where the final outcome is a plurality decision we normally would expect that only a few parties

survive in the long run (Duverger 1954). However, due to the skillful exchange of stepping-down candidates in the districts usually there are about seven, eight parties present in the legislature.

Pre-electoral coalition formation is a distinct process from post electoral coalition formation. Post-electoral coalition formation is usually determined by the outcome of the elections. Pre-electoral coalition formation on the other hand has to depend on a very careful strategical calculation of the parties. When parties decide to forfeit certain districts to their competition they must make sure that their candidates will win other districts. The parties have to be very successful at guiding their voters how to vote so at the end they could all get a positive pay-off from the transaction.

Due to this circumstance the parties may have to choose ideologically close pre-electoral coalition partners. It is reasonable to expect that parties do not want to give up many policy positions in a future government to a party which has completely opposite policy ideas from them (Golder 2006, 103). But also, they could be afraid that an ideologically distant partner would alienate too many of their voters.

Of course there are reasons to be conscious about the size of the alliance as well. There are certain thresholds built in the competition that could encourage cooperation for a higher voteshare. First, parties that want to pass the 12.5% threshold to compete in the second round of elections may form a pre-electoral coalitions (Blais and Indridason 2007). Second, parties have to get a high voteshare (potentially a majority if there are only two candidates) in the second round and they may form a pre-electoral coalition to be stronger together(Golder 2006).

These are two main theories on how the parties choose their allies. According to the first one, parties choose based on ideological closeness and according to the second one parties choose based on their increased chances of winning with their partner (Blais and Indridason 2007; Golder 2006). Of course it is possible that parties choose their allies

based on both ideological closeness and electoral success.

In this paper, I use district level data from France to test these two hypotheses. It seems obvious that parties should care about what they can gain (more seats) and what they can lose (having to compromise with parties that have different ideal points). Thus I also examine how do the parties trade these two considerations off against one another.

Hypotheses

H1: Parties cooperate with each other when they believe that they can win more seats together than alone.

H2: Parties cooperate with each other when they are close to each other ideologically.

Data

In this paper I use district level electoral data from the French legislative elections from 1968-2002 (Fifth Republic of France) and the manifestos of the most important parties that ran in the elections at the same period in France. The number of single member districts varied between 400 to 600 throughout this time. I exclude the elections of 1986 from the dataset.[1] This is because the election of 1986 was run under proportional representation (PR) electoral rules. In any given elections, often about 15 parties ran, but not all parties contested every district.

Currently, in France the legislature is elected in a two-round plurality electoral system. For this analysis I use the results of the first electoral round of each election. This system gives a unique opportunity for the parties to evaluate their potential coalition partners. The parties can observe the result of the first electoral round and can calculate

[1] The elections covered in this analysis are the French legislative elections of 1962,1967, 1968, 1973, 1978, 1981, 1988, 1993, 1997 and 2003.

their potential joint voteshare with any potential coalition partner in the districts. In light of this knowledge it may be easier for them to decide on a partner.

In addition, I use the data from the Comparative Manifesto Dataset Project to calculate the issue positions of the parties. The Comparative Manifesto Dataset Project only codes 5-6 parties in any given legislative elections. This means that when I put together my dataset I have to limit my cases to pairs of parties that had manifestos. In this analysis out of the parties that have both manifestos and electoral results, I choose the winner party and the biggest opposition party and examine how they chose from the potential pre-electoral coalitions.

In the dataset that I create at the end, each observation is a potential coalition that includes one of the big parties and one other party. At the end my dataset consists of $k * (2 * (n_k - 1) - 1)$ observations where n_k is the number of parties that had manifestos in any given year and k is the number of years.

Measures of Joint Competitiveness and Ideological Proximity

Measure of Joint Competitiveness

The first hypothesis that I am going to examine is that the parties cooperate with each other when they believe that they can win more seats together than alone. To test this hypothesis I created a measure to evaluate how competitive any two parties would be together in the second round of the elections. In reality the vote share of a realized coalition can be lower or even higher than the votes that the individual parties get depending on the voter turnout (Tillman 2013). However, I believe that the parties can make predictions about their future joint success based on their individual first round results.

I argue that parties choose to be in a coalition with another party that will make them competitive in the most possible districts. In this paper I define being competitive as being close together to the fifty percent vote share in a given district. Each party can

calculate its potential joint voteshare distribution with all the other parties.

Here, I demonstrate this idea with the plots of the joint vote distributions of the Socialist Party with all the other parties in 1978. *Figure 1* shows that the Socialist Party was competitive in most districts together with the Communist Party. In most of the districts the proportion of votes fell close to the 50% mark. The potential coalitions of PS-RPR (Rally for the Republic) and the PS-UDF(Union for French Democracy) coalitions would end up with a much more flat vote shares distributions. This means that the parties together would lose more districts, as well as they would over win more districts than the PS-Communist coalition. A potential PS-DVD(Diverse Droite) coalition would loose most of the districts, which is another undesirable result *(Figure 1)*.

To numerically summarize this concept, I created a measure called *Vote Share Spread*. This measure is based on the mean absolute deviation of the voteshares from the 50% threshold in the districts. I calculate the measure in the following way:

$$2\sum_{i=1}^{n}\left|x_i - \frac{1}{2}\right| p(x_i)$$

Where x is the joint vote share of two parties in a given district, n is the number of districts and $p(x_i)$ is the probability of observing that particular joint vote share.

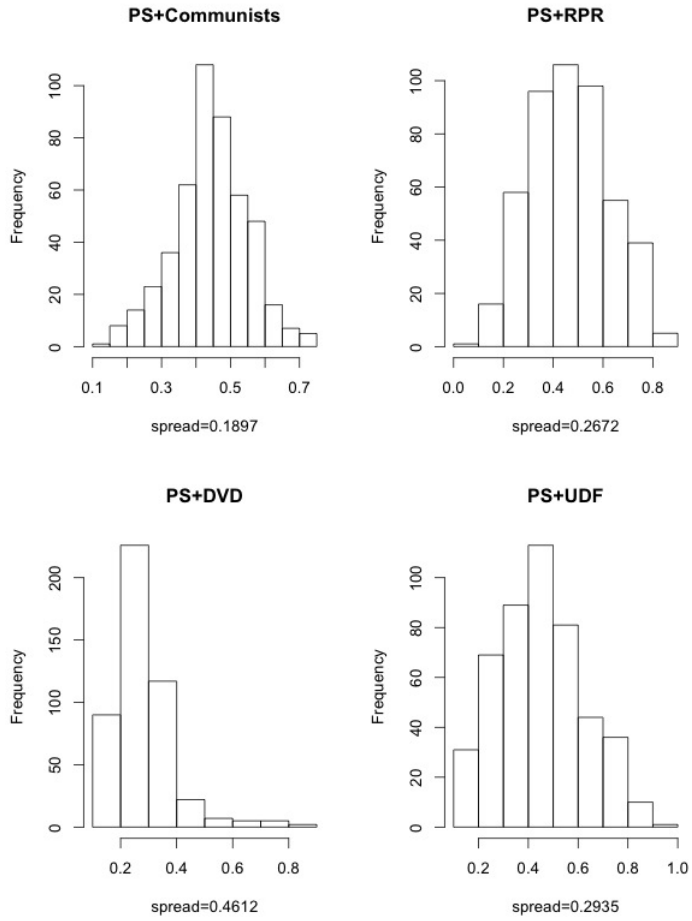


Fig. 1: Histogram of the Joint Vote Shares in all electoral districts: Potential Socialist Party(PS) Coalitions in 1978. Top row: PS and the Communist Party; PS and the Rally for the Republic. Bottom Row: PS and the Divers Droite; PS and the Union for French Democracy. Below the histograms, the relevant Vote Spread Measures. The potential coalition of the Communists and the Socialists has the lowest value: this is the most desirable coalition

With this measure we can evaluate in how many districts would the two parties be competitive together. If the measure is 0 that means that the parties together could get 50% of the votes in each district (they are very competitive together in all districts) while a value of 1 indicates that the parties are either strong in the same districts or they are very strong in polar opposite districts (they are not become competitive together). A value of 1 indicates that in any district the two parties together would either get 0% of the votes or a 100% of the votes.

As we can see in the previous example in 1978 from the perspective of the Socialist Party the *Vote Share Spread* measure is the smallest if they enter into a Socialist-Communist pre-electoral coalition *(Figure 1)*. I argue that this is the most desirable pre-eletoral coalition for them. This is indeed one of the pre-electoral coalitions that eventually formed in 1978.

To compare whether this is the best measure for success in the electoral competition I also calculated the probability that the joint vote share of the parties will be less than 10% in the districts and that the probability that their joint vote share will be over 60%. If the first measure is high the parties are weak together in a lot of districts; if the second measure is high the parties could potentially win big together. Out of these three measures, the *Vote Share Spread* measure was the only predictor of the pre-electoral coalition formation.

Measure of Ideological Proximity

The second hypothesis is that parties will form a pre-electoral coalition when they are close to each other ideologically. I use non-linear correspondence analysis to estimate the ideological position of the parties based on the data of the Comparative Manifesto Dataset Project to test this hypothesis.

The Comparative Manifesto Project data is one of the most widely used dataset of party positions. As it is a time-series cross-country dataset the data easily comparable across countries (Gemenis 2013). The data consist of the ratios that each party allocates from its manifesto to each of 56 issues in a given election (Volkens et al. 2013). The issue categories cover a variety of economic and social topics that could be important for the parties. Most, but not all issue categories show whether the party mentions the issue in a positive or a negative way. For example, two of the categories are: *Internationalism Positive* and *Internationalism Negative*.[2]

[2] The dataset has been criticized because the categories do not reveal the salience of the issues in a

The information in the Comparative Manifesto Data Set project can be too rich. There are 56 issue categories but only a few parties that are coded for each year in a given country. Thus it is difficult to estimate each party's position relative to the other parties in each year based on all issues. Some researchers have reached back to the text of the manifestos to find the most important issues without pre-determining the issue categories (Slapin and Proksch 2008). However, some noted that this technique might result in finding potentially meaningless dimensions (Grimmer and Stewart 2011).

There were several attempts to scale the party positions on a left- right issue dimension. The original left-right scale, also published along with the manifesto data is calculated by a definition of left- right issues. Then the values that the parties assign to left and right issues together and the two are deducted from each other(Laver and Budge 1992). Gemenis argues however, that parties can be wrongly positioned if we define left and right issues by a universal criteria as the left and right dimensions are not the same in every country (Gemenis 2013).

Other scaling methods use factor analysis to find the left -right dimension either by using all the issues or by using a selection of issues (Gabel and Huber 2000; Klingemann 1995). Other authors use regression analysis to differentiate valiance issues from salient left and right issues and to find the left-right dimension (Franzmann and Kaiser 2006). These attempts do not take into account that in multiparty countries parties may compete in more than one dimensions.

Wawrick (1995) goes beyond this and places the parties into two dimensions using principal component analysis. However, as I discuss below this approach can run into issues of scaling because the Comparative Manifesto Dataset does not use absolute values but relative ones.

given election. Moreover, the issues may not mean the same thing in different countries and even across time in a given country (Gemenis 2013). In addition, as there are some "negative" and some "positive" categories it can be hard to assess the position of the parties (Gemenis 2013). While these may be valid criticisms, in this paper I am evaluating the ideological positions of parties compared to each other in a given election so this problem does not affect this study.

In this paper, I suggest using a technique, non-linear correspondence analysis to place the parties in a multi-dimensional space, based on how close (or distant) the partys' rankings of issues to one-another. Contrary to a simple principal component analysis but this technique allows for the non-linear scaling of the data.

I argue that we need to consider using this technique to address the special characteristics of the Comparative Manifesto Dataset. First of all, the Comparative Manifesto Dataset Project codes the manifestos of 5 or 6 parties in each electoral year. We can think about this data as 5 or 6 observations with 56 variables per year. The non-linear correspondence analysis is an ideal method for datasets that are more wide than long. During the calculation of the output the equation is rocking back and forth between the two side of the equation to gradually reduce the loss function (de Leeuw and Mair 2009). This means that we can optimize the the location of the data at the same time as we minimize the loss function (de Leeuw and Mair 2009, de Leeuw 2006). In simpler terms how the parties rank the 56 issue dimensions will define the space that shows which issues are important. Turning back again, the issue dimensions will define the location of the parties. At the end, the parties end up in a location close to parties that ranked similar issues in similar ways.

In theory we could also use principal component analysis to reduce the dimensionality of a "wide dataset", as Wawrick has suggested (de Leeuw and Mair 2009). However, in the case of the Comparative Manifesto Dataset data we actually do not have meaningful values to calculate with. As I mentioned above, the Comparative Manifesto Dataset Project reports the ratio that the parties allocate on each of the 56 political topics from their manifestos. These values have to add up to 1. It is probably easier to conceptualize these values as a rank ordering coming from the parties. Parties will spend more of their asset (manifesto space) on the topics that they find more valuable.

If we the dataset is ordered though, then we cannot be sure that the values are

in equal distance from each other. The non-linearity of the non-linear correspondence analysis means that we allow for non-linear transformation of the data and thus overcome this problem.

The output of the method is similar to a regular principal component analysis. We can pull out the main dimensions and we can find the positions of the objects in these dimensions. In the case of the party ideologies, we find the main policy dimensions and the locations of the parties. I calculate the distance between the parties using these locations.

Below I present the object plots that situate the French parties in the space that the 56 issue dimensions created in the elections *(Figure 2)*. The main issue dimensions need not to be the same for each year as it is calculated by the party manifestos of each elections. However, the plots show that the *First Dimension* is probably the traditional left-right scale in each year. The parties separate into two, later into three groups with Communists and Socialists on the left and Conservative parties towards the middle.

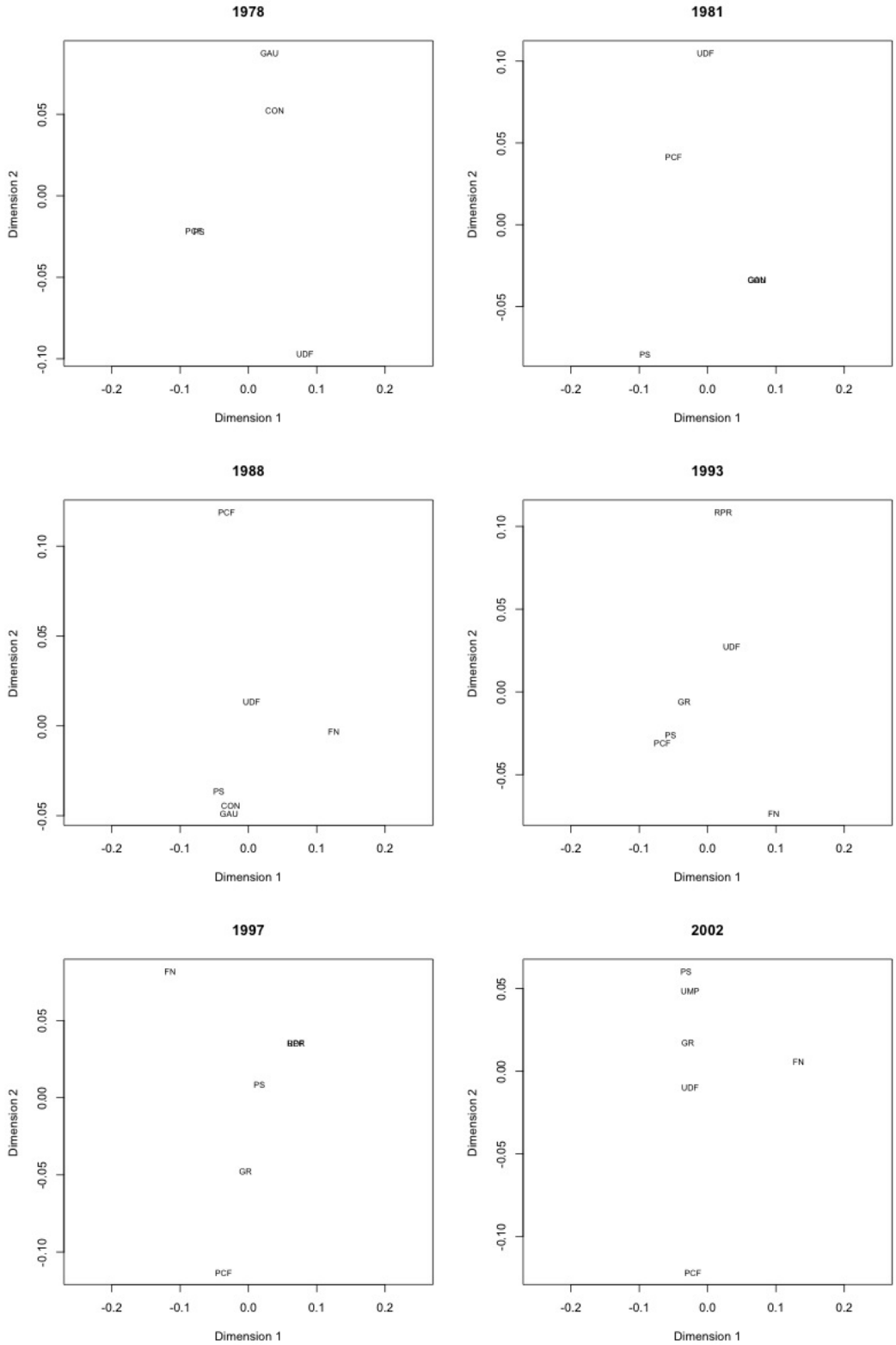
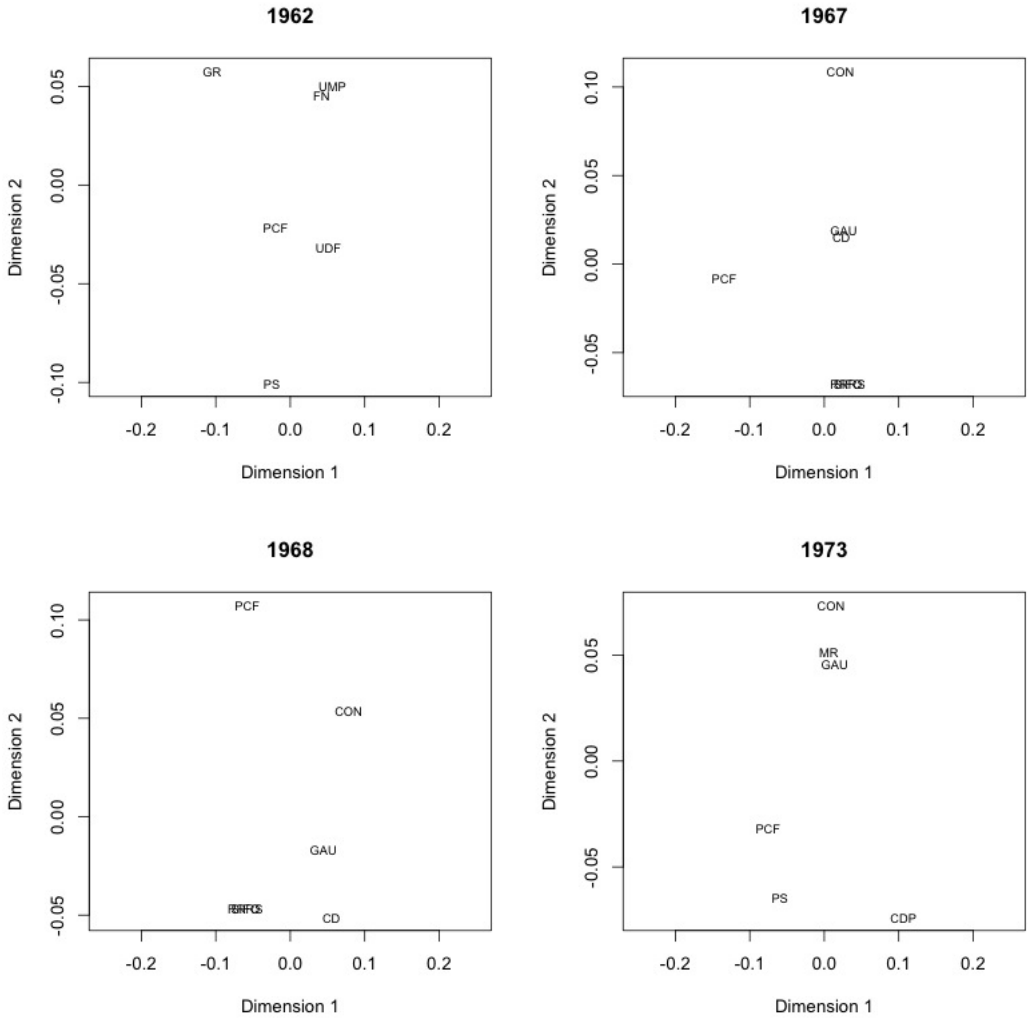


Fig. 2: Location of the French parties on the two main ideological dimensions. Party abbreviations: CDP-Center Democracy and Progress, CD-Democratic Centre, CON-Conservatives, FN- National Front, GAU-Gaullists, GR-Greens, MRP-Popular Republican Movement, MR-Reformers' Movement, PCF-Communist Party, PS-Socialist Party, RPR-Rally for the Republic, RRRS- Radical Socialist Party, SIFO-Socialist Party, UDF-Union for French Democracy, UMP-Union for the Presidential Majority



It is a little bit harder to understand the the *Second Dimension*. On this dimension the Socialists are often on the on the opposite side from the Communists and the Conservatives are often on the opposite side from the Gaullists. On the *Second Dimension* the parties separate into three or four groups. I plotted the vector plots from some years to see what the second dimension could be. The vector plot shows which issues of the 56 issues align with the main issue dimension and which are orthogonal to it.

Here as an example I show some of the vector plots that I generated when I calculated the parties' positions in the 1988 elections *(Figure 3)*. In the plots the two

main dimensions are represented with dashed lines. Along the vertical dashed line we can see the issues that are most important to determine the *Second Dimension*. *Figure 3* shows that the *Second Dimension* in this particular year is determined mainly by issues that relate to international relations such as foreign relations, peace and EU relations. It seems that in this particular year the second dimension separated nationalists and internationalists. Surprisingly, the Front National, the nationalistic party, is only a few times at the extreme end of this dimension (*Figure 2*). This may mean that the dimension is not the same every year or that the everyday rhetoric of the parties is different from the content of their manifestos. In a follow up project I will discuss in more detail how the dimensions of the competition have changed in France.

Also we can see that the parties are rather stationary on the *First Dimension* but are changing positions on the *Second Dimension*. Consequently, there is a possibility that the distance on the First Dimension between the parties will have a different effect on the odds that the parties form a pre-electoral coalition than the distance between the parties on the *Second Dimension*. To address this question, after calculating the object scores (the position of the parties) I created three variables: a distance variable between any two parties on the *First Dimension*, a distance variable between any two parties on the *Second Dimension*, and an overall distance: *Euclidean Distance* variable between any two parties.

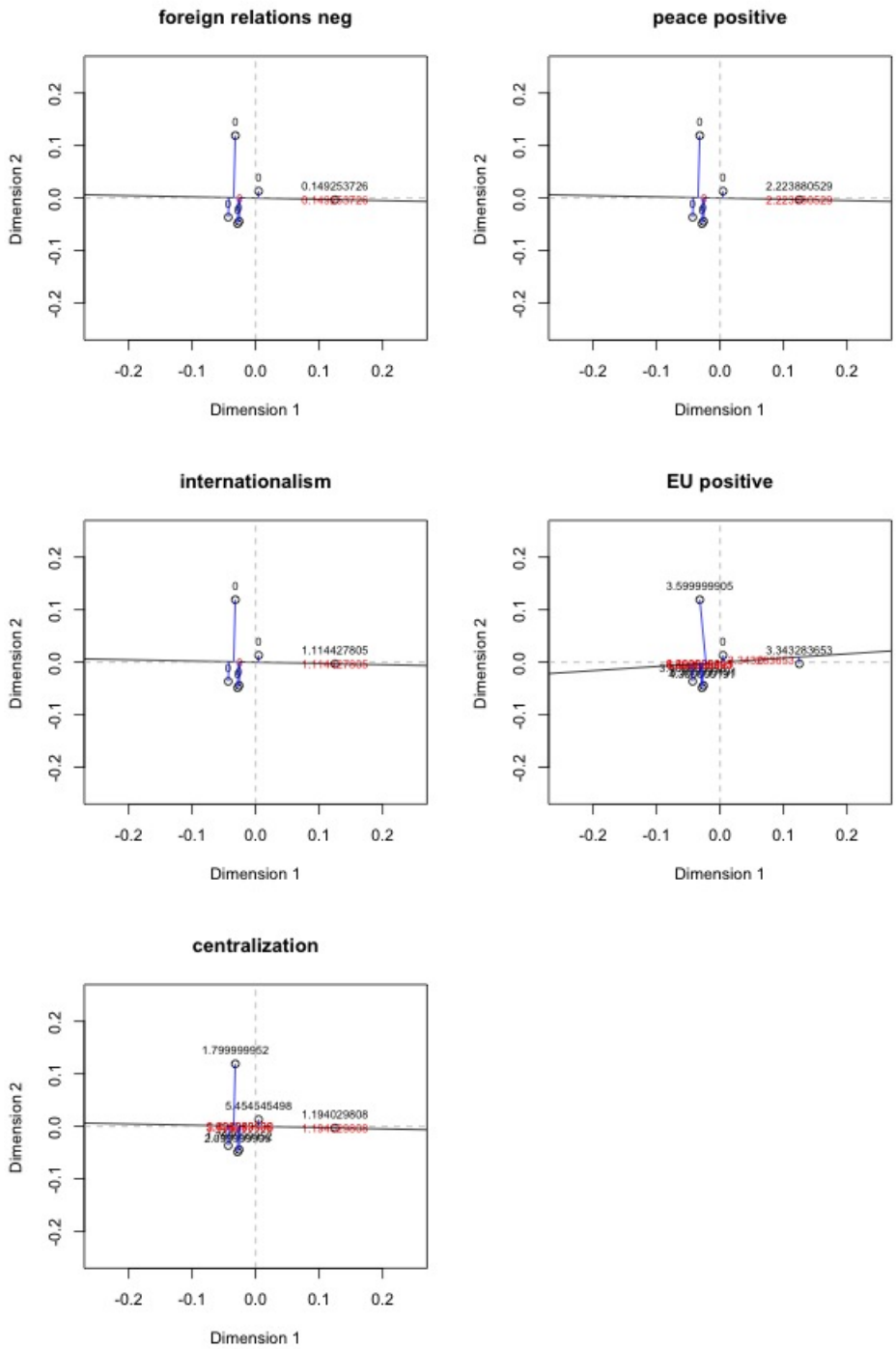


Fig. 3: Selected Vector Plots: 1988. The vector plots are chosen to show which factors were orthogonal to the main issue dimension in 1988. These are the issues that define Dimension 2. The second issue dimension was defined by issues related to international relations in 1988.

Results

After constructing the dataset I run logistic regressions to calculate how the ideological distance between any two parties and their ability to collectively win districts influence the probability that they enter into a pre-electoral coalition together. The dependent variable is whether parties entered into a pre-electoral coalition with the other party in the elections. This binary outcome is a "Yes" or "No" for every possible two party combination. The independent variables are: *Vote Share Spread*, *Euclidean Distance*, *Dimension 1* and *Dimension 2*. *Table1* reports the results of the regressions:

Tab. 1: Effect of Ideological Distance and Potential Electoral Success on the Probability of Pre-electoral Coalition Formation between Two Parties. France 1968-2002.

	Dependent variable: Pre-electoral Coalition: Formed				
	(1)	(2)	(3)	(4)	(5)
Dimension 1	-19.270^{***}			-19.581^{***}	
	(5.910)			(6.006)	
Euclidean Distance		-11.123^{***}			-12.569^{***}
		(4.072)			(4.302)
Dimension 2				-1.520	
				(4.773)	
Vote Share Spread			-3.062^{*}	-3.464^{*}	-3.787^{**}
			(1.769)	(1.826)	(1.858)
Constant	0.126	0.264	0.380	1.646^{*}	1.921^{**}
	(0.341)	(0.448)	(0.718)	(0.902)	(0.929)
Observations	86	86	86	86	86
Log Likelihood	-45.358	-48.682	-51.015	-43.321	-46.275
Akaike Inf. Crit.	94.717	101.365	106.030	94.642	98.550

*p<0.1; **p<0.05; ***p<0.01

Note: Dependent Variable: Pre-electoral coalition formed between two parties: yes or no; Independent Variables: Dimension 1: The distance between two parties on the first ideological dimension; Dimension 2: The distance between two parties on the second ideological dimension; Euclidean Distance: The euclidean distance between the ideologies of two parties; Vote Share Spread: Joint competitiveness of two parties

The results show that the *Vote Share Spread* (joint competitiveness) and the

Euclidean Distance between the parties both matter when the parties decide whether to form a pre-electoral coalition with each other. In addition, the distance between two parties on the main issue dimension matters. All of these variables are statistically significant with the expected sign. The closer the parties are ideologically (especially on the *First Dimension*) and the closer they can get together to reaching 50% of the votes in the districts the more likely it is that they enter into a pre-electoral coalition with each other. However, the *Second Dimension* does not matter. Because the variables *Dimension 1* and *Euclidean Distance* are highly correlated I will have to leave one of the variables out from the final model. Here, I will report the results of Model 5 which includes the *Euclidean Distance* and the *Vote Share Spread* variables:

$$Pr(CoalitionFormation) = logit^{-1}(1.92 - 12.569 * EuclideanDistance - 3.787 * VoteShareSpread).$$

Both the *Vote Share Spread* and the *Euclidean Distance* variables are standardized by design so we can interpret the model straightforwardly. When the *Vote Share Spread* measure of any two parties is 0 - this is to say together they would be getting 50% of the votes in each district and their manifestos are identical, the probability that they will enter into a pre-electoral coalition is 0.87. Thus the model estimates a 87% probability of two parties forming a pre-electoral coalition when two parties are virtually identical and could be competitive in all the districts together. The *Vote Share Spread* variable is on the 0-1 scale. The *Euclidean Distance* variable varies between 0.01 to 0.17. We have to caliber the interpretation of the coefficients accordingly. Below I plot how the probability that a pre-electoral coalition (PEC) forms between two parties changes when we keep one of the variable fixed and change the other variable. For each plot the solid lines represent the variable that we keep fixed at its first and third quartiles. The solid curves show how the probability of gettng into a pre-electoral coalition is changing when we move the other variable from its minimum to its maximum. The dashed lines represent

the mean of the variable on the x-axis, and can help with the interpretation of the results. To interpret the results I will use the mean values of the focal variable. We can see from

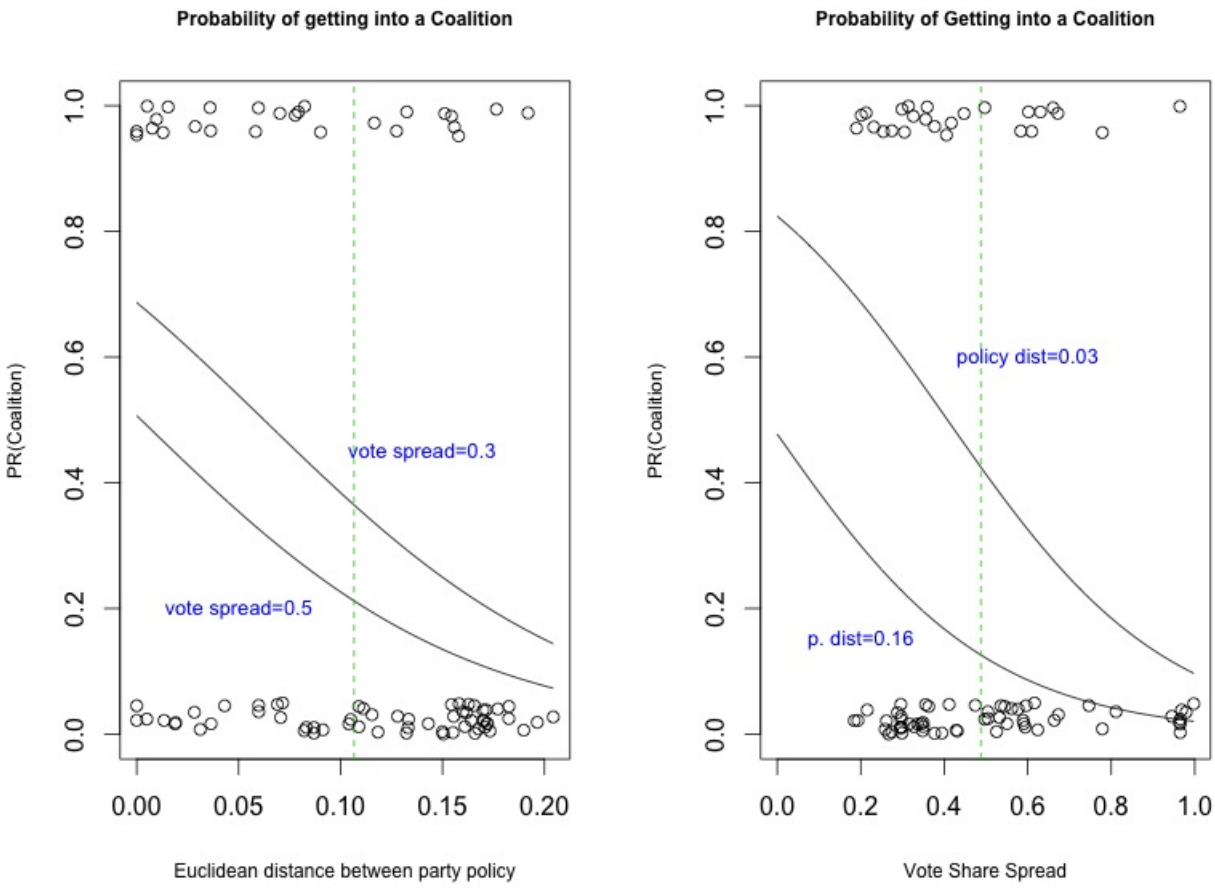


Fig. 4: Interpretation of the logistic regression results. Left: The Vote Share Spread variable is fixed at its 1st and 3rd quartiles. The curves show how the probability of the parties getting into a pre-electoral coalition changes when we the Euclidean distance between the party ideologies changes. Right: The Euclidean Distance Variable is fixed on its 1st and 3rd quartiles. The solid curves show how the probability of the parties getting into a pre-electoral coalition changes when the Vote Share Spread of the parties changes. In both cases the dashed line shows the mean of the variable on the x-axis.

left part of Figure 4 that a party that has a choice between two ideologically identical partners (both parties with a mean ideological distance from it), but one with which they have a Vote Share Spread of 0.3 and another party with which they have a Vote Share Spread of 0.5, will be 20% more likely to make a pre-electoral coalition with the party that

they are more competitive together. The probability of a pre-electoral coalition between those two parties will increase from 20% to 40%. Substantively this means that in our previous example in 1978, a pre-electoral coalition between the Socialists (PS) and Rally for the Republic (RPR) was about 8% less likely than a pre-electoral coalition between the Socialists and the Communists. And a Socialist-Union for French Democracy (UDF) coalition was 11% less likely than the pre-electoral coalition between the Socialists and the Communists solely based on their joint vote share distributions of the two parties in all electoral districts.

We can see from the right part of Figure 4 that if a party has a choice between two parties that they could be equally competitive with (this average competitive, the vote share spread is 0.5) the party will be more likely to choose a close ideological ally. If this party has to choose between a coalition partner that is 0.03 distant from it and a potential coalition partner that is 0.16 distant from it, it will be 30% more likely to choose the party that is closer to it ideologically. The probability of a pre-electoral coalition between these parties will increase from 10% to almost 50%. Substantively, in 1978 the Socialist Party and the Communist Party were within 0.7% ideological distance from each other based on their manifestos. By contrast, the policy distance between the Rally for the Republic Party and the Socialist party was 15%, which is almost the same situation as the one depicted in the picture. Consequently a potential pre-electoral coalition between the Socialists and the Communists was 30% more likely than between the Socialists and the Rally for the Republic.It is clear that both the distribution of the potential vote shares together and the ideological compatibility helped the Socialists and the Communists to form a pre-electoral coalition in 1978.

We can see from this analysis that policy distance matters more in selecting the potential coalition partner than joint vote share potential. If a party has to choose between two partners with which it could be win an equal number of districts, it will be

more likely to choose the one that is closer ideologically.

While the *Euclidean Distance* variable and the *Vote Share Spread* variables are significant predictors of two parties forming a pre-electoral coalition other factors did not seem to matter as much. I do not report it here, but I included in the model the portion of the districts where the two coalition partners together got less than 10% of the votes or more than 60% of the votes but neither control decreased the residual deviance. Parties do not form coalitions that will be either very strong or very weak. It is not surprising that parties do not care about lost districts, but it seems odd that parties do not want to be in very strong coalitions either (Golder 2006). I also tried to interact the variables, as it is plausible that given the policy distance two parties value joint competitiveness at different levels. Somewhat surprisingly, the *Policy Distance* variable and the *Vote Share Spread* variable do not interact with each other.

Conclusion

In this paper I tested two hypotheses about what can increase the probability that two parties enter into a pre-electoral coalition together. One hypothesis is that parties cooperate with each other when they believe that they can win more seats together than alone. The other hypothesis is that parties cooperate when they are close ideologically. I tested these hypotheses on data from the French legislative elections in the Fifth Republic. I argued that the French legislative data is uniquely suitable for this study because the country has a two round plurality electoral system. Often the parties get into a pre-electoral coalition after they know the electoral results of the first round of voting. Due to this the parties can actually estimate their joint potential voteshares.

In this paper I calculated two measures to evaluate the hypotheses. The first measure I created, calculates the probability that two parties jointly are competitive in a lot of single member electoral districts. In addition, I used non-linear correspondence

analysis to estimate how far the parties are located from each other based on their manifestos. The results of the statistical analysis show that the policy distances between the parties and the possibility that they could win in a lot of districts together both matter for pre-electoral coalition formation. The results also showed that the ideological distance of the possible coalition partners may be more important than their electoral compatibility.

There are still some things that are missing from this study. First, I have not addressed what happens when there are three or more parties in a pre-electoral coalition. This has occurred among the Gaullists, Conservatives and Independent Conservatives several times in France as well as among the Greens, the Socialist Party and the Communist Party. While I could address this question by adding the vote shares of all possible party groups (with 3,4,...,n parties) the number of the permutations in this calculation increases rapidly. In addition, it would be difficult to calculate the policy distance between three parties and to compare the measure to the policy distance between two parties. However, in the future I will attempt to calculate these measures.

The other problem is that I may have the causal arrow backwards. My analysis does not address that some of the pre-electoral coalitions form before the first rounds of elections in France. I assumed in this paper that most parties will run candidates in the first rounds, and only form pre-electoral coalitions later, but this is not necessarily true (Blais and Indridason 2007). Consequently, it is possible that the *Vote Share Spread* we observe is already the outcome of the cooperation in some cases. Blais and Indridason (2007) argue that this mainly happens when two parties want to pass the 12.5% threshold to get into the second round of the legislative elections. However, because of the limitations of the Comparative Manifesto Project's data, in this analysis I could include only the largest parties. Because of this limitation, reverse causality may not be a very serious problem in this particular study, but I should consider how to address this problem more directly. A better approach would be to examine lower level of elections. It would be ideal

to estimate the distribution of vote shares of all the parties in municipal or prefectural level elections to get a better sense of their strongholds. However, municipal elections happen more infrequently than legislative elections and the Comparative Manifesto Dataset Project limits the possible combinations of coalitions that I can use as a data.

There is a possibility that the policy positions of the parties are also influenced by the outcome variable. It seems plausible that prospective pre-electoral coalition partners adjust their manifestos to make them more alike so they will have less to explain to their voters if they enter into a pre-electoral coalition. One way to address this question would be to look at the manifestos of the parties with respect to other parties in the previous elections.

Overall, the measure I created, *Vote Share Spread*, at least based on the French case seems to be a useful tool to measure how competitive two parties together could be. In addition, this paper showed that the non-linear correspondence analysis can be a useful tool to calculate the policy distances between political parties based on the data that the Comparative Manifesto Dataset accumulates. Similar analysis could be done in every country in the dataset. By using these measures the paper showed that the parties in France are very rational when they choose their pre-electoral coalition partners. I argue that we should test the motivations of other parties in other countries as well with this method to validate the results. In comparative politics we often rely to either single case studies or time series panel data sets to validate our hypotheses. However, it would be very fruitful to develop techniques and measures that could be used across cases to prove our theories.

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Data

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