***STRATEGIC VOTING IN PROPORTIONAL
REPRESENTATION SYSTEMS:
EVIDENCE FROM A NATURAL EXPERIMENT***

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Abstract: I rely on data from a natural experiment in Spain to produce an unbiased estimate of the extent of strategic voting in multi-member districts. I also show that voters fully adapt to the different incentives provided by distinctive electoral systems within countries since the first election and then that they only behave strategically when the opportunity do so is present. That is, contamination effects do not exist when voting strategically.

1. Introduction¹

District-level strategic voting is a crucial but slippery phenomenon in mass elections. First, it affects the party system. As is well known, strategic voting imposes an upper bound, $M + 1$, on the effective number of competitors that will appear in equilibrium, where M is the number of seats to be filled in a district². However, its measurement is not easy at all, given that it entails comparing the actual (or stated) vote with the likely and unobservable vote in a counterfactual situation where incentives for behaving strategically are absent. That is, the so-called *fundamental problem of causal inference* is particularly acute here³.

The three existing approaches to measure strategic voting, the aggregated inference methodology, the direct individual methodology and the indirect individual methodology⁴, differ in how they obtain estimates of the true rank-orderings of parties or candidates for each voter (i.e. the *sincere* vote). And the crucial consequence is that, with few exceptions⁵, there is a great deal of variation in the estimates of strategic behavior reported in the literature. For instance, in the 1987 British general election, an important case study for scholars interested in the problem of strategic voting in multiparty elections⁶, strategic voting ranges from a low of 6.3 per cent reported by Evans and Heath⁷ to a high of 17 per cent reported by Niemi, Whitten and Franklin⁸. Although much less is known about strategic voting in multi-member districts⁹, it could be argued that things are even more difficult here. District magnitude is correlated with urbanization or third-party membership¹⁰ and then a problem of severe multicollinearity arises to disentangle the true impact of district magnitude on voting behavior.

In this article I use unique data from a natural experiment —case studies in which the effects of specific electoral rules can be isolated from other variables¹¹ — in the region of Andalusia, in Spain, to measure the extent of strategic voting in multi-member districts. Elections in Andalusia have two particularly interesting features. First, in national and regional

elections, the electoral system is exactly the same: seats are elected from the same 8 multi-member districts using the D'Hondt method of proportional representation with closed party lists for each of the provincial-level electoral districts and with a formal threshold of 3 per cent of valid votes at the district level. However, there is a crucial difference between both electoral systems. In regional elections district magnitude is greater than five in the eight districts and then the third national party, the Communist Party (the PCE) and its heir, the United Left (the IU) is a viable competitor everywhere. On the contrary, in national elections there are two districts with magnitude 5 and then the PCE/IU has never gained a seat there in the ten elections held until now, while in the six remaining districts magnitude is greater than 5 and the IU has gained seats there in at least one of the elections. Second, in six of the eight regional elections held in Andalusia since 1982 regional and national were concurrent. In sum, we are holding everything constant while we are changing the value of the key causal (or treatment) variable, district magnitude or the institutional incentives for strategic voting.

By dwelling on this natural experiment, I make three contributions. First, the natural experiment allows us to produce unbiased estimates of the extent of strategic voting in multi-member districts. Second, taking advantage of the fact that Spain is a young democracy, I revisit the developmental argument of strategic voting¹² (i.e., the strategic behaviour of voters increases with time as a result of a learning process). Third, a surprising omission in the literature on electoral systems is the consideration of "contamination" or "interaction" effects on the microfoundations of the district-level logic of strategic voting. Similar to the well-known presidential coattails effect, it can be hypothesized the existence of a coattails effect from the more important arena, the national one, to the less-important one, the regional one. That is, voters in regional elections might make up their mind on which party or candidate to vote not on the basis of the institutional incentives they face in the election at hand, but on the basis of the incentives provided by national elections. If voters do not fully adapt to the different incentives provided by electoral systems

and use the information about the electoral prospects of competitors in the more important arena also in the less important, they could vote strategically in both arenas, although strategic voting is unnecessary in the latter. This argument is tested in the paper. In the end, I estimate that 11.6 per cent of voters cast a strategic vote when presented with the opportunity to do so; additionally, this strategic behaviour does not increase with time and does not contaminate electoral arenas where voters do not have the opportunity to behave in a strategic fashion.

This article is hence a meeting point between the Fiorina's substantive claim that 'ticket-splitting and other aspects of the relationship between voting for different offices should become a central focus of research, rather than a sideline'¹³ and the methodological proposal made by Shugart of using crucial experiments to accumulate knowledge in electoral studies¹⁴.

The rest of the paper proceeds as follows. The second section presents the theoretical arguments on strategic voting, particularly in multi-member districts. The third section describes the natural experiment, the data and the methods. Then, the results of the empirical analysis are shown and discussed. Last section concludes.

2. Strategic voting and past studies

A strategic voting is a vote for a party (candidate) that is not the preferred one, motivated by the intention to affect the outcome of the election. Hence two conditions must be met for a vote to be strategic: the voter must vote for a party (candidate) other than the most preferred one and the voter must have come to that decision because of her perceptions of the likely outcome of the election¹⁵.

There are two key conditions for the district-level logic of strategic voting: voters are short-term instrumentally rational (i.e., they care only

about which party or candidate wins the seats in their district in the present election) and have rational expectations. When voters have rational expectations, (1) they agree on how preferences are distributed in the electorate, (2) they agree on what share of the vote each party or candidate will likely get and, therefore, (3) they are able to distinguish between the expected last winner of the last allocated seat and the expected first loser¹⁶. Since actors' instrumental rationality is a standard concern, particularly in rational choice theory, cross-national and across districts variations in the extent of strategic voting are a function of the quality of the information about the electoral prospects of competitors¹⁷.

The prevalent argument in the literature is that strategic voting should decline as voters' expectations about which party or candidate will win and will lose are less clear and coordinated. Electoral volatility, polls and, above all, institutional incentives are crucial for satisfying this informational prerequisite. Electoral systems scholarship agrees that the larger the district magnitude, the smaller are the voter percentages that separate winners from losers. Hence the harder it is to be sure which party or candidate is "out of running": in these conditions there are no clear incentives to desert (minor) parties or candidates. As a result, in PR systems with large district magnitudes strategic voting should not be an empirically relevant phenomenon. This argument based on the quality of information does not provide a very precise idea about when strategic voting ought to fade out, as Cox recognizes¹⁸. However, it seems to be above magnitude five according to empirical regularities based on Japanese, Colombian and Spanish district-level results¹⁹.

Recent research on strategic voting in multi-member districts challenges this decisive role of district magnitude. According to Forsythe et al, Gschwend or Lago²⁰, voters can also employ heuristics, such as the electoral history heuristics, to generate electoral expectations. Elections provide a very simple clue for coordinating behavior: whether parties have previously gained at least one seat in a given district. In order to form their electoral expectations and vote strategically, supporters of (minor) parties

only have to look back to previous elections. Consequently, voters can also behave strategically in large districts since the information on previous election results is also available there²¹.

These two processes to generate expectations are combined with three approaches to measure strategic voting²². The first approach consists in deducing the presence of strategic voting from aggregated electoral outcomes; in particular, direct district-by-district estimate of strategic voting and the pattern of inter-election vote shifts in different types of constituencies. Based on individual data, there are another two approaches. The *indirect* approach is to model how perceptions of the race affect vote choice to deduce on the basis of that model how many voters would have voted differently if their choice had not been influenced by strategic consideration. The *direct* approach consists in ascertaining how many voters both voted for a party other than their most preferred and also perceived the former to have better chances of winning than the latter.

These three methodologies all suffer from different flaws or biases when obtaining measures of the true rank-orderings of parties or candidates for each voter, the *sincere* vote²³. As Alvarez and Nagler summarize, 'the implication is that the empirical literature has come up with very different estimates of the extent of strategic voting, even from researchers examining the same election in the same country. We believe that the reason for these divergent results lies in the different methodologies used in these studies to measure or to estimate the extent of strategic voting'²⁴. In short, although strategic voting is a phenomenon of longstanding interest, its extent or empirical relevance in mass elections is still an open question. And things are even more difficult in districted proportional representation²⁵. Given that urban areas are represented by high-magnitude districts and rural arenas are represented by low-magnitude districts, district magnitude is usually correlated with third parties' electoral support. When using the aggregated inference methodology or the indirect measurement methodology it is not possible to distinguish between strategic voting and latent support of minor parties²⁶.

3. Data and methods: a natural experiment on strategic voting

The Spanish Lower House has 350 members elected from 50 multimember districts and two-single districts using the D'Hondt method of proportional representation with closed lists for each district. Each multimember district is allocated two seats, with the remaining seats allocated by population size. There is a formal threshold of 3 per cent of valid votes at the district level. In national elections in the region of Andalusia, there are eight multimember districts. As can be seen in Table 1, since the founding election in 1977 the range of district magnitude has been rather wide. Across all eight districts and all elections between 1975 and 2008, the district magnitude ranges from a minimum of five (Almeria and Huelva) to a maximum of twelve (Sevilla since 1977). Additionally, Almeria and Huelva are the only districts where the third national party, the communist party (the PCE) and its heir, the United Left (IU) has never won seats. On the contrary, the Socialist Party (the PSOE), the main leftist party, has always had much better results than the PCE/IU in all districts and is a viable competitor everywhere²⁷. As the evidence provided by Gunther or Lago²⁸ supports, there are strong incentives for district-level strategic voting in the smaller districts.

In regional elections in Andalusia, the electoral system is the same than in national elections. Seats are elected in the same eight districts with exactly the same geographic area than in national elections and using the D'Hondt formula with closed party lists and a formal threshold of 3 per cent at the district level. The crucial difference is that in all districts in regional elections the number of seats to be filled is greater than five. As can be seen again in Table 1, district magnitude across all eight districts and all regional elections ranges from eleven (Almeria and Huelva) to eighteen (Sevilla). The main consequence is that the PCE/IU has won seats in all districts in at least four of the eight elections. In short, independently of

how expectations are generated, incentives of behaving strategically at the district-level are clearly absent.

'Table 1 about here'

Table 2 displays the different incentive structures for strategic voting in Andalusia when both electoral systems are superimposed. In those districts where district magnitude is greater than five in national and regional elections (and the PCE/IU is a viable competitor in both electoral levels), voters should behave sincerely. That is, differences in the PCE/IU's vote shares in cells C and D are a function of idiosyncratic characteristics of each territorial level, but not of district-level strategic voting. However, things are different in those whose magnitude is greater than five in regional elections but not in national ones. In regional elections, cell B in Table 2, incentives for voting strategically are again absent, above all when we take into account that the PCE/IU is a viable competitor there. But in districts whose magnitude is not greater than 5, cell A, (some) PCE/IU supporters should behave strategically. That is, differences in the PCE/IU's vote shares in cells A and B are a function of idiosyncratic characteristics of each territorial level plus the impact of district-level strategic voting in national elections.

'Table 2 about here'

On the basis of these incentive structures, the existence of strategic voting in national elections can be easily tested and its extent measured. Comparing the PCE/IU's vote shares in each cell, if $(B - A) > (D - C)$, there is evidence of strategic voting in districts with $M \leq 5$ in national elections. But if $(B - A) \leq (D - C)$, there is no evidence of strategic voting in national elections.

Using relative differences instead of absolute differences, the difference in the PCE/IU's vote shares between electoral levels is calculated as follows:

$$100 \frac{\%IU^R_i}{\%IU^N_i}$$

where:

$\%IU^R_i$ is the percentage of votes obtained by the PCE/IU in the regional election in district i , and

$\%IU^N_i$ is the percentage of votes obtained by the PCE/IU in the national election in district i .

The dependent variable here is the difference between the percentages of votes obtained by the PCE/IU in each pair of national and regional elections. The pairs of elections analyzed are 1982 /1982, 1986 / 1986, 1989/1990, 1993 /1994, 1996 /1996, 2000/2000, 2004/2004 and 2008/2008. The first year corresponds to the national election.

As the ratio gets larger than 100, the better the electoral results of the PCE/IU in regional elections in a given district compared to national elections, and the other way round. For instance, if the ratio is 110, the percentage of votes obtained by the IU in the regional election was 10 per cent higher than in the national election. And the other way round when the ratio is 90.

4. Results

Table 3 shows the OLS estimation results to test the hypotheses. All standard errors are clustered by electoral district to account for the non-independence in the data structure. According to the first model, there is clear evidence of strategic voting in national elections. The variable $M \leq 5$ is statistically significant at the .05 level and has the expected positive sign: in those districts with magnitude 5 in national elections, the PCE/IU won 11.64 points more (less) in regional (national) elections than in national (regional) elections in comparison with those districts whose magnitude was higher than 5 in both national and regional elections. That is, given that in districts with magnitude greater than five there is not strategic voting, 12 of each 100 voters of the PCE/IU in regional elections behaved strategically in national elections in these two districts. Or in other words, around 12 per cent cast a strategic ballot when presented with the opportunity to do so²⁹. The mean vote share of the PCE/IU in the eight regional elections in these two districts is 8.79; consequently, 1.02 per cent of the total number of voters in national elections behaved in a strategic fashion.

However, this level of strategic voting could be the tip of the iceberg. If voters are not aware of the different institutional incentives in each arena, they might also desert strategically the PCE/IU in regional elections, although they had no incentives. Hence the true extent of strategic voting in national elections should be equal to the previous estimate plus the percentage of voters behaving strategically in both arenas. There are good reasons to think that the superposition of electoral systems weakens the informational prerequisite for strategic voting. When significantly different rules are superimposed within countries, and one of the offices/tiers/arenas to be elected is more important than the other, it can be hypothesized that voters will use the information generated in the more important contest to vote in both elections. Some of them will look to the mirror of the more important election to decide their vote in every contest within the country. Given that political knowledge of most adults is very low – ‘study after study documents the breadth and depth of citizen ignorance’³⁰ –, using the same cues in all elections is a way to simplify the decision-making process.

If the most important office/tier is elected under a stronger electoral system than the less important office/tier, then some voters may be faced with incentives to vote strategically in the former, but not in the latter. And if voters do not fully adapt to the different incentives provided by electoral systems and use the information about the electoral prospects of competitors in the more important arena also in the less important, they could vote strategically in both arenas, although strategic voting is unnecessary in the latter. Put simply, the more important election within countries is a distorted mirror for voting strategically in the less important one. In sum, the logic predicting strategic voting in elections where the opportunity to do so is not present as a consequence of contamination effects is similar to that underlying the well-documented phenomenon of 'coattail voting' in presidential regimes. Similar to what happens in presidential coattails³¹, this contamination effect should be more important the higher the temporal proximity between elections, that is, in concurrent elections. Consequently, if the argument is right, we should observe more strategic voting in concurrent elections than in non-concurrent elections.

To test this hypothesis, in model 2 I have included the variable *Non Concurrent Elections* (coded 1 for non concurrent elections and 0 for concurrent elections), while in model 3 I have added an interaction between *Non Concurrent Elections* and $M \leq 5$ to the previous specification. In model 2 *Non Concurrent Elections* has the expected negative sign, but the variable is not statistically discernible from zero. And in model 3 the interaction is not statistically significant either. In sum, there is no iceberg below the tip.

Finally, in models 4 and 5 the argument that strategic voting increases with time as a result of a leaning process is tested. If the argument of Tavits and Annus is right³², we should observe a higher strategic voting after the first pair of national and regional elections. I have created in model 4 a dummy variable identifying the first pair of national and regional elections, while in model 5 its interaction with $M \leq 5$ is added. Both the dummy variable and the interaction do not have the expected

negative sign; that is, the amount of strategic voting is higher in the first pair of elections. However, they are not statistically significant³³.

‘Table 3 about here’

In Table 4 the results of an additional test analyzing whether strategic voting arises in regional elections in Andalusia as a consequence of contamination effects are shown³⁴. The dependent variable now is the difference between the percentages of votes obtained by the PCE/IU at the regional and district level in each regional election:

$$100 \frac{\%IU^R_i}{\%IU^D_i}$$

where

$\%IU^R_i$ is the percentage of votes obtained by the PCE/IU in regional election i , and

$\%IU^D_i$ is the percentage of votes obtained by the PCE/IU in the same regional election in district i .

As the ratio gets larger than 100, the better the electoral results of the PCE/IU in a given district than in the whole region in a given regional election. For instance, if the ratio is 110, the percentage of votes obtained by the IU in a given district was 10 per cent higher than in the whole region. And the other way round when the ratio is 90.

My argument is that if voters behave strategically in regional elections as a consequence of contamination effects, when the opportunity

to do so is not present, we should observe significant differences between concurrent and non-concurrent regional and national elections. The Duvergerian gravity coming from the national arena should be inexistent or at least weaker in non-concurrent regional elections than in concurrent regional elections. If some voters in regional elections are deserting strategically viable competitors in the regional election but non-viable in the national race, then this behaviour should be particularly relevant in concurrent elections. The results displayed in Table 4 support that voters behave as if they knew the different incentives provided by each electoral system, although they had too small a stake in elections.

According to the first model, in those districts with magnitude 5 in national elections, Almeria and Huelva, the PCE/IU gets worse results than in the remaining districts. However, the models 2 and 3 show that its electoral support does not significantly increase in non-concurrent elections. In other words, when the Duvergerian gravity is weaker, no statistically significant differences in the vote shares of the PCE/IU are observed. In sum, voters fully adapt to the different incentives provided by each electoral system: no evidence of strategic voting as a consequence of strategic voting has been found. This is not a surprising result. If voters are sophisticated enough to recognize and have strategic responses to 'wasted vote' situations³⁵, they should vote sincerely when the strategic voting opportunity does not exist.

'Table 4 about here'

5. Conclusions

Research on strategic voting agrees on two points. First, strategic voting is crucial for reducing contests with unviable parties or candidates to contests in which at most $M+1$ competitors are seriously in the running for seats³⁶. Second, estimates of the aggregate amount of strategic voting rarely converge, even when researchers examine the same election. To what extent strategic voting is as important empirically as in theoretical

models is still an open debate. This paper has dealt with this second point. Using a natural experiment in Andalusia (Spain), where everything is holding constant with the exception that in some districts there are very strong incentives for behaving strategically in national elections, but not in regional elections, I have estimated the level of strategic voting in multimember districts. I found that only a small fraction of the total voters, 1.02 points, behaved strategically in national elections in Andalusia. However, by focusing the analysis exclusively on voters in districts in which they had the opportunity to behave in a strategic fashion, I found that around 12 per cent cast a strategic ballot when presented with the opportunity to do so. Additionally, voters know the different incentives for strategic voting in each territorial level and then there are no contamination effects between electoral arenas. Voters did not desert strategically the PCE/IU in regional elections.

Finally, the empirical results also show that the strategic behaviour of voters did not increase with time as a result of a learning process. The developmental argument of strategic voting does not hold in Andalusia.

Footnotes

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² Gary W. Cox, *Making Votes Count: Strategic Coordination in the World's Electoral Systems* (New York: Cambridge University Press, 1997).

³ Paul Holland, 'Statistics and Causal Inference', *Journal of the American Statistical Association*, 81 (1986), 945-60.

⁴ Michael R. Alvarez and Jonathan Nagler, 'A New Approach for Modelling Strategic Voting in Multiparty Elections', *British Journal of Political Science*, 30 (2000), 57-75; André Blais, Robert Young and Martin Turcotte, 'Direct or Indirect? Assessing Two Approaches to the Measurement of Strategic Voting', *Electoral Studies*, 24 (2005), 163-76.

⁵ For instance, Blais, Young and Turcotte, 'Direct or Indirect? Assessing Two Approaches to the Measurement of Strategic Voting'.

⁶ John W Galbraith and Nocol C. Rae, 'A Test of the Importance of Tactical Voting: Great Britain, 1987', *British Journal of Political Science*, 19 (1989), 126-37.

⁷ Geoffrey Evans and Anthony Heath. 'A Tactical Error in the Analysis of Tactical Voting: A Response to Niemi, Whitten and Franklin', *British Journal of Political Science*, 23 (1993), 131-7

⁸ Richard G. Niemi, Guy Whitten and Mark Franklin, 'Constituency, Characteristics, Individual Characteristics and Tactical Voting in the 1987 British General Election'. *British Journal of Political Science*, 23 (1992) 131-7. See Alvarez and Nagler, 'A New Approach for Modelling Strategic Voting in Multiparty Elections', pp. 57-60, for additional details.

⁹ See Gary W. Cox and Mathew S. Shugart, 'Strategic Voting under Proportional Representation'. *Journal of Law, Economics and Organizations*, 12 (1996), 299-324; Thomas Gschwend, 'Institutional Incentives for Strategic Voting and Party System Change in Portugal', *Portuguese Journal of Social Science*, 6 (2007), 15-31; Ignacio Lago, 'Rational

Expectations or Heuristics? Strategic Voting in Proportional Representation Systems', *Party Politics*, 14 (2008), 31-49.

¹⁰ Burt L. Monroe, and Amanda G. Rose, 'Electoral systems and unimagined consequences. Partisan effects of districted proportional representation', *American Journal of Political Science*, 46 (2002), 67-89.

¹¹ Matthew Soberg Shugart, 'Comparative Electoral Systems Research: The Maturation of a Field and New Challenges Ahead', in Michael Gallagher and Paul Mitchell, eds, *The Politics of Electoral Systems*. (Oxford: Oxford University Press, 2005), pp. 25-56.

¹² Margit Tavits and Taavi Annus, 'Learning to make votes count: The role of democratic experience', *Electoral Studies*, 25 (2006), 72-90.

¹³ Morris P. Fiorina, *Divided Government* (New York: Macmillan, 1992), p. 130.

¹⁴ Shugart, 'Comparative Electoral Systems Research: The Maturation of a Field and New Challenges Ahead', p. 34.

¹⁵ André Blais, Richrd Nadeau, Elisabeth Gidengil and Neil Nevite, "Measuring Strategic Voting in Multiparty Plurality Elections", *Electoral Studies*, 20 (2001), 343-52, p. 344.

¹⁶ Cox, *Making Votes Count*, chapters 4 and 5.

¹⁷ These conditions are not implied by any standard notion of instrumental rationality or rational expectations. In the formal model of David P. Myatt, *Multi-party Tactical Voting Incentives* (Nuffield College Economics Discussion Paper 2000-W19, 2000); or Stephen D. Fisher, "Definition and Measurement of Tactical Voting: The Role of Rational Choice", *British Journal of Political Science*, 34 (2004), 152-66, for instance, voters are uncertain of the support levels for the parties.

¹⁸ Cox, *Making Votes Count*, p. 100.

¹⁹ Cox, *Making Votes Count*, chapter 5; Cox and Shugart, 'Strategic Voting under Proportional Representation'.

²⁰ Robert Forsythe, Roger B. Myerson, Thomas A. Rietz and Robert J. Weber, "An experiment on coordination in multi-candidate elections: The importance of polls and election histories", *Social Choice and Welfare*, 10 (1993), 223-247; Thomas Gschwend, *Strategic Voting in Mixed-Electoral Systems*, (Reutlingen: SFG-Elsevier, 2004), Thomas Gschwend, 'Institutional Incentives for Strategic Voting and Party System Change in Portugal'; Lago,

'Rational Expectations or Heuristics? Strategic Voting in Proportional Representation Systems'.

²¹ However, accepting this argument does not imply rejecting the crucial role of district magnitude. The higher district magnitude, the higher the number of viable parties and, therefore, the extent of strategic voting will tend to decrease. In short, the correlation between district magnitude and strategic voting exists, but it is caused by a third variable: the existence of viable minor parties.

²² Alvarez and Nagler, 'A New Approach for Modelling Strategic Voting in Multiparty Elections'; André Blais and Richard Nadeau, "Measuring strategic voting: a two-step procedure", *Electoral Studies*, 15 (1996), 39-52; Blais, Young and Turcotte, 'Direct or Indirect? Assessing Two Approaches to the Measurement of Strategic Voting'.

²³ A comprehensive discussion of the biases in the three methodologies can be found in Alvarez and Nagler, 'A New Approach for Modelling Strategic Voting in Multiparty Elections' and Geoffrey Evans, "On the Validation of Measures of Strategic Motivations: A Critical Comment on Alvarez and Nagler", *British Journal of Political Science*, 32 (2002) 185-88.

²⁴ Alvarez and Nagler, 'A New Approach for Modelling Strategic Voting in Multiparty Elections', p. 60.

²⁵ Monroe and Rose, 'Electoral systems and unimagined consequences. Partisan effects of districted proportional representation'.

²⁶ For example, in the 1977 founding election in Spain, when strategic possible is still not possible by definition, the correlation between district magnitude and the PCE's vote shares was 0.54.

²⁷ See Lago, 'Rational Expectations or Heuristics? Strategic Voting in Proportional Representation Systems'. for further details.

²⁸ Richard Gunther, "Electoral laws, party systems, and elites: The case of Spain", *American Political Science Review*, 83 (1989), 835-58; Lago, 'Rational Expectations or Heuristics? Strategic Voting in Proportional Representation Systems'.

²⁹ Michael R. Alvarez, Frederick Boehmke and Jonathan Nagler, 'Strategic Voting in British Elections', *Electoral Studies*, 25 (2006), 1-19.

³⁰ Arthur Lupia and Matthew D. McCubbins, *The Democratic Dilemma. Can Citizens Learn What They Need To Know?* (New York: Cambridge University Press, 1998), p. 1.

³¹ Octavio Amorim Neto and Gary W. Cox, 'Electoral Institutions, Cleavage Structures and the Number of Parties', *American Journal of Political Science*, 41 (1997), 149-74; Matt Golder, 'Presidential Coattails and Legislative Fragmentation' *American Journal of Political Science*, 50 (2006), 34-48.

³² Tavits and Annus, 'Learning to make votes count: The role of democratic experience'.

³³ It is worth emphasizing that the first regional election was held at the same time than the third national election and then my analysis might be (weakly) biased in favour of the null hypothesis.

³⁴ Again all standard errors are clustered by electoral district to account for the non-independence in the data structure.

³⁵ Raymond Duch and Harvey D. Palmer, 'Strategic Voting in Post-Communist Democracy', *British Journal of Political Science*, 32 (2002), 63-91.

³⁶ Cox, *Making Votes Count*.

Table 1: Comparing electoral systems in Andalusia

<i>District</i>	<i>No. Elections did win a seat</i>		<i>District Magnitude</i>	
			<i>(range in seats)</i>	
	National elections (10 elections)	Regional elections (8 elections)	National elections	Regional elections
Almeria	0	4	5	11-12
Cadiz	5	8	8-9	15
Cordoba	8	8	6-7	12-13
Granada	3	8	7	13
Huelva	0	5	5	11
Jaen	1	7	6-7	12-13
Malaga	7	8	8-10	15-16
Sevilla	8	8	12-13	18
<i>Mean votes PCE/IU (/ %): National elections: 8.64; Regional elections; 11.93</i>				

Table 2: Incentive Structures for Strategic Voting in Andalusia

	$M \leq 5$	$M > 5$	<i>Election s</i>
$M > 5$	A. Strategic Voting	C. Sincere Voting	National
	B. Sincere Voting	D. Sincere Voting	Regional

Table 3: Strategic voting in national elections in Andalusia

Variables	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
$M \leq 5$	11.64**	11.64**	12.43**	11.64**	11.11**
	(3.76)	(3.79)	(3.75)	(3.79)	(4.39)
Non Concurrent Elections		-4.27	-3.48		
		(3.36)	(4.28)		
$M \leq 5$ * Non Concurrent Elections			-3.16		
			(5.73)		
First pair of elections				2.05	1.00
				(2.36)	(2.40)
$M \leq 5$ * First pair of elections					4.21
					(6.03)
Constant	133.34*	134.41*	134.21*	133.08*	133.21*
	**	**	**	**	**
	(2.27)	(2.88)	(3.11)	(2.29)	(2.39)
R-squared	0.02	0.02	0.02	0.02	0.02
Root MSE	39.00	39.27	39.60	39.31	39.64
N	64	64	64	64	64
# Clusters	8	8	8	8	8

Estimation is by ordinary least squares. Standard Errors in parenthesis.

p < 0.05; *p < 0.01

Table 4: Strategic voting in regional elections in Andalusia

Variables		<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
$M \leq 5$		-	-	-32.76*
		31.23**	31.23**	(14.13)
		(12.10)	(12.20)	
Non	Concurrent		0.43	-1.09
Elections			(3.56)	(3.55)
Interaction				6.11
				(9.39)
Constant		104.04*	103.93*	104.32**
		**	**	*
		(9.37)	(9.84)	(10.03)
R-squared		0.28	0.28	0.28
Root MSE		22.21	22.39	22.54
N		64	64	64
# Clusters		8	8	8

Estimation is by ordinary least squares. Standard Errors in parenthesis.

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