

# Show Me Your Friends: A Survey Experiment on the Effect of Coalition Signals

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Recent studies of coalition-directed voting suggest that what political parties say during a campaign can influence voter perceptions of the likelihood of certain coalitions and that this, in turn, may foster strategic voting in multiparty systems. Here, we expand this argument and show that preelection coalition signals also have the potential to influence voter perceptions of the parties themselves. By revealing their coalition preferences, parties provide information on where they stand on the political continuum. We test our argument using a survey experiment run during a regional election campaign in Spain in which we manipulated the coalition signals emitted by two parties: one, a traditional social democratic party and, the second, a new liberal party. Results show how coalition signals can significantly influence the party's position and, ultimately, affect voters' stated probability of voting, especially in the case of the recently founded party.

During election campaigns in multiparty systems, it is common for parties to discuss their, and their rivals', likely postelection coalition behavior. In many European party systems, liberal parties will tend to lean either toward parties to their left or, rather, to the conservatives, while social democrats will often seek out possibilities of building a coalition with other leftist parties or moving toward the center and reach an agreement with the liberals. Not unusually, such coalition-seeking behavior becomes a salient issue during election campaigns in which a fragmented parliament with no single party majority is expected. In the 2010 UK general election, for instance, much debate centered on the possible coalition choices of the Liberal Democrats, and both the Conservative and Labour parties claimed that by voting for the Liberal Democrats, voters risked supporting a Labour/Conservative government. Similarly, debates about the possible coalition allies of the Free Democratic Party (FDP) and the Social Democratic Party of Germany (SPD) have dominated many electoral campaigns in Germany.

There are certainly good reasons why the question of coalitions is salient during election campaigns since it has been shown to matter for voters, as expectations about postelection coalition formation can drive the strategic behavior of utility-maximizing voters in multiparty systems (Duch, May, and Armstrong 2010; Kedar 2005). In this article, we directly address the questions raised by this literature and argue that coalition signals can influence vote choice above and beyond a simple impact on voter expectations of government formation. It is our contention that these signals can, and often do, enter the voters' utility function through complementary channels because signals can have an effect on how voters perceive the parties: expressing a willingness to favor a specific coalition partner over another can be processed by voters as an additional piece of information on where the party stands ideologically and change their perceived distance to the party, thereby affecting vote choice at the polls.

Our study makes a novel contribution to the field on at least two key questions. First, through an experimental design,

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Data and supporting materials necessary to reproduce the numerical results in the article are available in the *JOP* Dataverse (<https://dataverse.harvard.edu/dataverse/jop>). An online appendix with supplementary material is available at <http://dx.doi.org/10.1086/693369>. This research was conducted in line with the ethical standards contained in the 1964 Declaration of Helsinki and its later amendments. Support for this research was provided by the Spanish Ministry of Economy and Competitiveness, through research grants CSO2013-42262-P and CSO2013-40870-R, and the Ramón y Cajal program (RYC-2012-10077).

it circumvents the causal identification problems faced by observational studies that have recently assessed the impact of coalition behavior on parties' images (e.g., Adams, Ezrow, and Weizen 2016; Falcó-Gimeno and Fernandez-Vazquez 2016; Fortunato and Adams 2015; Fortunato and Stevenson 2013; Spoon and Klüver 2017). Second, all these studies investigate the effects of coalition building post factum, that is, once a government has been formed. Instead, we specifically focus on the effect of coalition signals sent during election campaigns on perceptions about parties, which should be of greater consequence as voters have yet to cast their ballots. Experimental designs have also been used to study whether and how pre-election coalition signals affect voters' strategic or coalition-directed voting (Goodin, Güth, and Sausgruber 2008; Gschwend, Meffert, and Stoetzer 2017; Meffert and Gschwend 2011), but the question remains as to which mechanisms are activated by coalition signals that can influence voting, in particular, the one we propose here: the effect on parties' perceived positions. Our design allows testing for these mediated effects on vote choice.

In the very influential coalition-directed voting model proposed by Duch et al. (2010), the authors argue that the utility a voter  $i$  derives from a party  $j$  depends on a number of factors:

$$u_i(j) = \lambda \left\{ \beta \left[ U - \sum_{n=1}^{N_j} (x_i - Z_{c_n})^2 \gamma_{c_n} \right] + (1 - \beta) [U - (x_i - p_j)^2] \right\} + \Phi W_{ij}, \quad (1)$$

where  $x_i$  is the voter's ideological position, and  $Z_{c_n}$  is the position of each possible coalition that party  $j$  might enter, with (perceived) probability  $\gamma_{c_n}$ . As for party characteristics,  $p_j$  represents the party's ideological position, and  $W_{ij}$  is a vector of nonspatial attributes.

Duch et al. (2010) themselves argue that coalition signals shape the attractiveness of a party through coalition expectations ( $\gamma_{c_n}$ ): they affect the prospects of those coalitions the voter may (dis)favor. While this expectation is, of course, reasonable, we believe it in fact understates the importance of these signals. When parties signal their willingness to join a given coalition, they not only make that coalition more plausible in the eyes of voters. They also send information about themselves. Through these signals, parties reveal their political commitments, including their ideological position  $p_j$ , which also feed into Duch et al.'s (2010) utility function.

Therefore, in a context with, at least, some uncertainty as to where a party actually stands—as it is commonly the case (Fortunato, Stevenson, and Vonnahme 2016)—voters seeking to figure out the exact position of a party may rely on coalition signals. Specifically, we expect that a coalition

signal indicating that a party has the intention to form a postelectoral government coalition with a party to its right (left) moves a voter's perceived position of the party to the right (left). More formally, we can expect that the perceived location of a party  $j$  that sends a coalition signal  $s_c$  will depend on the previous perception of where the party stands ( $p_j$ ) plus the average position of the rest of the signaled coalition partners  $Z_{c_n, -j}$  with respect to the party's placement. Parameter  $\tau$  expresses the weight of the contribution of the coalition signal to the (updated) perception of the party location and is expected to be a function, mostly, of the previous uncertainty on where the party stands, as well as the intensity of the coalition signal:  $p_{j|s_c} = (1 - \tau)p_j + \tau Z_{c_n, -j}$ , which, rearranging, gives

$$p_{j|s_c} = p_j + \tau(Z_{c_n, -j} - p_j). \quad (2)$$

If we embed this prediction in the noncoalition part of the model in equation (1), we can easily see why coalition signals can affect voters' behavior: not only for coalition-related reasons but also through the change in the perceived ideological position of the party.

## IDENTIFICATION STRATEGY: A SURVEY EXPERIMENT

Identifying the causal impact of a coalition signal requires comparing what happens when an actual signal is sent out in one direction or another with what would have happened in the absence of such a signal (Decker and Best 2010). Clearly, in real world settings the counterfactual cannot be observed (Meffert and Gschwend 2012). For this reason research has resorted to experimental designs in which the treatment—the sending out of a coalition signal—can be manipulated holding all other variables constant.<sup>1</sup> In this article we follow this strategy, but we seek to balance internal and external validity considerations by embedding our experiment in a survey to the general population, fielded in the context of a real election campaign.

## The context

We used the 2015 campaign for the regional government of Valencia, Spain, as our research setting, as it allowed us to treat the coalition signals of two different parties in a highly realistic manner. After 20 years of government by the conservative Partido Popular (PP), they were generally expected to lose about half of their votes amid a series of corruption scandals, economic troubles, and a severe austerity program. All preelection polls pointed to a highly fragmented regional

1. An alternative strategy employed by the literature is counterfactual simulation, as pursued by Linhart (2009).

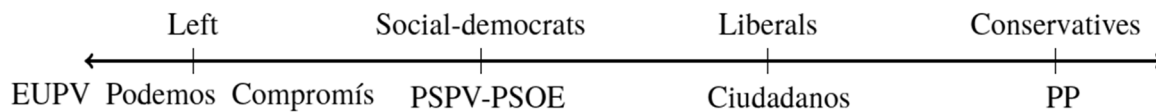


Figure 1. Valencian 2015 party system

parliament with several plausible postelection coalitions as the likely outcome of the vote.<sup>2</sup>

Much of the coalition-related discussion during the campaign revolved around a possible leftist alliance between the Socialists and the two left-wing parties (Compromís and Podemos). However, the Socialists deliberately avoided being too explicit about this possibility and considered alternative options as well. The emerging center-right liberal party Ciudadanos (Cs),<sup>3</sup> whom the media expected to enter into an eventual agreement with the conservatives, was also intentionally ambiguous about its intentions during the campaign. Figure 1 represents the Valencian party system and shows that, before the election, the two parties that might have entered into agreements in both directions were the social democrats and the liberals.

### Experimental design

Taking advantage of this uncertainty regarding the coalition choices, we designed an experiment in which we manipulated suggestions about the favored coalition strategy of two specific parties: the established social democratic PSPV-PSOE (Partit Socialista del País Valencià—Partido Socialista Obrero Español) and the new liberal Cs. We chose these two because both offered the possibility of making credible statements about a range of postelection coalition preferences, including no coalition, a coalition to their right, or a coalition to their left. This choice allows us to fully manipulate the coalition signals but of course has consequences for the scope conditions of our findings, as they refer to a case in which the senders had alternative potential coalition options in opposite directions.

For each of the two parties, we presented respondents with a randomly varying vignette in which political analysts suggested either that the party was not willing to form any coalition after the election (Rule Out treatment) or that it was intending to join a coalition to its right (Cs being the right-

leaning partner for the PSPV-PSOE and the PP the rightist partner for Cs) or to its left (the PSPV-PSOE being the leftist partner for Cs, and a combination of left-wing parties the partners for the PSPV-PSOE). The experiment also included a control group that received a placebo text simply stating that there would be a regional election, meant to control for the regional election priming effect of the treatments. In table 1 we present the basic structure of the  $3 \times 2$  design and placebo, resulting in seven different treatments. The table presents the headlines of the vignettes, while the original vignettes and complete texts (original and translated) can be consulted in appendix F (apps. A–F available online).

The vignettes were designed so as to make a credible claim that one of the two parties would favor a specific coalition strategy after the election. To avoid outright deception, the claim was attributed to undefined political analysts but presented as being based on the party representatives' line of thinking. While this is not a signal sent directly by the party, it can fit in a nonstrict definition of a coalition signal, since signals can provide "reliable clues about which potential coalition partners a party implicitly prefers" (Decker and Best 2010, 168).

The experiment was fielded during the May 24, 2015, regional election campaign (May 12–18) to an online sample of 1,003 respondents from the Valencia region (143 per experimental condition, on average), drawn from an online panel by the company Netquest, using age and education quotas. Details on the composition are discussed in appendix B. After the treatment was administered, we asked our respondents about the perceived left-right position of the parties (on a 0–10 scale) and the declared probability of voting for each party in the upcoming regional election (propensity to vote, PTV), ranging from 0 ("I would never vote for this party") to 10 ("I am sure I will vote for this party").

### RESULTS

First, we assess whether our treatments were effectively able to shift postelection coalition expectations, as expected in Duch et al. (2010). Reassuringly, results show that our vignettes significantly affected the expectations of postelection coalition behavior of the liberals ( $\chi^2 = 67.99, p < .001$ ) and had a more modest effect, although still statistically significant, for the Socialist Party ( $\chi^2 = 28.22, p < .001$ ). We discuss these effects in detail in appendix C.

2. After the election, the PP did indeed fail to obtain an absolute majority. In fact, no two parties alone could command more than 50% of the seats: any majority coalition required at least three. Negotiations among the leftist parties started immediately after the election, although the Socialists also considered the possibility of an alliance with the liberals and the abstention of the conservatives to bypass the leftist demands. In the end, a leftist coalition was formed.

3. The term "liberal" here is used in the classical liberalism sense, rather than referring to progressivism.

Table 1. Treatment Headlines

	Liberals	Social Democrats
Rule out	Analysts suggest that Ciudadanos will not make any agreement after the election	Analysts suggest that the PSPV-PSOE will not make any agreement after the election
Right-leaning coalition	Analysts suggest a possible agreement of Ciudadanos with the PP	Analysts suggest a possible agreement of the PSPV-PSOE with Ciudadanos
Left-leaning coalition	Analysts suggest a possible agreement of Ciudadanos with the PSPV-PSOE	Analysts suggest a possible agreement of the PSPV-PSOE with Compromís, EUPV, and Podemos
Control	The Valencian Parliament, renewed	

Note. EUPV = Esquerra Unida del País Valencià; PP = Partido Popular; PSPV-PSOE = Partit Socialista del País Valencià—Partido Socialista Obrero Español.

Second, in figure 2, we turn to the analysis of the effects of the coalition signals on the perceived left-right placement of parties. For the liberals, the suggestion that their party might form an alliance with the conservative party does have the expected effect. On average, it is placed almost half a point further to the right on the 0–10 left-right scale with respect to the placebo condition. In contrast, ruling out any coalition or suggesting an agreement with the social democratic party does not make any difference with respect to the control group. For the social democrats, in turn, we find a similar

pattern: suggesting a coalition toward the right moves their perceived position almost half point to the right (significant only at the 90% level). Signaling a left-wing coalition does not seem to produce an update in respondents’ priors with respect to the Socialists’ ideological stance. In this case, also, ruling out any coalition whatsoever has an almost significant effect on the party’s perceived position, moving it to the right compared to the position reported by the control group, perhaps because of the strong prior held by most voters that they would form a left coalition.

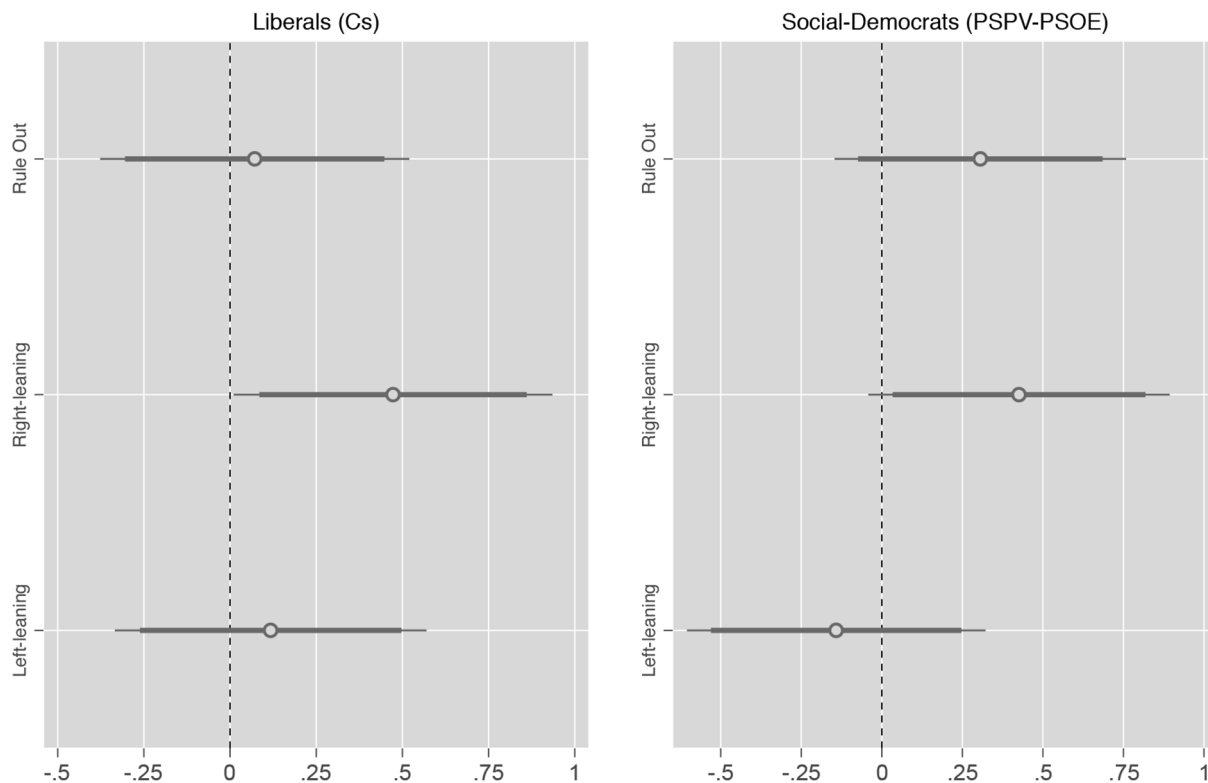


Figure 2. Ideological placement (90%–95% confidence intervals, marginal effects vs. placebo)

Table 2. Average Causal Mediation Effects on Propensity to Vote

	Liberals (Cs)		Social Democrats (PSPV-PSOE)	
	Left Leaning	Right Leaning	Left Leaning	Right Leaning
Position ( $p_j$ )	-.007	.592**	.058	.054

Note. Cs = Ciudadanos; PSPV-PSOE = Partit Socialista del País Valencià—Partido Socialista Obrero Español.

\*\*  $p < .05$ .

Some coalition signals affected the perceived location of the parties, while others did not. A detailed discussion on why this might be the case is beyond the scope of this article, but we can outline some conjectures. First, pretreatment effects might make some of our treatments stronger/more credible. Second, signals toward coalitions that are closer to where the party stands a priori should have weaker effects. And third, coalition signals might have an effect on non-spatial elements of the party image, such as the extent to which citizens perceive it to be an office-seeking, as opposed to policy-seeking, agent. We have some evidence (discussed in app. D) that, indeed, the coalition signals were also able to move perceptions of the parties' priorities in terms of office versus policy considerations.

Certain coalition signals, therefore, seem to exert a significant effect on at least one element of the function that allows voters to evaluate from which party they can derive greatest utility, in accordance with Duch et al.'s (2010) CDV model. But do these effects in turn shape voters' willingness to vote for the party sending the signal? Through their impact on the perceived position of (and distance to) the party, these signals should also affect vote choice in elections. Therefore, the question is really whether mediated effects of coalition signals exist.

To test this idea we ran a causal mediation analysis in which two models were estimated. First, we take the mediator as the dependent variable (in our case, the distance  $d_{ij} = (x_i - p_j)^2$  that weighs in the utility function). Specifically,  $d_{ij} = \alpha_2 + \beta_2 s_{ijc} + \varepsilon_{2i}$ , where  $s_{ijc}$  refers to the treatment variable (the coalition signal in our case). Then, predicted values are generated at two different values of the treatment,  $s_{ijc} = 1$  and  $s_{ijc} = 0$ , which gives  $\hat{d}_{ij}(1)$  and  $\hat{d}_{ij}(0)$ , respectively. A second model is estimated in which the dependent variable is the actual outcome of interest (in our case, the PTV for the sender of the signal):  $PTV_{ij} = \alpha_3 + \beta_3 s_{ijc} + \theta d_{ij} + X_i + \varepsilon_{3i}$ , where  $X_i$  is a set of relevant covariates (in our case, party identification, political sophistication, gender, age, and age squared). Then, PTV<sub>ij</sub> is predicted at  $s_{ijc} = 1$ , first setting  $d_{ij} = \hat{d}_{ij}(0)$  and then  $d_{ij} = \hat{d}_{ij}(1)$ . The average difference of these two predictions is, according to Imai et al.

(2011), a consistent estimate of the average causal mediation effect (ACME) of the treatment.

In our case, we expect a positive ACME of the coalition signal through  $p_j$ , but only in the case of those for whom the signaled coalitional behavior should make the party a more attractive option, that is, for voters who are on the same side of the ideological spectrum as the signal. Therefore, the ACME of a left- (right-) leaning signal is calculated for those to the left (right) of the party.<sup>4</sup> Indeed, as table 2 shows, a signal indicating that the liberal party is likely to reach a postelectoral agreement with the conservatives appears to give them an electoral boost among right-wing voters by moving the party's perceived ideological position to the right.<sup>5</sup>

In order to provide an illustration of the substantive importance of this result, we can calculate the total effect of the right-leaning signal on the PTV for Cs. It would have a negative impact of  $-0.74$  points on the PTV for those voters located to the left of Cs and a positive impact of 1.25 points for those located to the right of the liberals. Although translating a PTV change into a change of actual vote shares is far from straightforward and requires a strong set of assumptions, for purely illustrative purposes we can present an approximate figure. If we regress a dichotomous variable, taking a value of 1 if the respondent's declared intention is to vote for Cs and 0 otherwise, on the PTV, we obtain an average marginal effect of about 5.7 percentage points for each additional point of PTV. Therefore, a right-leaning signal from Cs would imply roughly a loss of 4.2 percentage points among the voters located to its left and a gain of 7.1 among voters to its right. These figures, in a fragmented scenario, are potentially highly relevant in terms of viable coalitions and the likelihood of participating in government.

4. To avoid using posttreatment information to define a pretreatment condition, we took the average of attributed positions to Cs and PSPV-PSOE in the placebo group (6.2 and 3.9, respectively) as the reference points to consider a voter's left-right placement to the right or to the left of the party.

5. The analyses have been run with the R package mediation (Tingley et al. 2014) and models estimated through ordinary least squares. Further details, robustness checks, and sensitivity analyses can be found in app. E.

## CONCLUSION

According to the findings presented in this article, parties should be careful when suggesting a specific postelection coalition behavior during the campaign, as it might not only make the suggested choice more likely in the eyes of the voters, but it could also influence how the party itself is perceived by voters. Our results show that our experimental manipulations of preelection coalition signals not only were able to affect respondents' coalition expectations but also had an impact on the perceived ideological position: a right-leaning coalition signal shifted both parties' perceived ideological stances to the right (around 0.5 points on a 0–10 scale). We have also shown that coalition signals can enter the vote decision through this mechanism.

Several questions remain open. First, coalition signals might matter differently for established and new parties, depending on the prior information voters have about party preferences. Our results, which show a greater effect for the new party, point in that direction, but of course we are not able to make any general statement. Second, coalition signals might have effects on other party images, beyond their influence on the perceived location in the left-right dimension. They could be interpreted by voters as signals on the relative salience of different issues for the party and could also reveal information on the party's willingness to trade off policy concerns for office opportunities.

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## A RESULTS TABLES

In the main text we present our main results in figures. Table A.1 presents the mean values (and 95% confidence intervals) of our outcomes of interest across treatments, together with the upper and lower bounds of the 95% confidence intervals.

Table A.1: Left-right perceived position. Average values, by treatment group

	<b>Liberals</b>		<b>Social-democrats</b>	
	Mean	[95% CI]	Mean	[95% CI]
Placebo	6.07	[5.73 – 6.41]	3.86	[3.56 – 4.17]
Rule out	6.14	[5.85 – 6.43]	4.17	[3.83 – 4.51]
Right-leaning	6.54	[6.24 – 6.84]	4.29	[3.96 – 4.62]
Left-leaning	6.19	[5.84 – 6.53]	3.72	[3.39 – 4.05]



## B SAMPLE

As discussed in the paper, the sample on which we run the experiment was collected on-line, among the panel members of the commercial company Netquest. The panel does not allow for self-registration, so participants were actively recruited by the company. Also, a number of controls on professionalization and bad quality responses are put in place by Netquest. For detailed information on the sample, see their [Panel Book](#) available on-line.

In the sampling process, we introduced age and education quotas to reduce the bias of on-line samples towards the younger and more educated. Despite these quotas, the sample still under-represents older voters, especially the over-65s. Table B.1 compares the basic socio-demographics of our sample with the data from a face-to-face probability sample fielded during the same period as ours by the official Spanish government center for sociological research: [The 2015 pre-election survey for the Valencian Community](#).

As it can easily be seen in the table, our sample deviates significantly in that it over-represents younger and more educated respondents, and also leans towards the left of the ideological spectrum. We have not been able to find any heterogeneous effects of our treatments that might suggest that this sampling issues might bias our treatment estimates, but nonetheless this is always a concern with non-probability samples.

Table B.1: Sample composition and differences *vis à vis* a probability sample

	Sample	CIS survey	Difference
<b>Education</b>			
No education	0.1	7.1	-7
Primary	1.7	15.9	-14.2
Secondary	28.2	43.5	-15.3
Professional	29.9	16.2	+13.7
University	40.1	17	+23.1
<b>Gender</b>			
Female	52.1	51.1	+1
Male	47.9	48.9	-1
<b>Age</b>			
18 to 24	13.9	7.4	+6.4
25 to 34	23.4	17.3	+ 6.1
35 to 44	32.1	21	+11.1
45 to 54	19.7	18.3	+1.4
Over 55	10.9	35.9	-25
<b>Ideology</b>			
1 (Extreme left)	4.4	4.9	-0.5
2	13.5	4.4	+9.1
3	19.1	11.4	+7.7
4	13.8	19.6	-5.9
5	31	30.6	+0.4
6	7.5	10.5	-3.0
7	6.5	8.6	-2.1
8	2.1	6.5	-4.4
9	0.8	1.9	-1.1
10 (Extreme right)	1.4	1.6	-0.2

Left-right scale in the experiment was measured in a 0-10 scale. We collapsed the 0 and 1 categories for comparison

## C MANIPULATION CHECKS AND RANDOMIZATION TEST

In this section we present the results of a randomization check and the manipulation checks we included at the end of the questionnaire. Table C.1 shows the share of correct and incorrect answers to a manipulation check included at the end of the questionnaire, in which we asked respondents to recall what the vignette they just read was about. They were given three options (corresponding to the different treatments for each part) plus an additional ‘Don’t know’ option. In the placebo condition they received an alternative manipulation check in which they were asked to recall which type of elections the vignette was referring to (regional, local or general). Results indicate that for all treatments, 80.3% of the respondents got it right, while around 19% failed the manipulation check or answered ‘Don’t know’.

Table C.1: Manipulation checks

			<b>Correct</b>	<b>Incorrect</b>	<b>DK</b>
<b>Lib. (Cs)</b>	<b>Treatments</b>	Placebo	78.8	17.12	4.11
		Alone	78.7	9.33	12.0
		Lib-Con	89.5	3.8	6.8
		Lib-SD	78.6	12.4	8.9
			<b>Correct</b>	<b>Incorrect</b>	<b>DK</b>
<b>SD (PSOE)</b>	<b>Treatments</b>	Placebo	78.8	17.12	4.11
		Alone	81.2	12.9	5.8
		SD-Lib	76.3	11.8	11.8
		SD-Left	80.0	10.71	9.29

Row percentages

In table C.2 we present the output of a multinomial logistic regression model in which we regress treatment assignment on a number of individual characteristics measured pre-treatment. We include both the standard sociodemographics (education, gender, age) as well as political variables such as political knowledge, interest in politics, ideology and closeness to each party. Results show how, despite some occasional significant coefficients, the overall model does not fit the data better than a null model, as shown by the statistically insignificant  $\chi^2$  test of the whole model.

Table C.2: Randomization test: Multinomial logit on treatment assignment

	$T_1A$ b/se	$T_2A$ b/se	$T_3A$ b/se	$T_2B$ b/se	$T_3B$ b/se	Placebo b/se
Political Sophistication	-0.04 (0.14)	0.05 (0.14)	0.04 (0.14)	0.01 (0.14)	-0.22 (0.15)	0.03 (0.14)
Interest in politics	-0.06 (0.16)	0.14 (0.16)	-0.01 (0.16)	0.22 (0.16)	0.03 (0.16)	0.12 (0.16)
Education	-0.12 (0.12)	-0.28** (0.13)	-0.05 (0.13)	-0.19 (0.13)	-0.22* (0.12)	-0.10 (0.12)
Gender	0.03 (0.25)	0.02 (0.26)	-0.25 (0.26)	-0.13 (0.26)	0.03 (0.26)	-0.16 (0.26)
Age	0.06* (0.03)	0.01 (0.03)	-0.06** (0.03)	0.02 (0.03)	0.04 (0.03)	-0.02 (0.03)
Age squared	-0.00* (0.00)	-0.00 (0.00)	0.00* (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
Left-right	0.06 (0.10)	0.06 (0.10)	0.16 (0.10)	0.11 (0.10)	0.21** (0.10)	0.25*** (0.10)
Party Closeness						
Cs	0.10 (0.11)	0.21* (0.11)	0.14 (0.11)	0.07 (0.11)	0.04 (0.11)	0.06 (0.11)
PP	0.01 (0.14)	-0.13 (0.14)	-0.02 (0.14)	-0.08 (0.14)	0.05 (0.14)	0.12 (0.14)
PSPV	-0.19* (0.11)	-0.23** (0.11)	-0.09 (0.11)	-0.19* (0.12)	-0.18 (0.12)	-0.22* (0.11)
Compromís	-0.02 (0.14)	-0.20 (0.14)	-0.09 (0.14)	-0.16 (0.14)	-0.18 (0.14)	0.12 (0.14)
IU	0.36** (0.15)	0.38** (0.16)	0.14 (0.15)	0.34** (0.15)	0.16 (0.15)	0.16 (0.15)
Podemos	-0.11 (0.12)	-0.11 (0.12)	-0.11 (0.12)	-0.12 (0.12)	-0.02 (0.12)	-0.25** (0.12)
Constant	-0.69 (1.22)	0.75 (1.26)	0.28 (1.23)	0.36 (1.26)	0.03 (1.23)	-0.61 (1.25)
N	1,003					
Pseudo- $R^2$	0.022					
log likelihood	-1,907.5					
$\chi^2$	86.1 (78)					
P-value	<b>0.249</b>					

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01  
 $T_1B$  is the reference category

## D ADDITIONAL DEPENDENT VARIABLES

### D.1 Treatment effects on coalition expectations

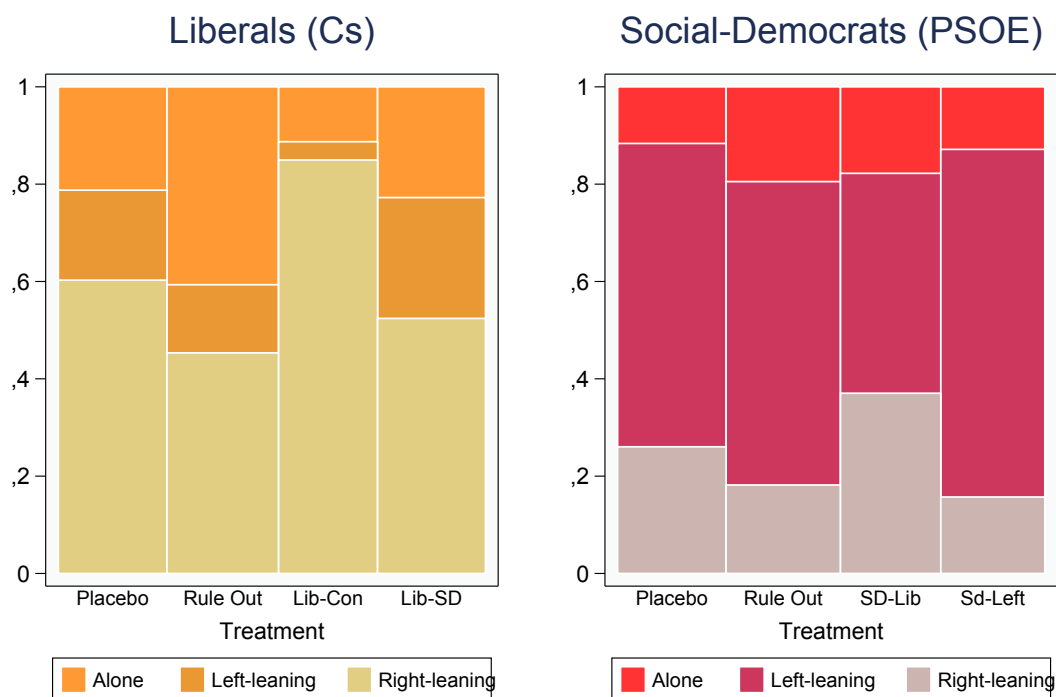
In order to determine whether our manipulations did have an effect on respondents' expectations of post-election coalitions, at the end of the questionnaire, we asked our respondents which coalition behavior they thought was most likely for each party. This allows us to test [Duch et al.'s \(2010\)](#) conjecture that coalition signals influence voters' coalition expectations. In table D.1 and figure D.1 we can see how the vignettes significantly affected the expectations of post-election coalition behavior of the liberals and the socialist party.

Table D.1: Treatments by post-treatment expectations. Row percentages and adjusted residuals

		<b>Expect Right- leaning</b>	<b>Expect Left-leaning</b>	<b>Expect Alone</b>	
<b>Liberals (Cs)</b>	<b>Treatments</b>	Placebo	60.27	18.49	21.23
			[0.048]	[1.155]	[-1.029]
		Alone	45.33	14.00	40.67
			[-4.299]	[-0.593]	[5.401]
		Lib-Con	84.96	3.76	11.28
		[6.679]	[-4.270]	[-4.017]	
	Lib-SD	52.41	24.83	22.76	
		[-2.188]	[3.587]	[-0.529]	
<i>Pearson <math>\chi^2=67.99, p&lt;.001</math></i>					
		<b>Expect Right- leaning</b>	<b>Expect Left-leaning</b>	<b>Expect Alone</b>	
<b>Soc-Dem (PSOE)</b>	<b>Treatments</b>	Placebo	26.03	62.33	11.64
			[0.664]	[0.517]	[-1.483]
		Alone	18.18	62.34	19.48
			[-1.976]	[0.539]	[1.605]
		SD-Lib	37.04	45.19	17.78
		[4.055]	[-4.167]	[0.844]	
	SD-Left	15.71	71.43	12.86	
		[-2.639]	[3.035]	[-0.986]	
<i>Pearson <math>\chi^2=28.22, p&lt;.001</math></i>					
Adjusted residuals in brackets					

In the placebo condition, 60% expected a right-leaning coalition, 18% a left-leaning coalition and 21% did not expect the liberals to join any coalition whatsoever. Under the rule out treatment,

Figure D.1: Spine plots by party. Bars indicate treatment conditions and colors refer to post-treatment expected coalition strategies for each party.



the share of respondents that expected the liberal party to choose to be alone after the election doubled up to 40%, while in the Right-leaning treatment condition, those that expected such an agreement add up to 85%. The left-leaning treatment seems to have been perceived as less credible for our respondents, but nonetheless it increased the proportion of people expecting such a coalition from 18% in the placebo group to almost 25% in the treatment group.

In the case of the social-democrats, our manipulations had a somewhat weaker effect on their expected post-election coalition behavior. In the control group over 60% expected a coalition with the leftist parties, 26% a coalition with the liberals and only about 12% of the sample did not expect the social-democrats to join a coalition. The *no coalition* condition doubles this share up to 19.5%, while under the right-leaning treatment those that expect such a coalition go up to 37%. Finally, among those that received the left-leaning treatment, over 70% expected such a coalition to occur.

Overall, these results show that the treatments affected the participants' expectations about the post-election coalitions. The fact that the effect is clearer for the new, liberal party Cs than

it is for the established social-democrat PSOE can relate to differences in the amount of prior information voters have with regards old and new parties although, of course, other differences between the two parties could be driving this particular result.

## D.2 Non-spatial characteristics: Office-seekingness

Existing evidence is scarce, if not entirely absent, as to the extent to which coalition behavior impacts other aspects of a party's image, beyond perceived ideological placement. This is particularly surprising given the abundant literature that examines the conflicting goals of parties when having to decide between office, policy, or votes (e.g. Müller & Strøm, 1999). If a conflict does exist between these three objectives, it must be because seeking office at times requires adopting political strategies that some voters may lament. Among these, the process of choosing coalition partners in order to enter office is likely to be significant.

This possibility is important in the context of our experiment because a change in the perceived propensity to seek office could, in theory, act as a substitute of a change in the perceived ideological placement. A party signaling its willingness to join a coalition with a party to its right(left), can be regarded by voters as disclosing its 'true' position to the right(left) of where it stood, or on the contrary, as more willing to compromise its ideological stance in exchange for office.

A fairly direct way to test the implications of this argument is to evaluate the effect that coalition signals have on voter perceptions of a party's propensity to seek office vs. its propensity to seek to implement its policy objectives ('office-seekingness' vs. 'policy-seekingness'). In principle, the announcement of an intention to form a coalition with another party is likely to make voters believe office is the party's main priority. By contrast, a signal indicating that the party *ex ante* rules out any possibility of forging alliances with other parties following the election is likely to increase voter perception of the ideological 'purity' of the party: attaining office would not be achieved to the detriment of policy priorities. It is true that, theoretically, there is nothing in the decision to join a coalition that is intrinsically less policy-seeking than staying in opposition. Indeed, failing to gain office may well entail the formation of a government that implements policies which are further removed from the preferences of the party (and its

voters) than would have been the case had the party entered a coalition government.

Nonetheless, here we assume office and policy priorities to present a trade-off for parties (at least in the minds of voters), and we used a measurement instrument based on this idea of a trade-off. Hence, there are reasons to believe that a government coalition signal will weigh in the ‘office-seekingness’ image of the party (and, by extension, downgrade its policy-seeking image). In order to measure ‘policy-seekingness’, we employed a 4-point scale, ranging from *‘Its top priority is reaching office’* to *‘Its top priority is its political platform’*, with the intermediate points being *‘It is mostly concerned about reaching office, although it also cares about its political platform’* and *‘It is mostly concerned about its political platform, although it also cares about reaching office’*.

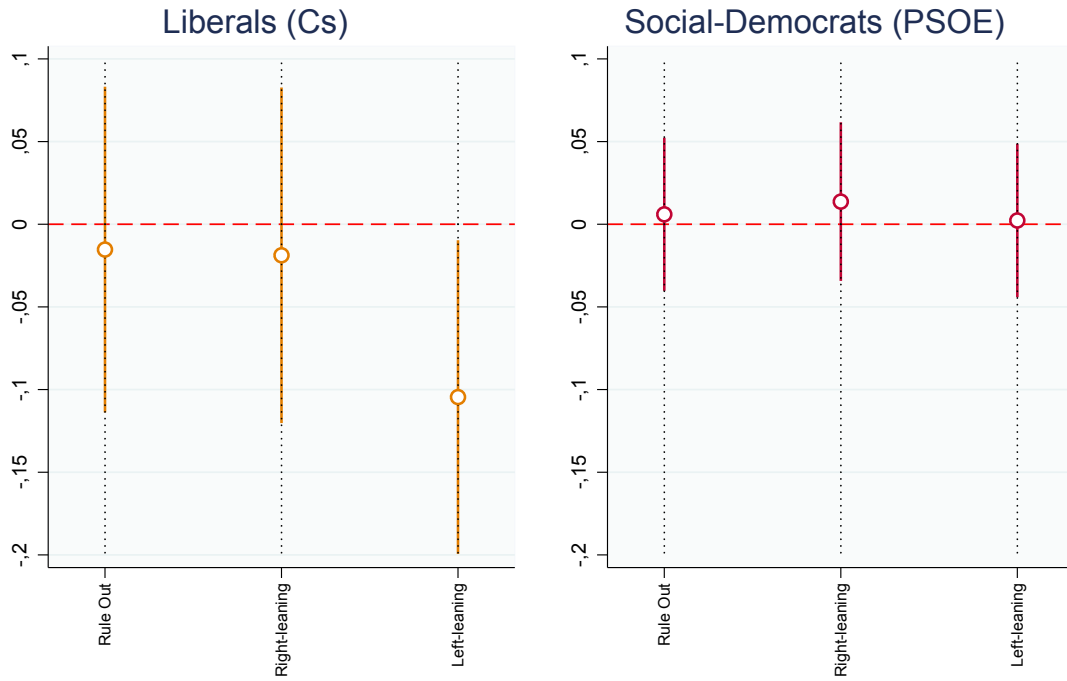
Figure D.2 shows the treatment effects on this outcome measure. As it can be seen, the coalition signals do not modify the social-democratic party’s image, while only the Liberals–Social-democrats treatment has an effect on the respondents’ perception of the liberals. When exposed to this treatment, respondents tend to see this party as being less policy-seeking (and more office-seeking) than in the other conditions. Again, it seems that coalition signals only affect party images when there is greater uncertainty as to the political commitments of the party (as is presumably the case with new parties).<sup>6</sup>

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<sup>6</sup> Note that in these two cases, the variance of perceived policy-seekingness of the liberal party is much higher than for the social-democratic party.



Figure D.2: Policy-Seekingness (95% CI, marginal effects vs placebo)



## E ROBUSTNESS CHECKS

In this section we discuss some additional analyses conceived as robustness checks. First, we focus on the issue of the respondents that failed to recall the contents of the vignette at the end of the survey. Then, we present alternative specifications of the mediation analysis.

### E.1 Non-compliance

We run the analyses of the paper excluding those respondents that did not answer the manipulation check correctly. Results, presented in tables E.1 and E.2, prove essentially stable, so our main conclusions are not critically driven by inattentive respondents in either direction, despite the reduction of the sample size and the slightly wider confidence intervals.

Table E.1: Liberals. Average values, by treatment group

	<b>Position (<math>p_j</math>)</b>	
	Mean	[95% CI]
Placebo	6.11	[5.72 – 6.50]
Rule out	6.24	[5.92 – 6.55]
Right-leaning	6.64	[6.32 – 6.96]
Left-leaning	6.32	[5.92 – 6.72]

Table E.2: Social-democrats. Average values, by treatment group

	<b>Position (<math>p_j</math>)</b>	
	Mean	[95% CI]
Placebo	4.09	[3.76 – 4.41]
Rule out	3.99	[3.60 – 4.35]
Right-leaning	4.26	[3.93 – 4.59]
Left-leaning	3.73	[3.38 – 4.08]

However, if we characterize the failure to respond the manipulation checks correctly as an instance of non-compliance to our treatment, we are facing an issue of two-sided non-compliance. Respondents that, despite receiving a certain manipulation do not process it as such —due to inattentiveness, motivated reasoning or any other reasons— can be thought of as non-compliers in our experiment. In this conceptualization of the problem, the treatment effects estimated so far would equal to Intention-To-Treat effects, and simply dropping the non-

compliers from the analysis would result in biased estimates of the treatment effects. In order to get a more valid estimation of the treatment effects, we can compute the Complier-Average Causal Effect (CACE), using treatment assignment as an instrument of the response to the manipulation check (Gerber & Green, 2012; Imbens & Rubin, 2015). In tables E.3 and E.4 we compare the ITT (estimated via simple OLS regressions) and the CACEs, estimated via 2SLS in which treatment assignment becomes an instrument of actual reception of the treatment. As expected, the IV analysis produces larger estimates of our treatment effects, but there are not any other important changes with respect to our baseline estimation.

Table E.3: Liberals. Intention-To-Treat and Causal Average Effect on the Compliers

	Position ( $p_j$ )	
	ITT	CACE
Rule out	0.07 (0.23)	0.04 (0.28)
Right-leaning	0.47** (0.24)	0.53** (0.26)
Left-leaning	0.12 (0.23)	0.08 (0.27)
N	574	574

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table E.4: Social-Democrats. Intention-To-Treat and Causal Average Effect on the Compliers

	Position ( $p_j$ )	
	ITT	CACE
Rule out	0.31 (0.23)	0.37 (0.27)
Right-leaning	0.43* (0.24)	0.58* (0.30)
Left-leaning	-0.14 (0.24)	-0.25 (0.28)
N	575	575

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## E.2 Mediation

Here we present a replication of the mediation analyses with controls in the first equation. The ACME estimates that they yield are very similar to those provided in the main text.

Table E.5: Average Causal Mediation Effects on PTV (with controls in the first equation)

	<b>Lib (Cs)</b>		<b>SocDem (PSOE)</b>	
	Left-leaning	Right-leaning	Left-leaning	Right-leaning
Position ( $p_j$ )	-0.029	0.588**	0.011	0.053

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Mediator equation:  $d_{ij} = \alpha + \beta_1 CS_{ij} + \beta_2 OtherCS_i + \beta_3 PID_{ij} + \beta_4 Sophistication_i$

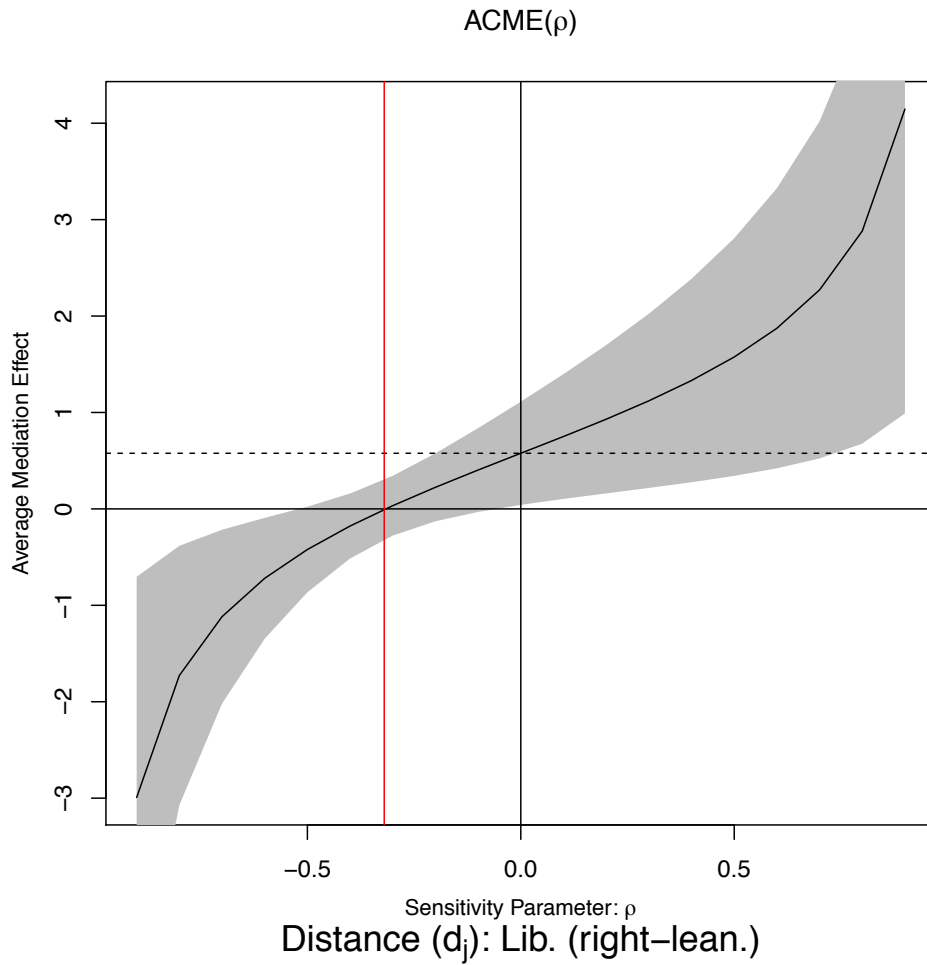
$+ \beta_5 Education_i + \beta_6 Female_i + \beta_7 Age_i + \beta_8 Age_i^2 + \epsilon_i$

Outcome equation:  $PTV_{ij} = \alpha' + \theta d_{ij} + \beta'_1 CS_{ij} + \beta'_2 OtherCS_i + \beta'_3 PID_{ij} + \beta'_4 Sophistication_i$

$+ \beta'_5 Education_i + \beta'_6 Female_i + \beta'_7 Age_i + \beta'_8 Age_i^2 + \epsilon'_i$

Additionally, we run sensitivity analyses to test the extent to which our estimations of the average mediation effects hinge on the sequential ignorability assumption. The intention of these analyses is to show how sensitive are the results to a violation of this assumption, namely that there is no confounder we have not accounted for that have effects on both the mediator and the outcome. Figure E.1 plots the true ACME against the sensitivity parameter  $\rho$  that indicates the degree of correlation between the error terms in the mediator and outcome regression models. The note below the figure shows how large should be the sensitivity parameter for the ACME to disappear (vertical red line in the plots). As it can be seen, the Average Causal Mediated Effect of the right-leaning signal of the liberal party that operates through the distance perceived by the voter to the party seems rather robust: the  $\rho$  that would make the indirect effect to vanish is large enough (greater than |.3|).

Figure E.1: Sensitivity analyses of the ACME estimations



NOTE: ACME=0 at  $\rho = -.32$ . 90% CI displayed.

Finally, we present the vignettes as they were received by our subjects, together with an English translation of each one.

Figure F.1: Vignette Ciudadanos - Rule Out

## Los Analistas apuntan que Ciudadanos no pactará con ninguna formación tras las elecciones

Redacción. 10/05/2015

Diversos analistas políticos consultados coinciden que, dadas las declaraciones y señales que ha mandado la formación, existe una probabilidad muy elevada que tras las elecciones autonómicas del próximo 24 de mayo Ciudadanos no pacte la formación de una coalición con ninguna formación política. El partido quiere consolidarse como alternativa de gobierno en la Comunidad Valenciana.



**Translation:** *Analysts suggest that Ciudadanos will not make any agreement after the election. Several political analysts agree that, given the statements and signals sent by the party, there is a high probability that, following the upcoming regional elections of the 24th of May, Ciudadanos will not join a coalition with any other political party. The party wants to confirm itself as a government alternative for the Valencian region.*

Figure F.2: Vignette Ciudadanos - Popular Party

## Los Analistas apuntan a un posible pacto de Ciudadanos con el PP

Redacción. 10/05/2015

Diversos analistas políticos consultados coinciden que, dadas las declaraciones y señales que ha mandado la formación, existe una probabilidad muy elevada que tras las elecciones autonómicas del próximo 24 de mayo Ciudadanos pacte la formación de una coalición con el Partido Popular, si los resultados lo permiten. Algunos gestos de la formación indican que probablemente se decantarán por esta opción de gobierno.



**Translation:** *Analysts suggest a possible agreement of Ciudadanos with the PP. Several political analysts agree that, given the statements and signals sent by the party, there is a high probability that, following the upcoming regional elections of the 24th of May, Ciudadanos will join a coalition with the Popular Party, if results allow. Several gestures made by the party point that this will probably be the chosen option.*

Figure F.3: Vignette Ciudadanos - Socialist Party

## Los Analistas apuntan a un posible pacto de Ciudadanos con el PSPV-PSOE

Redacción. 10/05/2015

Diversos analistas políticos consultados coinciden que, dadas las declaraciones y señales que ha mandado la formación, existe una probabilidad muy elevada que tras las elecciones autonómicas del próximo 24 de mayo Ciudadanos pacte la formación de una coalición con el PSPV-PSOE, si los resultados lo permiten. Algunos gestos de la formación indican que probablemente se decantarán por esta opción de gobierno.



**Translation:** *Analysts suggest a possible agreement of Ciudadanos with the PSPV-PSOE. Several political analysts agree that, given the statements and signals sent by the party, there is a high probability that, following the upcoming regional elections of the 24th of May, Ciudadanos will join a coalition with the Socialist Party, if results allow. Several gestures made by the party point that this will probably be the chosen option.*



Figure F.4: Vignette Socialist Party - Rule Out

## Los Analistas apuntan que el PSPV-PSOE no pactará con ninguna formación tras las elecciones

Redacción. 10/05/2015

Diversos analistas políticos consultados coinciden que, dadas las declaraciones y señales que ha mandado la formación, existe una probabilidad muy elevada que tras las elecciones autonómicas del próximo 24 de mayo el PSPV-PSOE no pacte la formación de una coalición con ninguna formación política. El partido quiere consolidarse como alternativa de gobierno en la Comunidad Valenciana.



**Translation:** *Analysts suggest that the PSPV-PSOE will not make any agreement after the election. Several political analysts agree that, given the statements and signals sent by the party, there is a high probability that, following the upcoming regional elections of the 24th of May, the PSPV-PSOE will not join a coalition with any other political party. The party wants to confirm itself as a government alternative for the Valencian region.*

Figure F.5: Vignette Socialist Party - Ciudadanos

## Los Analistas apuntan a un posible pacto del PSPV-PSOE con Ciudadanos

Redacción. 10/05/2015

Diversos analistas políticos consultados coinciden que, dadas las declaraciones y señales que ha mandado la formación, existe una probabilidad muy elevada que tras las elecciones autonómicas del próximo 24 de mayo el PSPV-PSOE pacte la formación de una coalición con el Ciudadanos, si los resultados lo permiten. Algunos gestos de la formación indican que probablemente se decantarán por esta opción de gobierno.



**Translation:** *Analysts suggest a possible agreement of the PSPV-PSOE with Ciudadanos. Several political analysts agree that, given the statements and signals sent by the party, there is a high probability that, following the upcoming regional elections of the 24th of May, the PSPV-PSOE will join a coalition with Ciudadanos, if results allow. Several gestures made by the party point that this will probably be the chosen option.*

Figure F.6: Vignette Socialist Party - Left Parties

## Los Analistas apuntan a un posible pacto del PSPV-PSOE con Compromís, EUPV y Podemos

Redacción. 10/05/2015

Diversos analistas políticos consultados coinciden que, dadas las declaraciones y señales que ha mandado la formación, existe una probabilidad muy elevada que tras las elecciones autonómicas del próximo 24 de mayo el PSPV-PSOE pacte la formación de una coalición con formaciones como Compromís, Podemos o Esquerra Unida, si los resultados lo permiten. Algunos gestos de la formación indican que probablemente se decantarán por esta opción de gobierno.



**Translation:** *Analysts suggest a possible agreement of the PSPV-PSOE with Compromís, EUPV and Podemos. Several political analysts agree that, given the statements and signals sent by the party, there is a high probability that, following the upcoming regional elections of the 24th of May, the PSPV-PSOE will join a coalition with Compromís, EUPV and Podemos, if results allow. Several gestures made by the party point that this will probably be the chosen option.*

Figure F.7: Vignette Placebo

## Se renuevan las Cortes Valencianas

Redacción. 10/05/2015

El próximo 24 de mayo se celebrarán elecciones autonómicas en la Comunidad Valenciana. El resultado de estos comicios contribuirá a definir el gobierno de la Generalitat para la próxima legislatura. Para esta cita electoral se habilitarán un total de 2.236 colegios electorales repartidos por toda la geografía valenciana.



**Translation:** *The Valencian Parliament, renewed. The upcoming 24th of May, regional elections in the Valencian Country will be held. The result of these elections will contribute to defining the regional government for the next term. In this occasion, 2,236 polling stations will be set up all over the valencian geography*