

Appendix for Werner, Annika (2019) Representation in Western Europe: Connecting party-voter congruence and party goals. *British Journal of Politics and International Relations*.

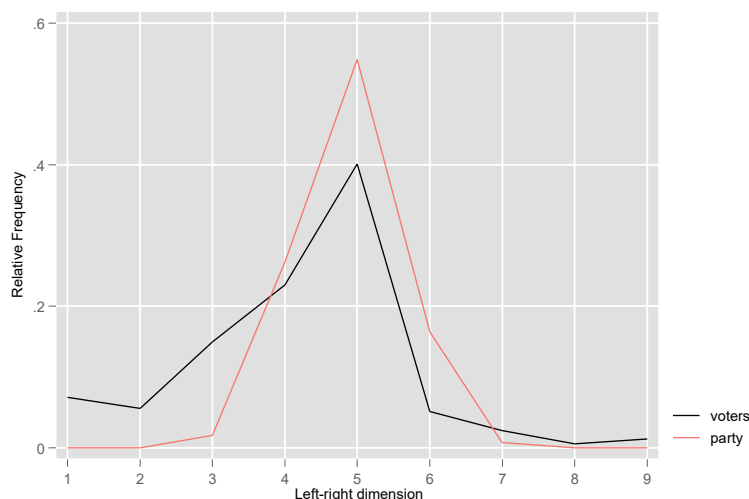
Appendix I: Illustration of congruence measure

As mentioned in the article, the party distribution relies on the point estimate from the manifesto data and the size of the party for the previous election. The scaling of the distribution is explained in FN 8: the ratio between party size and the standard deviation of the distribution needs to be defined. Looking at it from the side of the election result, it is feasible to assume that a party that spans the whole left-right dimension should win 100 per cent of all voters, if the latter are normally distributed and vote according to the rationale of best match on the left-right dimension. Translating the 100 per cent example into standard deviations means that 95 per cent of the distribution should cover 95 per cent of the dimension. Turning this logic around would mean that a party with 50 per cent vote share would span 50 per cent of the left-right dimension. For a party with 50 percent vote share, thus, the standard deviation is 23.75 points.

Thus, it is important to note that the highest point of the party distribution will always be the party manifesto position, which is the anchor of the distribution in the policy space. The following figures show how the party distributions look and how they compare to the voter distributions. Comparing the three figures also shows that the crucial factor in the construction of congruence is the manifesto position.

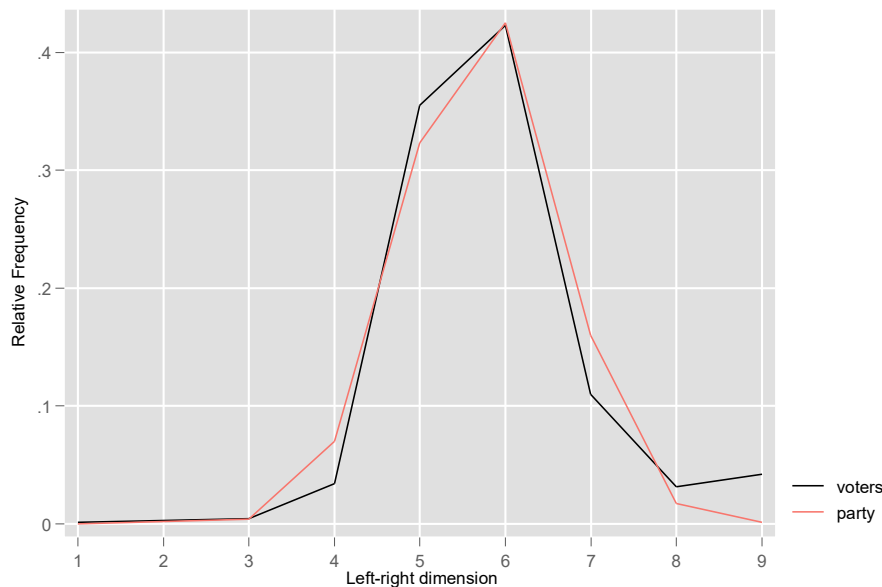
The first example is from UK Labour in 1997, which saw the landslide win by Labour that swept Tony Blair in the office of Prime Minister. Figure A1 shows that this success was based on a very good fit between the party position and voter distribution. While the voter distribution is bulkier on the left of its peak than the party distribution, the deciding factor for the high congruence (71%) is the fit between the two peaks.

Figure A1: Voter and party distribution for UK Labour 1997.



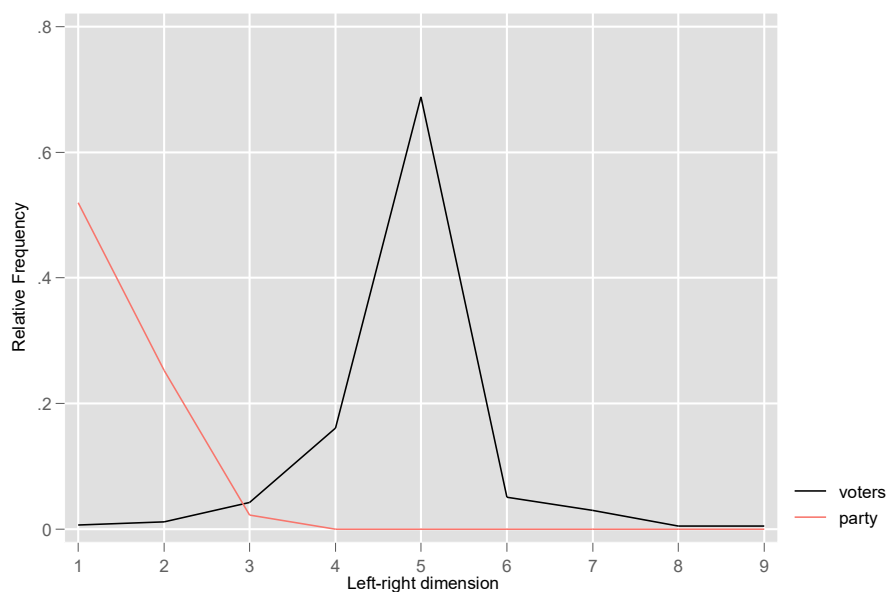
The next figure shows the same distributions for the ‘winner’ of congruence, the Spanish PP in 2004. It shows a nearly perfect fit between the two distributions. Again, the peaks of both distributions match and PP profited from a voter distribution that is very compact, spanning only three points on the scale.

Figure A2: Voter and party distribution for Spanish PP in 2004.



As an example on the opposite end, Figure A3 show the Danish Sweden Democrats in 1979. While its voters were rather evenly distributed around the centre, the party took a position at the extreme left of the distribution. As we would expect, though, this still led to some congruence (4%) with their most left-wing voters.

Figure A3: Voter and party distribution for Danish Social Democrats in 1979.



Appendix II: Effects in main analysis

The following figure and table show more details of the effects of niche party status, distance to the centre and their interaction. Figure A4 shows the difference between predicted congruence of mainstream and niche parties. As the confidence intervals do not overlap, this confirms the interpretation of Figure 3 that niche parties indeed have significantly lower party-voter congruence than mainstream parties. Similarly, Figure A5 shows that the party's distance to the centre of the left-right dimension affects congruence.

Figure A4: Predicted congruence for mainstream and niche parties.

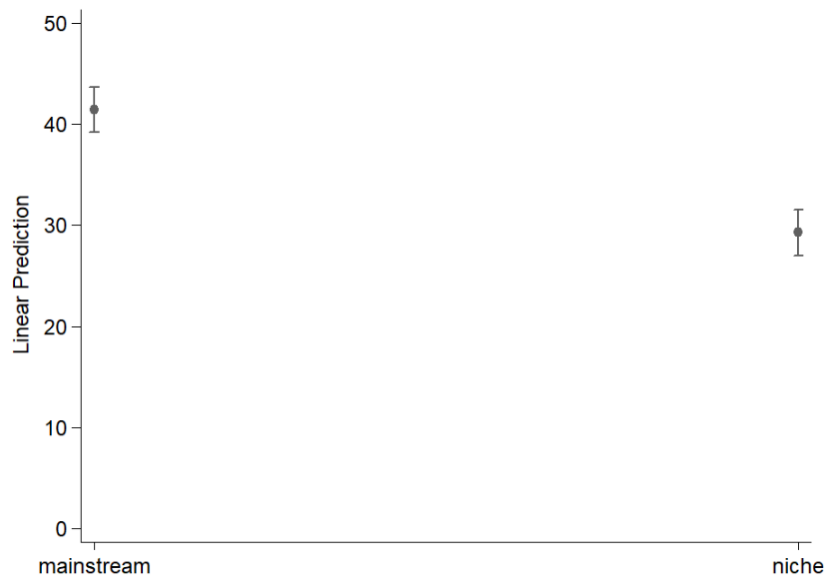
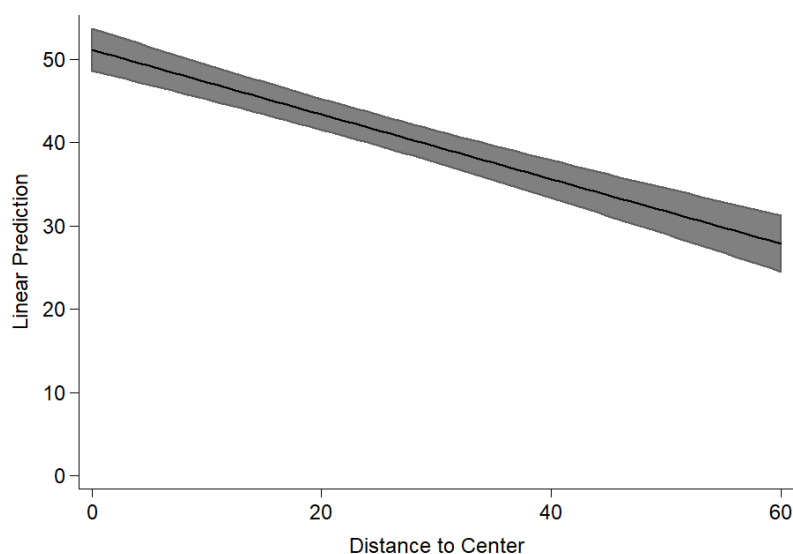


Figure A5: Predicted congruence for parties depending on their distance to the centre of the left-right dimension.



Finally, Table A1 confirms that the two lines in Figure 3 are indeed not parallel. It shows the difference between the predicted congruence of mainstream and niche parties for increasing distances to the centre of the left-right dimension. The increase in distance means that the lower line (niche party congruence) falls steeper than the upper line (mainstream party congruence).

Table A1: Difference between predicted congruences of mainstream and niche parties for different distances to the centre

Distance to centre	Difference
0	9.04
10	9.82
20	10.61
30	11.40
40	12.19
50	12.98
60	13.77

Appendix III: Robustness check by replication using RILE

To control for the robustness of the congruence measures and main analysis, the following replicates the main manuscript analysis using the RILE score (Budge & Laver 1995) instead of the left-right party scores derived through the method by Franzmann and Kaiser. The same dataset is used, comprising 470 data points from 10 countries between 1973 and 2009.

1) Descriptive statistic of congruence

The congruence between parties and voters was calculated the same way as described in the article, but with the RILE score provided in the Manifesto dataset as the parties' left-right score. The following inspections show that the two congruence measures behave very similarly.

Table A2: Comparison of descriptive characteristics of congruence, N = 470.

	Congruence w/ RILE	Congruence w/ Franzmann/Kaiser
Mean	45.9	40.0
Standard deviation	19.9	20.4
Nr cases < 5%	2	11
Nr cases > 49.9%	210	152

Figure A6: Distribution of party-voter congruence based on RILE scores.

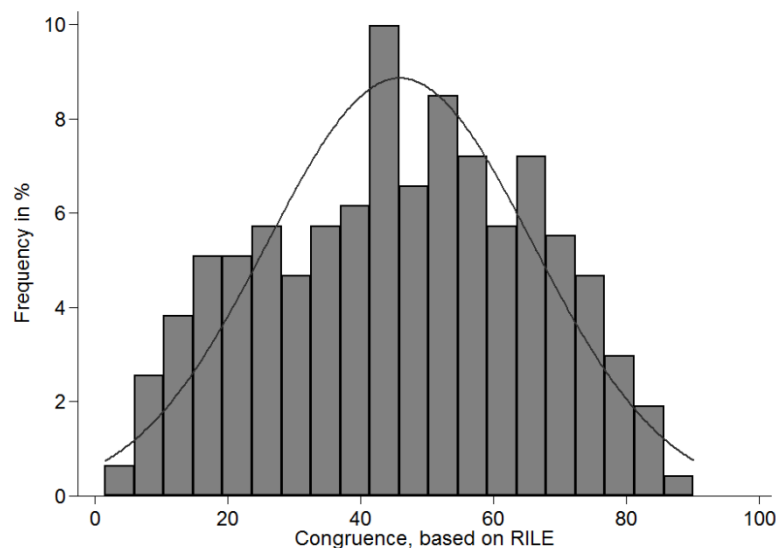


Table A2 shows that the two measures have very similar summary statistics, which is confirmed by the distribution shown in Figure A6. Furthermore, as mentioned in the article, the best performing party with the congruence score based on the Franzmann/Kaiser left-right index is the Spanish Popular Party in 2004 (congruence = 91%). When congruence is based on RILE, the same party is also among the Top10 performing parties and the best performing party is the Portuguese Socialist Party in 2002 (congruence = 90%).

2) Replication of main analysis

Table A3 shows the replication of the main manuscript's analysis (Table 2) with the RILE-based congruence measure. While the model without interactions slightly deviates from the results in Table 2, the main model (with interactions) shows the very similar results in terms of significances as well as direction and size of effects. Furthermore, Figures A7 and A8 replicate Figures 3 and 4 of the main articles, respectively, and show the same patterns.

Table A3: Main analysis explaining congruence, measure based on RILE.

Variables	Model without interactions			Model with interactions		
	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>
Niche Party	-0.32	2.25	0.89	5.16	4.73	0.30
Distance to Centre	-0.51	0.07	0.00	-0.75	0.17	0.00
Party Size	0.72	0.06	0.00	0.43	0.14	0.02
Interactions						
Niche*Centre				-0.32	0.12	0.46
Niche*Size				-0.76	0.91	0.42
Size*Centre				0.02	0.01	0.01
Niche*Size*Centre				0.03	0.05	0.54
Government status (lag)	5.25	1.99	0.03	5.27	2.01	0.03
District Magnitude	-1.08	0.58	0.10	-0.98	0.47	0.07
Effective N parties	-0.26	0.66	0.70	-0.31	0.62	0.63
Time	-0.02	0.06	0.74	0.02	0.06	0.76
Constant	45.10	4.32	0.00	48.34	5.15	0.00
Observations		470			470	
R ²		0.43			0.45	
adj. R ²		0.42			0.44	
AIC		3914.98			3897.66	

OLS regression with standard errors adjusted for 10 country clusters.

Figure A7: Replication of Figure 3 (Linear prediction of congruence, interaction party type and centrist) with the RILE-based congruence.

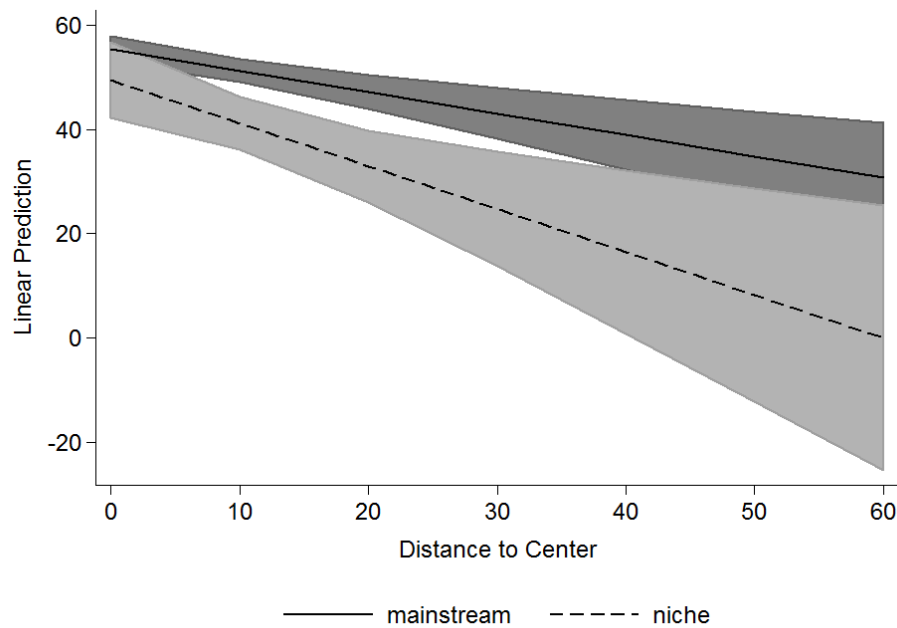
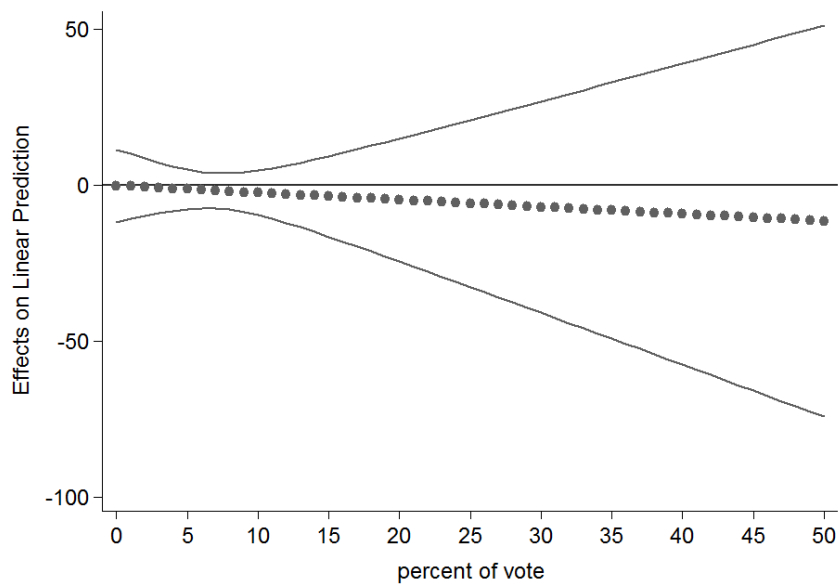


Figure A8: Replication of Figure 4 (Average marginal effect of party type depending on party vote share) with the RILE-based congruence.



Appendix IV: Robustness checks by replication using lagged voters

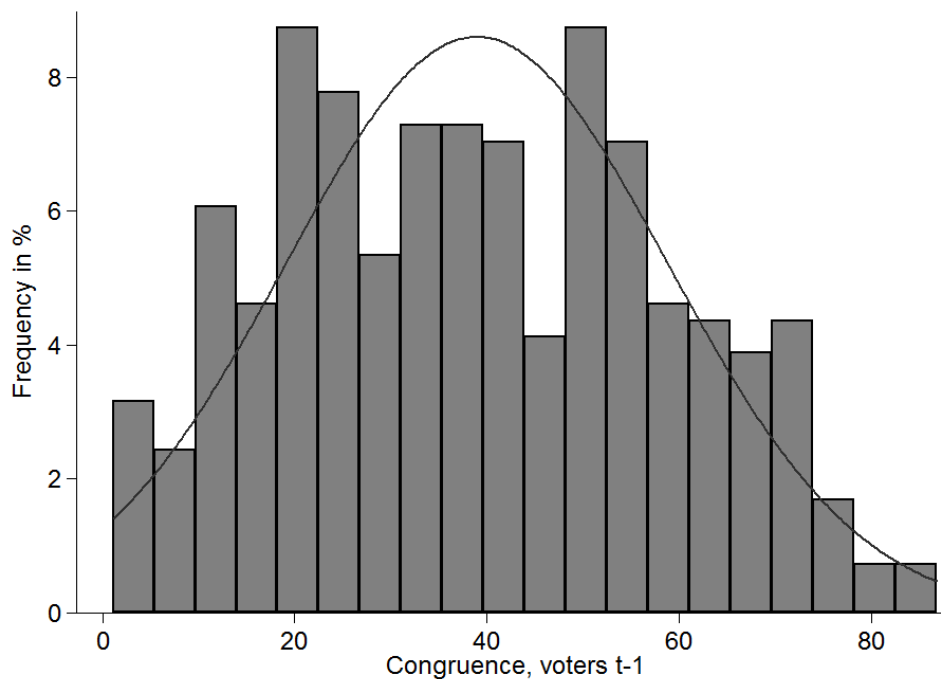
The following analysis rests on the assumption that parties do not know the positions of their voters at a particular election but only of those voters at the last elections. Thus, the congruence was re-calculated, matching parties at time t to the party voters at $t(-1)$. Otherwise, all steps of the congruence calculation and analysis are the same as in the article's analysis. Because of the lagged congruence, some data is lost. There are now 412 data points in 10 countries between 1975 and 2009.

1) Descriptive statistic of congruence

Table A4: Comparison of descriptive characteristics of congruence, $N = 412$.

	Congruence w/ parties at t , voters at $t-1$	Congruence w/ voters and parties at t
Mean	38.9	40.0
Standard deviation	19.9	20.4
Nr cases < 5%	12	11
Nr cases > 49.9%	134	152

Figure A9: Distribution of party-voter congruence based on parties at t , voters at $t-1$.



2) Replication of main analysis

Table A4 shows the replication of the main manuscript's analysis (Table 2) with the congruence measure with parties at t and voters at $t-1$. Both models in Table A4 are very similar to the results in Table 2. Furthermore, Figures A10 and A11 replicate Figures 3 and 4 of the main articles, respectively. Figure A10 shows a stronger effect of the niche party status than the effect in Figure 3, but the direction and conclusion drawn are the same. While the effect in Figure A11 is positive, it is as small and as not significant, just like the effect in Figure 4.

Table A5: Main analysis explaining congruence, parties at t and voters at $t-1$.

Variables	Model without interactions			Model with interactions		
	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>
Niche Party	-3.22	0.74	0.00	5.18	2.77	0.10
Distance to Centre	-0.19	0.03	0.00	-0.13	0.09	0.16
Party Size	0.76	0.12	0.00	0.85	0.12	0.00
Interactions						
Niche*Centre				-0.32	0.13	0.04
Niche*Size				-1.30	0.44	0.02
Size*Centre				-0.00	0.01	0.67
Niche*Size*Centre				0.05	0.02	0.03
Government status (lag)	0.56	1.21	0.66	0.78	1.19	0.53
District Magnitude	1.22	0.58	0.07	1.26	0.64	0.08
Effective N parties	-1.16	0.46	0.03	-1.09	0.48	0.05
Time	0.27	0.05	0.00	0.26	0.06	0.00
Constant	31.47	5.14	0.00	29.29	3.99	0.00
Observations		412			412	
R ²		0.43			0.44	
adj. R ²		0.42			0.43	
AIC		3413.1			3408.0	

OLS regression with standard errors adjusted for 10 country clusters.

Figure A10: Replication of Figure 3 (Linear prediction of congruence, interaction party type and centrism) with parties at t and voters at t-1.

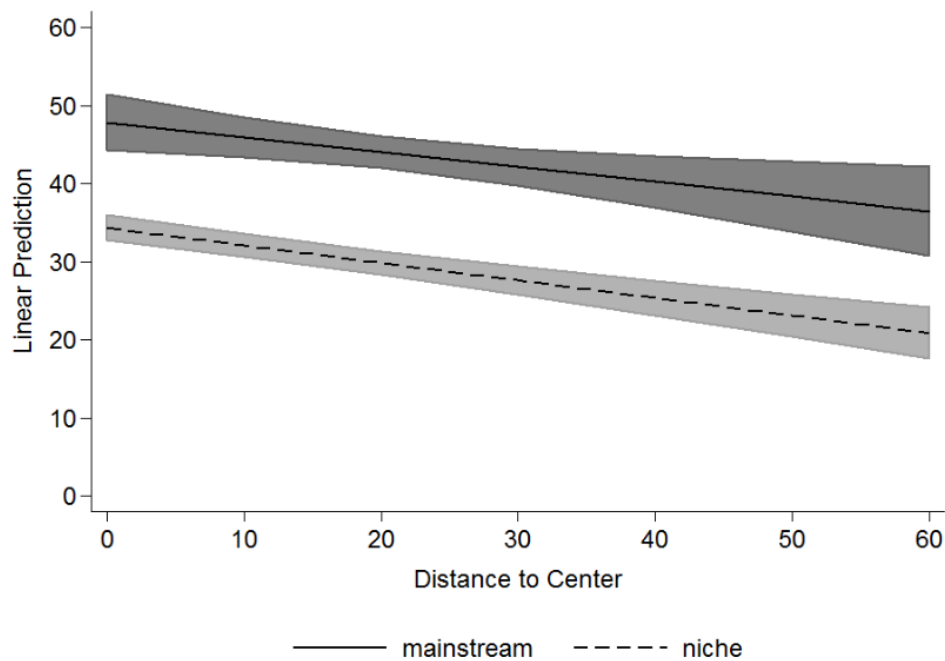
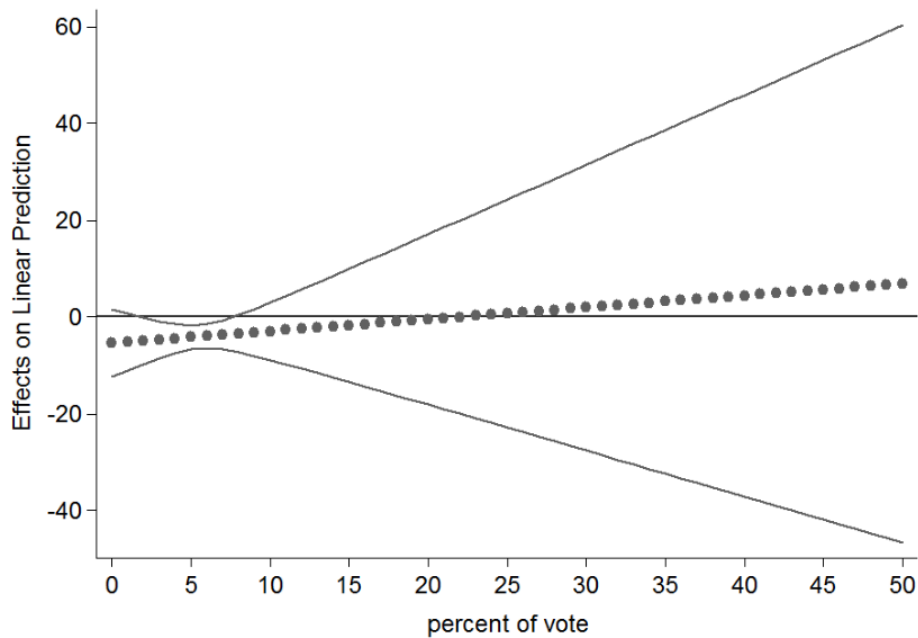


Figure A11: Replication of Figure 4 (Average marginal effect of party type depending on party vote share) with parties at t and voters at t-1.



Appendix V: Replication using absolute and relative congruence

To check whether the new congruence measure makes a difference, the analysis is replicated using the absolute and relative congruence measures instead. As both are distance measures, lower values denote better congruence and negative effects mean that the IV leads to a better match between parties and voters on the left-right dimension.

The following tables and figures show that while the distance to the centre of the left-right dimension also affects congruence in these two measures (in that greater distances relate to worse congruence), the status as mainstream or niche party does not have any effect on either distance-based congruence measure. Given that the variation within this congruence measures is much smaller (see Figure 2 in the article), it seems that averaging voter positions indeed seems to have the theorised effect of hiding important voter distribution characteristics.

1) Using absolute congruence as DV

Table A6: Analysis explaining congruence measured as absolute congruence.

Variables	Model without interactions			Model with interactions		
	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>
Niche Party	1.33	2.46	0.60	2.36	6.32	0.72
Distance to Centre	0.33	0.07	0.00	0.24	0.04	0.00
Party Size	0.07	0.07	0.35	-0.07	0.15	0.66
Interactions						
Niche*Centre				0.18	0.19	0.36
Niche*Size				-1.08	0.73	0.17
Size*Centre				0.01	0.01	0.35
Niche*Size*Centre				-0.01	0.02	0.66
Government status (lag)	2.65	1.86	0.19	1.94	1.74	0.30
District Magnitude	-0.39	1.01	0.71	-0.36	1.05	0.74
Effective N parties	0.09	0.56	0.88	0.31	0.45	0.50
Time	-0.09	0.06	0.18	-0.09	0.07	0.24
Constant	9.69	6.28	0.16	11.08	5.21	0.06
Observations		470			470	
R ²		0.23			0.25	
adj. R ²		0.21			0.24	
AIC		3855.0			3839.2	

OLS regression with standard errors adjusted for 10 country clusters.

Figure 12: Effect of niche party status on predicted absolute congruence.

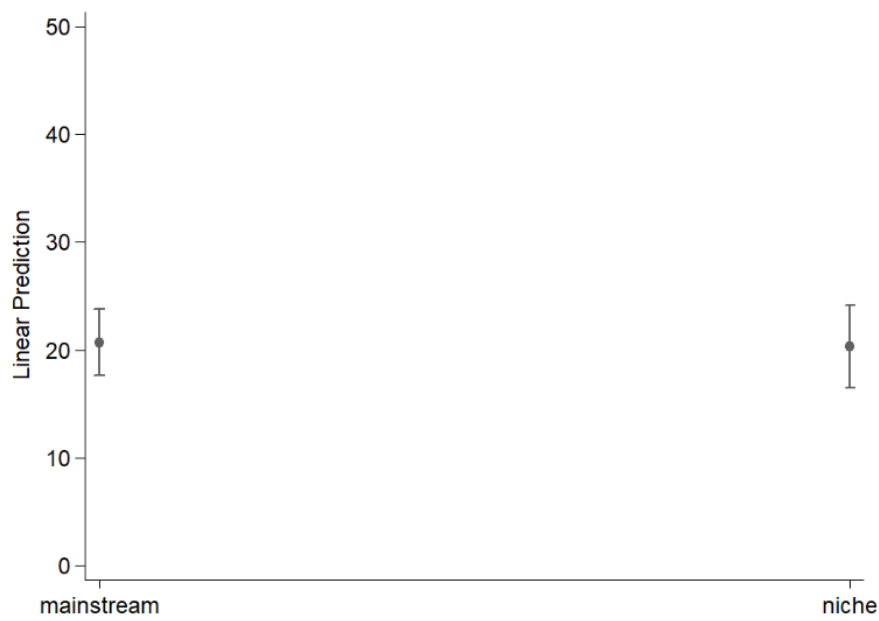


Figure 13: Effect of distance to the centre of the left-right dimension on predicted absolute congruence.

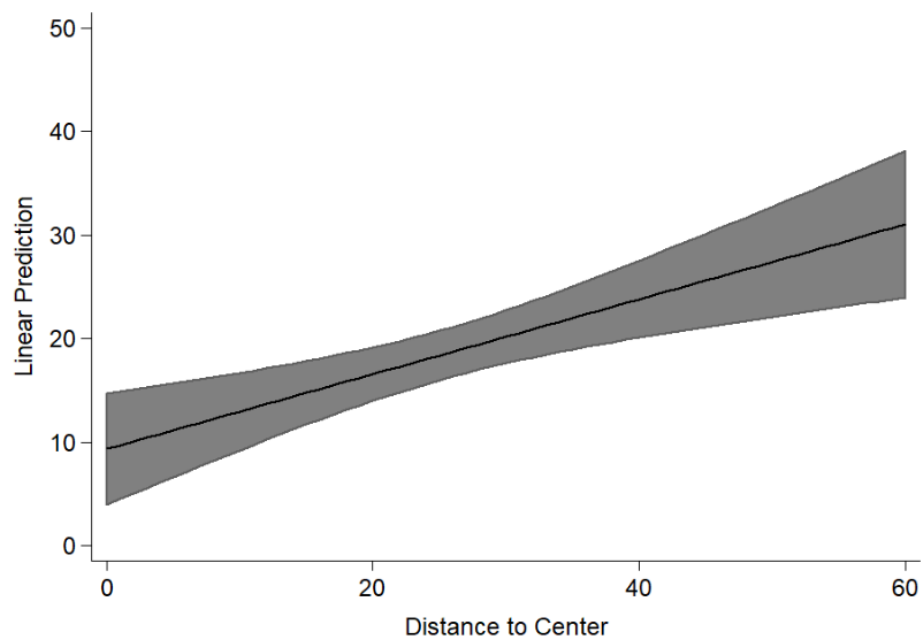
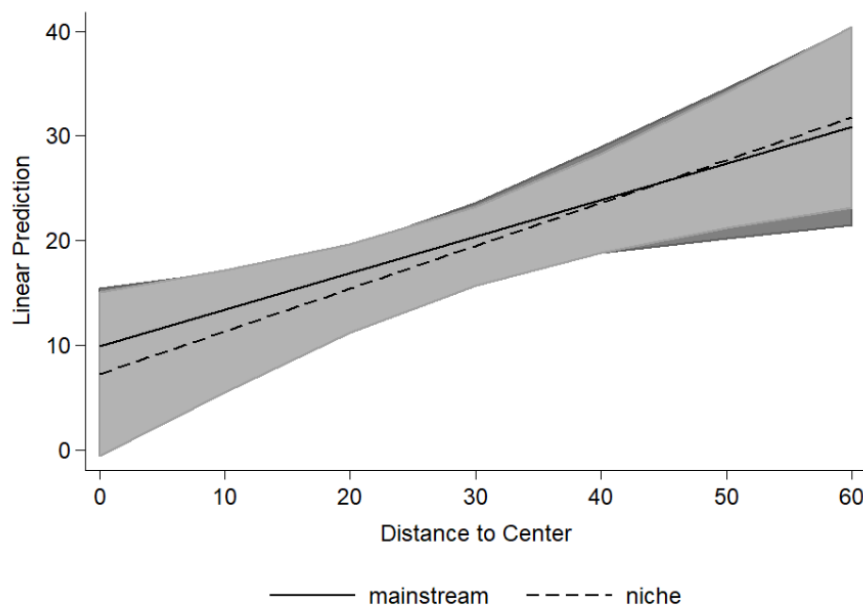


Figure A14: Replication of Figure 3 (Linear prediction of congruence, interaction party type and centrism), DV: absolute congruence.



2) Using relative congruence as DV

Table A7: Analysis explaining congruence measured as relative congruence.

Variables	Model without interactions			Model with interactions		
	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>
Niche Party	3.09	1.49	0.07	-2.01	4.56	0.67
Distance to Centre	0.25	0.04	0.00	0.16	0.04	0.01
Party Size	0.17	0.07	0.05	0.02	0.10	0.87
Interactions						
Niche*Centre				0.27	0.11	0.08
Niche*Size				0.31	0.47	0.53
Size*Centre				0.01	0.00	0.29
Niche*Size*Centre				-0.02	0.01	0.10
Government status (lag)	0.60	1.31	0.66	0.14	1.10	0.90
District Magnitude	-0.60	0.66	0.39	-0.57	0.75	0.46
Effective N parties	0.66	0.33	0.08	0.64	0.33	0.08
Time	-0.13	0.05	0.05	-0.12	0.06	0.09
Constant	22.85	4.88	0.00	25.77	4.10	0.00
Observations	470			470		
R ²	0.32			0.34		
adj. R ²	0.31			0.33		
AIC	3420.6			3404.2		

OLS regression with standard errors adjusted for 10 country clusters.

Figure 15: Effect of niche party status on predicted relative congruence.

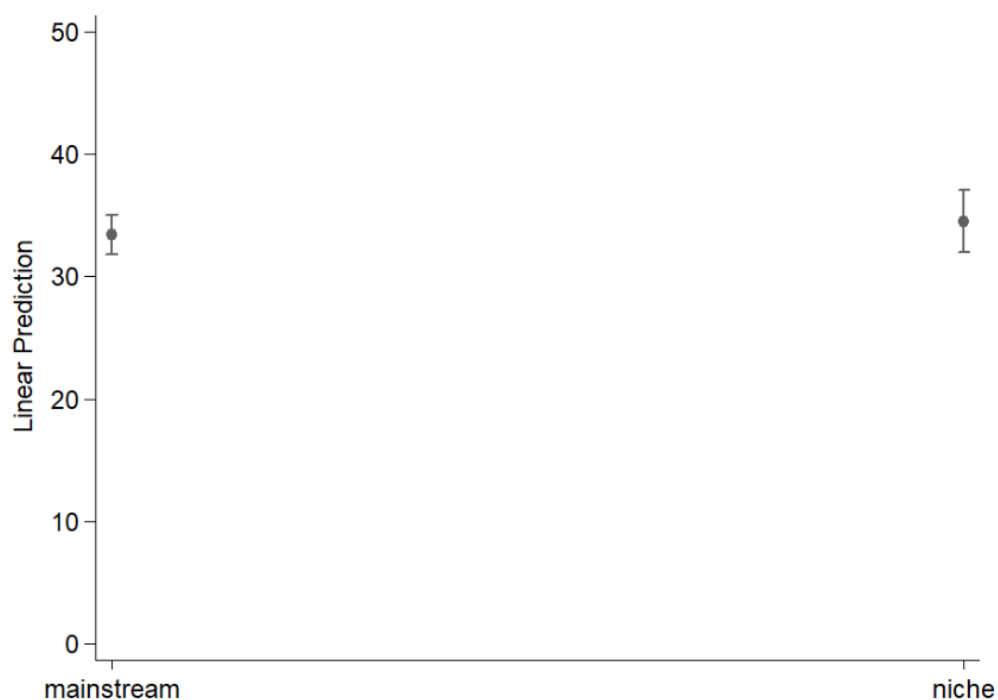


Figure 16: Effect of distance to the centre of the left-right dimension on predicted relative congruence.

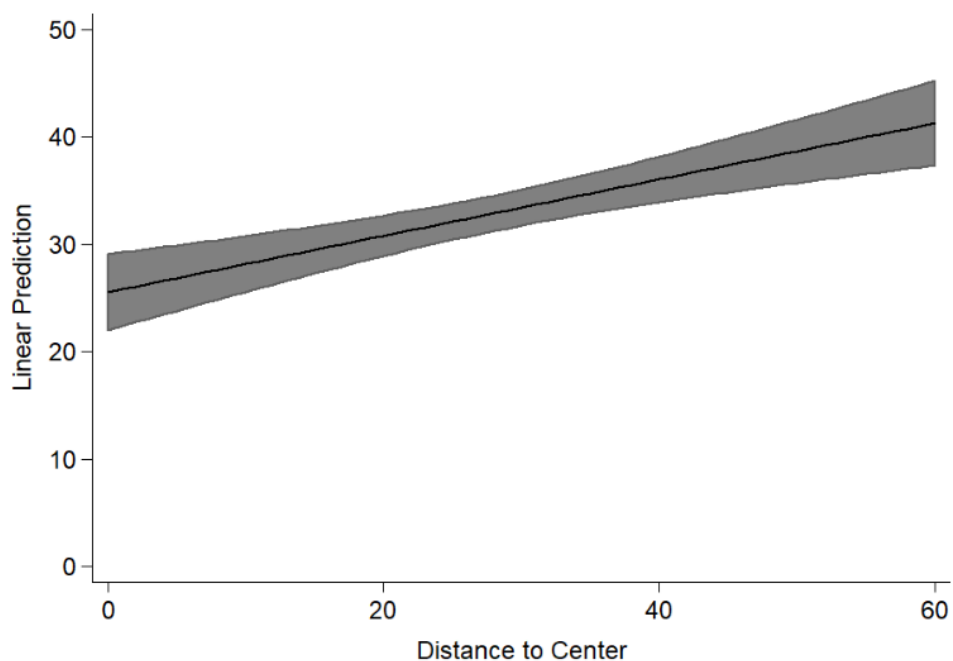
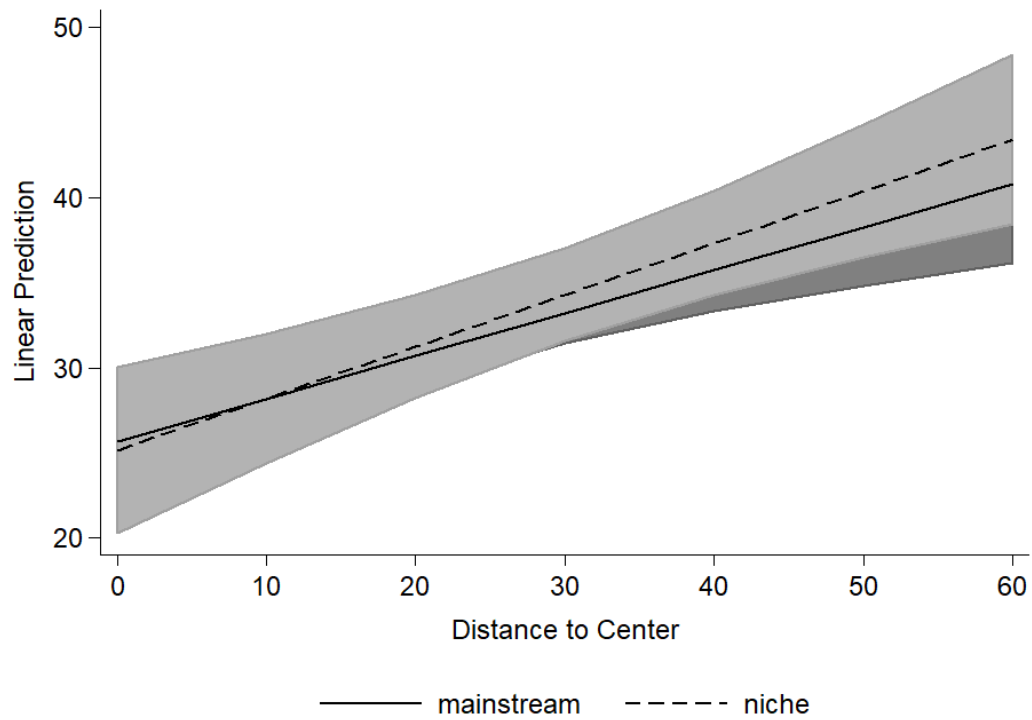


Figure A17: Replication of Figure 3 (Linear prediction of congruence, interaction party type and centrism), DV: relative congruence.



Appendix VI: Further robustness checks of main analysis

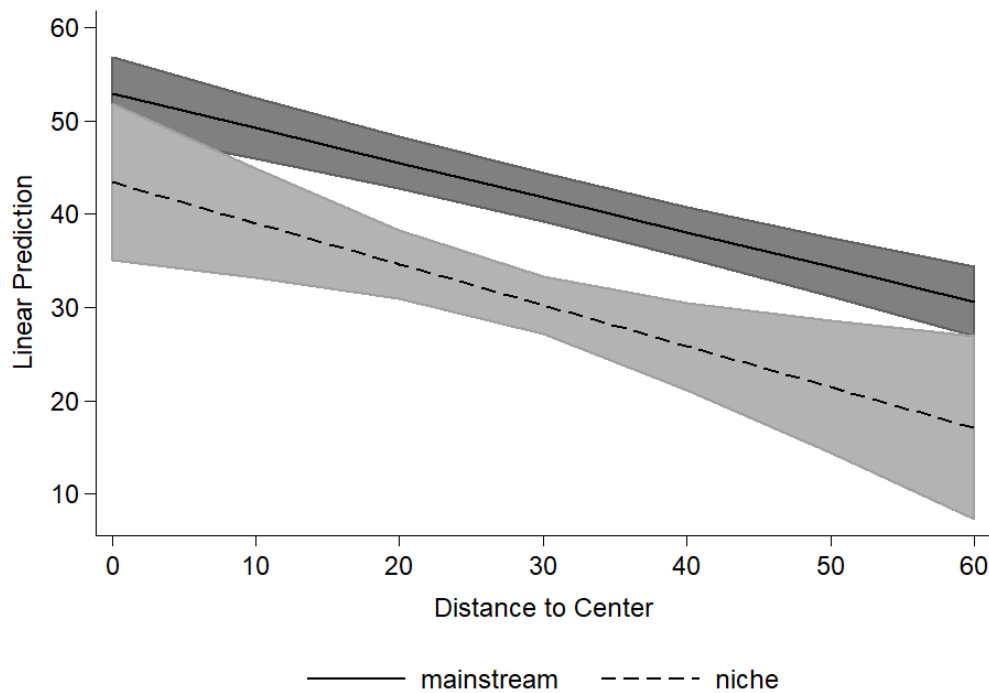
As the existence of niche parties increases the number of parties in the party system, the following analysis replicates the original analysis without the effect of the number of parties. Table A7 and the following figure show that the exclusion of this independent variable does not change the relationship between niche party status and distance to the centre of the left-right dimension.

Table A7: Analysis without effective number of parties.

Variables	Model without interactions			Model with interactions		
	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>
Niche Party	-3.00	2.09	0.18	4.55	6.86	0.52
Distance to Centre	-0.37	0.02	0.00	-0.25	0.08	0.01
Party Size	0.69	0.09	0.00	0.90	0.14	0.00
Interactions						
Niche*Centre				-0.19	0.21	0.40
Niche*Size				-0.45	0.85	0.61
Size*Centre				-0.01	0.01	0.31
Niche*Size*Centre				0.01	0.02	0.77
Government status (lag)	0.95	1.76	0.60	1.53	1.34	0.28
District Magnitude	0.83	0.88	0.37	0.76	1.02	0.47
Time	0.21	0.06	0.01	0.21	0.09	0.04
Constant	35.16	3.60	0.00	31.04	3.07	0.00
Observations		470			470	
R ²		0.47			0.48	
adj. R ²		0.46			0.47	
AIC		3885.5			3879.7	

OLS regression with standard errors adjusted for 10 country clusters.

Figure A18: Replication of Figure 3 (Linear prediction of congruence, interaction party type and centrism) based on model excluding the effective number of parties.



As a further robustness check, the following model focuses only on the three variables in the interaction effect.

Table A8: Main analysis without controls.

Variables	Model without interactions			Model with interactions		
	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>	<i>coef.</i>	<i>std. err.</i>	<i>sign.</i>
Niche Party	-3.06	2.07	0.17	3.47	7.19	0.64
Distance to Centre	-0.39	0.02	0.00	-0.27	0.08	0.01
Party Size	0.69	0.09	0.00	0.91	0.13	0.00
Interactions						
Niche*Centre				-0.14	0.21	0.51
Niche*Size				-0.59	0.94	0.54
Size*Centre				-0.01	0.01	0.25
Niche*Size*Centre				0.01	0.02	0.74
Constant	41.56	1.81	0.00	37.52	2.52	0.00
Observations		470			470	
R ²		0.45			0.47	
adj. R ²		0.45			0.46	
AIC		3390.4			3888.2	

OLS regression with standard errors adjusted for 10 country clusters.

Figure A19: Replication of Figure 3 (Linear prediction of congruence, interaction party type and centrism), model without controls.

