Online Appendix: Descriptives and robustness checks

Descriptives

The main descriptive statistics are presented in Table A1. Below we discuss our measurements of the socio-economic variables *Education*, *Class*, *Subjective income* and *Unemployment*. The other variables are discussed in the main text.

Table A1. Descriptive statistics

Radical right	N	M	SD	Min	Max
Radical right voting	57,269	.0921965	.2893056	0	1
Education	57,269	3.998952	1.73826	1	7
Religious	57,269	4.693499	2.906451	0	10
Age	57,269	51.07929	16.41866	18	102
Urban	57,269	1.60022	.4898573	1	2
Female	57,269	.4883096	.4998677	0	1
Class	57,269	3.616424	1.729614	1	6
Income	57,269	3.179085	.8141047	1	4
Unemployed	57,269	.0303655	.1715923	0	1
Anti-immigration	57,269	4.749638	1.961066	0	10

Radical left	N	M	SD	Min	Max
Radical left voting	54,388	.1060896	.3079551	0	1
Education	54,388	3.913547	1.840824	1	7
Religious	54,388	4.397551	2.946805	0	10
Age	54,388	51.28815	16.31071	18	103
Urban	54,388	1.638303	.4804962	1	2
Female	54,388	.4952931	.4999824	0	1
Class	54,388	3.568508	1.723904	1	6
Income	54,388	3.140601	.8202467	1	4
Unemployed	54,388	.037545	.1900949	0	1
Anti-immigration	54,388	4.737571	1.981512	0	10

For *Education* we employed the newly developed ES-ISCED measure. This measure is based on a harmonized comparative classification system that has been developed by country experts (Schneider, 2010). The first category represents less than lower secondary education. Category II contains citizens with lower secondary education. In general, those with upper secondary education can be found in category IIIa. However, those with secondary education focused on vocational training are grouped within category IIIb. Category IV represents post-secondary education, and the categories V1 and V2 stand for the first and second stages of tertiary education respectively. As this ES-ISCED variable has been classified to measure level of education and contains seven categories, our baseline models include education as a single continuous variable. Our measure of *Class* is based on the Erikson-Goldthorpe-Portocarero (EGP) classification scheme (Erikson et al., 1979), recoding the class scheme into a variable with 6 categories: (1) semi- and unskilled manual workers and agricultural laborers; (2) manual supervisors and skilled manual workers; (3) small self-employed and farmers; (4) routine non-manual workers; (5) lower level professionals and managers; (6) higher level professionals, managers and entrepreneurs. We also assessed individuals' *Unemployed* status (0 = employed, 1 = unemployed). For income, we rely in our baseline estimates on *Subjective income*, based on the question asking respondents to report how they feel about their household income, measured on a scale ranging from "finding it very difficult on present income" (1) to "living comfortably on present income" (4). We employ this variable because including the objective measurement of income strongly reduces the sample size. Below we nevertheless assess if including the objective measure of income leads to different results. This is not the case.

Robustness checks

In order to test the robustness of our findings we have performed five additional analyses. We present these analyses below.

1. Heterogeneity radical left

March (2011) makes a distinction between four categories of radical left parties. The first group consists of the traditional communist parties. At least to a certain extent, these parties hold on to traditional communism. This does not mean, however, that they endorse all aspects of the Soviet model; many of these parties have discarded at least some "Soviet elements." The second group consists of democratic socialists. Ideologically they can be positioned somewhere between traditional communism on the one hand and modern social democracy on the other hand. These parties combine more traditional socioeconomic issues with "new politics" issues such as the environment and multiculturalism. "Populist socialist parties" form the third category. Their ideological core is highly similar to that of the democratic socialists, but they combine their democratic socialist outlook with a strong populist discourse. The fourth category consists of "social populist parties." This is a more marginal group of parties with relatively weak organizations and incoherent ideologies. Because of the marginality of this fourth category and the similarities between the democratic socialist and populist socialist parties, we leave out this fourth category and distinguish between only two types of radical left parties: (1) more conservative communist parties (March's first group); and (2) more progressive socialist parties (March's second and third group). The first type more strictly holds on to the traditional communist agenda, focused on the defense of the working class against neo-liberal threats. The second type has incorporated a culturally liberal, progressive agenda, and thereby appeals to voter groups beyond the traditional lower class constituency – mainly the progressive higher

educated. To the extent that progressive socialist parties have become more common than conservative communist parties, we may see different results with respect to these different subgroups. See Table 1 for an overview.

Table 2 below considers alternative specifications of the radical left, taking account of the heterogeneity of the radical left party family. Consistent with our discussion above, we consider whether the results summarized in Model 2 of Table 3 in our main analysis apply to two possible sub-families of the radical left: Traditional or conservative radical left parties (=1) relative to voting for mainstream parties (=0) in Model 2; and Progressive radical left parties (=1) relative to mainstream parties in Model 3. As can be seen, the results are largely in line with those in the main analysis (displayed here in Model 1).

Table A2. Two types of radical left parties

Country	Radical right party	Radical left party	
		Conservative	*Progressive*
Austria	FPÖ, BZÖ		
Belgium	VB, FNb		
Bulgaria	ATAKA		
Cyprus		AKEL	
Czech Republic		KSCM	
Denmark	DF		EL, SF
Finland	PS		VAS
France	FN, MNR	PCF, LO, LCR	
Germany	Republikaner, NPD		Linke
Greece	LAOS	KKE	SYN
Hungary	Jobbik, MIEP	MP	
Ireland			SF
Italy	LN, AN	PRC, Comunisti	
Netherlands	LPF, PVV		SP
Norway		Rodt	SV
Poland	LPR		
Portugal		PCP	BE
Slovenia	SNS, LIPA		
Slovakia	SNS	KSS	

Spain				IU
Sweden	SD			V
Switzerland	SVP			
United Kingdom	BNP, UKIP			

An important exception, however, is that for the more traditional radical left parties education is no longer statistically significant, as if here the socio-economic lowering of risk associated with education more significantly trumps the pro-cosmopolitan effects of education. Also noticeable is that the class position conditions of the more Progressive radical left appear to have a less lower-class skew than other specifications of radical left. Most importantly, however, most of the principal party-ideological normative attitudes Hypothesized above apply for both, as it were, "wings" of the radical left. Relative to the mainstream, for instance, both are more egalitarian and pro-redistribution (the Traditional radical left electorate, however, is not significantly more altruistic than the mainstream). The final Model 4, in any event, shows that, regarding the left's principal attitudes, the different wings of the radical left are not significantly different from one another – looking only at the radical left and measuring the chance of Progressive radical left vote (=1) relative to Traditional radical left vote (=0). This is clear with respect to all the principal distinguishing left attitudes (except for egalitarianism). Such patterns suggest, importantly, that our emphasis on radical distinctions is not a simple artifact of our measure of "radical left."

Table A3. Logistic regression models estimating different dependent variables (odds ratios reported)

	(1)	(2)	(3)	(4)
				Trad. RL
	Radical	Trad.	Progr.	vs.
	Left	RL	RL	Progr. RL
Education	1.089***	1.006	1.109***	1.243***
	(0.023)	(0.038)	(0.025)	(0.074)
Religious	0.824***	0.894***	0.810***	1.007

	(0.016)	(0.021)	(0.016)	(0.033)
Age	1.001	0.997	1.001	0.989*
	(0.003)	(0.008)	(0.003)	(0.006)
Urban	1.157**	1.391***	1.098*	0.689
	(0.055)	(0.122)	(0.044)	(0.172)
Female	0.945	0.862*	0.954	1.514*
	(0.054)	(0.061)	(0.067)	(0.312)
2 (man.superv. And skilled)	0.917	0.799	1.006	2.124***
	(0.068)	(0.103)	(0.078)	(0.336)
3 (self-empl.)	0.628***	0.624*	0.676***	1.042
	(0.055)	(0.149)	(0.064)	(0.111)
4 (routine non-manual)	0.786*	0.559*	0.893	1.125
	(0.074)	(0.134)	(0.066)	(0.258)
5 (lower controller)	0.807**	0.510***	0.931	1.395*
	(0.067)	(0.038)	(0.059)	(0.184)
6 (higher controller)	0.723**	0.429***	0.815	1.613
	(0.088)	(0.085)	(0.094)	(0.494)
Income (subjective)	0.780***	0.749***	0.800***	1.246***
	(0.028)	(0.048)	(0.032)	(0.083)
Unemployed	1.077	0.576*	1.275**	0.885
	(0.114)	(0.151)	(0.117)	(0.189)
Anti-immigration	0.923***	0.956*	0.920***	1.054
	(0.016)	(0.023)	(0.021)	(0.047)
Strong govt.	0.871***	0.840*	0.883***	1.285*
	(0.023)	(0.059)	(0.021)	(0.140)
Econ. Dissatisf.	1.132***	1.157***	1.134***	0.987
	(0.013)	(0.021)	(0.019)	(0.067)
Pol. Distrust	1.011	0.976	1.023	1.007
	(0.012)	(0.025)	(0.012)	(0.021)
Egalitarian	1.209***	1.173***	1.209***	0.773*
	(0.025)	(0.045)	(0.026)	(0.096)
Altruist	1.082*	1.015	1.114**	1.111
	(0.035)	(0.041)	(0.044)	(0.158)
Support Govt. Redist.	1.741***	1.472***	1.761***	0.970
	(0.070)	(0.099)	(0.077)	(0.095)
Constant	0.001***	0.004***	0.002***	1.879
	(0.001)	(0.005)	(0.001)	(2.222)
Observations	51770	22542	41074	1408
R2	0.141	0.171	0.161	0.791

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

2. Alternative operationalizations of education and income

We have assessed to what extent other ways of operationalizing and modelling education and income leads to different results. In our main analyses we have operationalized the level of education with the newly developed ES-ISCED measure − modeled as a continuous variable. To test whether another approach would have led to different results, we have also modeled education by means of education dummies (based on the same ES-ISCED measure). This leads to the same substantive results, see Table 3. Model 1 shows that radical right voters are lower educated than mainstream voters; model 2 shows that radical left voters are higher educated than mainstream voters; and model 3 demonstrates that radical left voters are higher educated than radical right voters. In the models 3 and 4 we estimate the same models based on objective income instead of subjective income. This strongly reduces the sample size, but does not lead to different subjective findings.

Table A4. Alternative operationalizations of education

	(1) mainright	(2) mainleft	(3) mainright	(4) mainleft
Education				
ES-ISCED II	0.984	1.450**		
	(0.110)	(0.185)		
ES-ISCED IIIa	1.095	1.373*		
	(0.099)	(0.174)		
ES-ISCED IIIb	0.670***	1.560**		
	(0.071)	(0.212)		
ES-ISCED IV	0.553***	1.429*		
	(0.096)	(0.202)		
ES-ISCED V1	0.348***	2.082***		
	(0.060)	(0.297)		
ES-ISCED V2	0.268***	2.276***		
	(0.044)	(0.308)		
Class				
2 (man.superv. And skilled)	0.950	0.910	0.991	0.899
	(0.083)	(0.060)	(0.089)	(0.071)
3 (self-empl.)	0.795*	0.551***	0.808	0.547***

	(0.091)	(0.049)	(0.101)	(0.047)
4 (routine non-manual)	0.730***	0.798**	0.742***	0.814*
	(0.048)	(0.060)	(0.057)	(0.068)
5 (lower controller)	0.619***	0.785***	0.583***	0.793**
	(0.039)	(0.057)	(0.043)	(0.063)
6 (higher controller)	0.534***	0.659***	0.468***	0.693**
	(0.050)	(0.080)	(0.048)	(0.082)
Educ (continuous)			0.782***	1.117***
			(0.022)	(0.023)
Subjective income	0.796***	0.666***		
	(0.038)	(0.027)		
Objective income			0.956*	0.886***
			(0.020)	(0.014)
Unemployed	1.339	1.195*	1.387	1.358**
	(0.273)	(0.106)	(0.256)	(0.129)
Religiosity	0.950***	0.807***	0.945***	0.804***
	(0.011)	(0.016)	(0.011)	(0.016)
Age	0.984***	1.003	0.981***	1.001
	(0.003)	(0.003)	(0.003)	(0.003)
Rural/urban	0.862**	1.134**	0.856*	1.122*
	(0.049)	(0.055)	(0.054)	(0.062)
Gender	0.777***	1.049	0.732***	1.077
	(0.055)	(0.053)	(0.051)	(0.061)
Constant	1.444	0.035***	2.271*	0.037***
	(0.471)	(0.034)	(0.727)	(0.031)
Observations	60918	57811	51927	46791
R2	0.178	0.091	0.175	0.084

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

The interaction between education and altruism remains significant when we operationalize education with dummies. Figure 1 shows the interaction effect based on an analysis with education dummies. There is no interaction effect in the first panel (regarding mainstream versus radical right voters), but the second panel shows that there is an interaction when we compare mainstream voters with radical left voters: the higher educated seem to vote for the radical left especially when they are altruistic.

Figure 2 shows that the interaction effect does not change when we employ the objective measure of income.

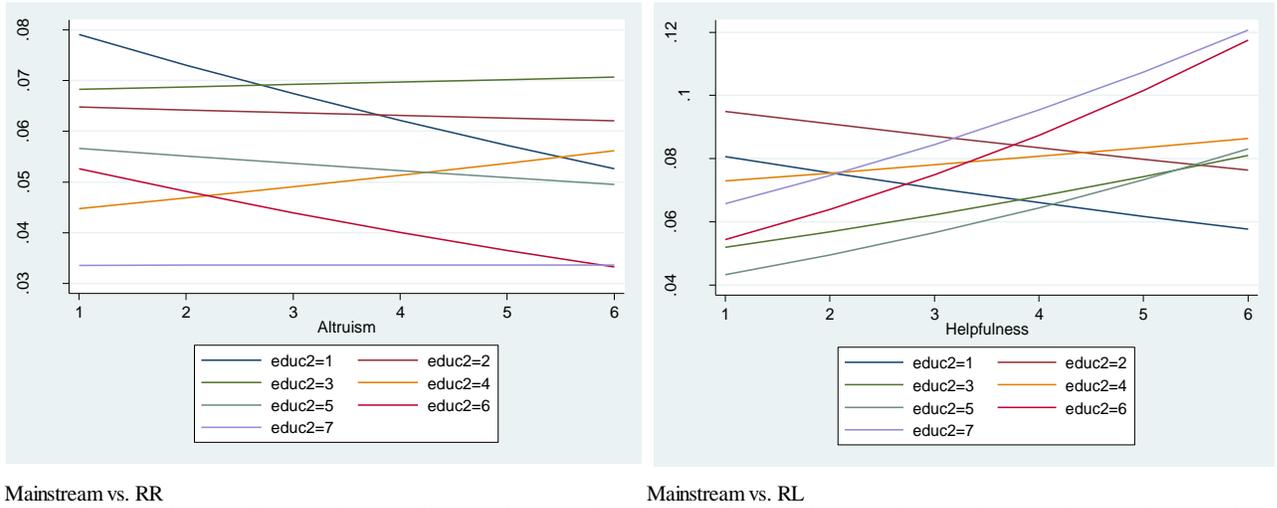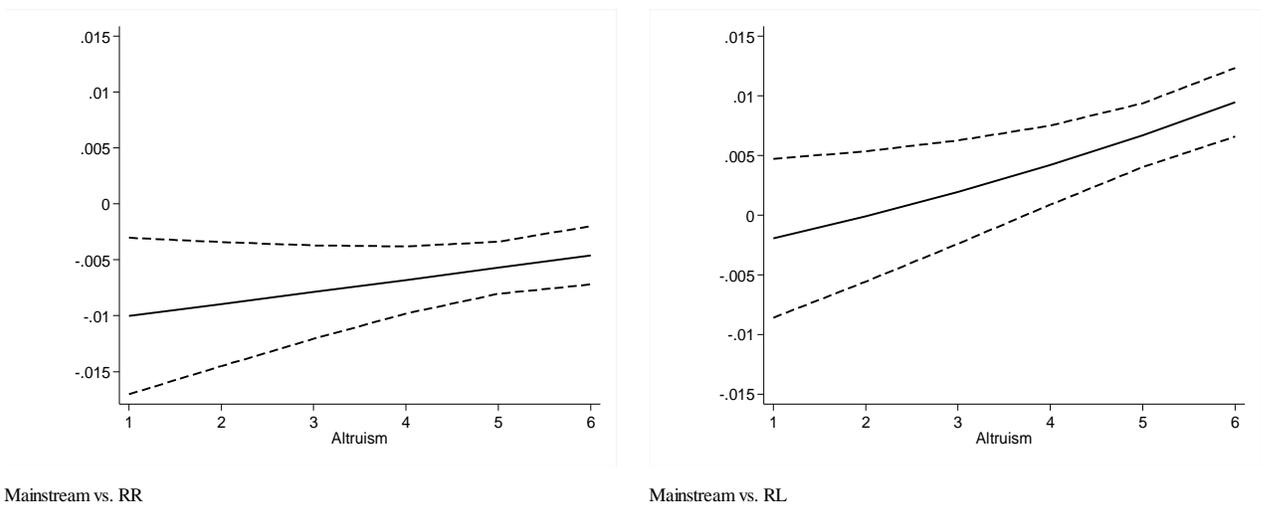**Figure A1.** Interaction education dummies with altruism

Mainstream vs. RR

Mainstream vs. RL

Figure A2. Interaction education in years with altruism

Mainstream vs. RR

Mainstream vs. RL

3. Multinomial regression models

Third, we have estimated multinomial regression models instead of logistic regression models. For these additional analyses we have also included a separate category of non-voters. Based on the same modelling strategy that we employed in our original analyses, these models did not converge, however. This is most probably due to the large number of empty cells when it comes to the presence of the various types of radical parties. After we slightly adjusted our model specification by clustering the standard errors by country and by including only year-fixed effects, the models did converge. The outcomes of these analyses are highly similar to the logistic regression analyses. The results are displayed in Table 4. Because we believe that it is more important to include country-fixed effects than to estimate multinomial models, we have presented the logistic regression analyses as our main analyses.

Table A5. Original analyses compared with multinomial regression analyses (significant results marked grey)

	Original Radical Right	Multinom. Radical Right	Original Radical Left	Multinom. Radical Left	Original RR vs. RL (1)	Multinom. RR vs. RL (1)
Education	-	-	+	+	+	+
Religious	-	-	-	-	-	-
Age	-	-	+	+	+	+
Urban	-	-	+	+	+	+
Female	-	-	-	+	+	+
Class	-	-	-	-	-	-
Income (subjective)	-	+	-	-	-	-
Unemployed	+	+	+	+	-	+
Anti-immigration	+	+	-	-	-	-
Strong govt.	+	+	-	-	-	-
Econ. Dissatisf.	-	-	+	+	+	+
Pol. Distrust	+	+	+	+	-	+
Egalitarian	-	-	+	+	+	+
Altruist	-	-	+	+	+	+
Support Govt. Redist.	+	+	+	+	+	+

Regarding voting for the radical right the most important difference between the logistic and the multinomial analysis are: (1) religiosity is not significant anymore; (2) living in an urban area becomes significant; (3) class and (4) authoritarianism become insignificant. Regarding

the radical left: (1) education, (2) class and (3) economic satisfaction become insignificant. When we compare voting for the radical left with voting for the radical right we see that: (1) income, (2) economic dissatisfaction and (3) altruism become significant, whereas (4) unemployed and political distrust (5) become insignificant. The conclusions when it comes to the interaction effect between education and altruism remain the same. The interaction effect is insignificant when we compare mainstream voters with radical right voters and significant when we compare mainstream voters with radical left voters.

4. Jackknife

Fourth, our findings might be affected by context-specific effects. We have therefore re-estimated the analyses after excluding each country one at a time. This does not strongly affect our main results. We first jackknifed our main models (without interaction effects). The most important finding of this analysis is that when we exclude Germany from our model, the main effect of altruism on radical left voting is not significant anymore. However, if we drop the variable egalitarianism (with which altruism is strongly correlated) from the model, the effect of altruism is statistically significant again. Another finding is that without France, the effect of class on radical left voting becomes less statistically significant; only the category of the self-employed differs from the semi- and unskilled manual workers when we look at all countries except France. This suggests that especially those who vote for communists (all radical left parties in France are more conservative communists) are those from lower classes. The radical distinctions might be even more pronounced than we expected. When it comes to radical right voting, after excluding the Netherlands from the analysis, the effect of religiosity is only statistically significant at the $p < 0.10$ level. Apparently, especially those who vote for the Dutch PVV are nonreligious. The interaction between altruism and education remains significant after excluding each country one at a time (but when we exclude France the effect is

significant only at p < 0.10). Looking at the radical right, all effects remain insignificant after jackknifing, just as they were in the full analysis.

5. Supply side

Fifth, the results could be affected by the specific political supply side within a country. It might well be the case that the effect of education on voting behavior is conditional upon the parties that voters can choose from. Voters might make different decisions when they can choose between both a radical left party and a radical right party than when they can choose between only one of the two next to other parties. To assess whether this is the case we included a three-way interaction variable in our model. This is an interaction between education, altruism and an indicator of the political supply side. This latter variable is a dummy variable for which a "1" indicates that both the radical left and the radical right are present, and "0" indicates that only one of the two party types is present. The findings are displayed in Figure 3. The figure shows that the significant interaction between education and altruism when it comes to voting for radical left parties only holds when voters can choose between both a radical left and a radical right party.

Figure A3. Three-way interaction education, altruism and political supply

Mainstream vs. RR   Mainstream vs. RL