

ONLINE APPENDIX: THE SOCIAL BASES OF NUCLEAR ENERGY POLICIES IN EUROPE:  
IDEOLOGY, PROXIMITY, BELIEF UPDATING AND ATTITUDES TO RISK

*Forthcoming European Journal of Political Research*

FABIO FRANCHINO, *Università degli Studi di Milano, Italy*

In this online appendix, you can find additional supporting information. The headings of this appendix refer to the sections of the articles where I state that further details are available upon request.

ARTICLE SECTION: *ESTIMATION*

*WinBugs code for the probit model (surveys 1978-96)*

Below is the WinBUGS code modeling the likelihood function and priors. The model allows for heteroscedasticity. The initial estimation was run with starting values of the coefficients drawn randomly from a uniform distribution  $U(-1,1)$ . The estimation mixed three simultaneous chains for 80,000 iterations, discarding the first 50,000 as a burn-in and keeping alternate iterations. It resulted in a total of 15,000 saved iterations per chain. It was performed in WinBUGS 1.4.3. Examination of the trace and density plots as well as convergence diagnostics, such as the Rhat, indicates that the model has converged. Full convergence diagnostics are available upon request.

model

```
{
# priors for individual variables
  for (j in 1 : 16) { b1[j] ~ dnorm(0,tau_b1[j])}
  for (j in 1 : 16) { tau_b1[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b1[j] <- 1/tau_b1[j]}
  for (j in 1 : 16) { b2[j] ~ dnorm(0,tau_b2[j])}
  for (j in 1 : 16) { tau_b2[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b2[j] <- 1/tau_b2[j]}
  for (j in 1 : 16) { b3[j] ~ dnorm(0,tau_b3[j])}
  for (j in 1 : 16) { tau_b3[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b3[j] <- 1/tau_b3[j]}
  for (j in 1 : 16) { b4[j] ~ dnorm(0,tau_b4[j])}
  for (j in 1 : 16) { tau_b4[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b4[j] <- 1/tau_b4[j]}
  for (j in 1 : 16) { b5[j] ~ dnorm(0,tau_b5[j])}
  for (j in 1 : 16) { tau_b5[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b5[j] <- 1/tau_b5[j]}
  for (j in 1 : 16) { b6[j] ~ dnorm(0,tau_b6[j])}
  for (j in 1 : 16) { tau_b6[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b6[j] <- 1/tau_b6[j]}
  for (j in 1 : 16) { b7[j] ~ dnorm(0,tau_b7[j])}
  for (j in 1 : 16) { tau_b7[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_b7[j] <- 1/tau_b7[j]}
# priors for country variables
  for (j in 1 : 16) { u1[j] ~ dnorm(0,tau_u1[j])}
  for (j in 1 : 16) { tau_u1[j] ~ dgamma(1,0.1)}
  for (j in 1 : 16) { sigma2_u1[j] <- 1/tau_u1[j]}
# priors for survey variables
  for (t in 1 : 9) { u2[t] ~ dnorm(0,tau_u2[t])}
  for (t in 1 : 9) { tau_u2[t] ~ dgamma(1,0.1)}
  for (t in 1 : 9) { sigma2_u2[t] <- 1/tau_u2[t]}
# likelihood - loop over respondents
  for (i in 1 : 65955)
  {
    risk[i] ~ dbern(p[i]);
    probit(p[i]) <- delta[i]
    delta[i] ~ dnorm(mu[i], 1.0)I(-4, 4)
    mu[i] <-
b1[country[i]]*left_right[i]+b2[country[i]]*proximity[i]+b3[country[i]]*left_right[i]*proximity[i]+b4[country[i]]*education[i]+b5[country[i]]*gender[i]+b6[country[i]]*age[i]+b7[country[i]]*income[i]+u1[country[i]]*cons[i]+u2[year[i]]*cons[i]
  }
  # log-likelihood
  llh[i] <- risk[i]*log(p[i]) + (1-risk[i])*log(1-p[i]);
}
sumllh <- sum(llh[]);
}
```

### *Standard error of the MCMC mean estimates of the parameters of interest*

For the analysis of marginal effects, I require a correctly estimated variance-covariance matrix. Positive autocorrelation in the MCMC samples causes underestimation of the standard error of the estimates of my parameters of interest. I employ the following Bayesian procedure to correct the standard error for the mean estimate  $\bar{\theta}_i$ . Its variance is

$$\widehat{Var}(\bar{\theta}_i) = \frac{1 + 2 \sum_{k=1}^{\infty} \rho_k(\theta_i)}{n} \cdot \frac{\sum_{t=1}^n (\theta_i^t - \bar{\theta}_i)^2}{(n-1)}$$

The first term is the inverse of the effective sample size, where  $n$  is the total sample size and  $\rho_k(\theta_i)$  is the autocorrelation of lag  $k$  for  $\theta_i$ . Following the Bayesian procedure, I first find a cut-off point  $k$  after which the autocorrelations are very close to zero, and then sum all the  $\rho_k$  up to that point. The cut-off point  $k$  is such that  $\rho_k < 2s_k$ , where  $s_k$  is the estimated standard deviation:

$$s_k = 2 \sqrt{\frac{1 + 2 \sum_{j=1}^{k-1} \rho_j^2(\theta_i)}{n}}$$

I sum up the autocorrelations up to a maximum of 100 lags. I implement this procedure to produce a correct variance-covariance matrix of the parameters of interest of each of the three chains. The three matrices are then simply summed up and divided by three. The resulting variance-covariance matrix is then employed for the analysis of marginal effects.

## ARTICLE SECTION: *RESULTS*

### SUBSECTION: *A note on ideology and proximity in the latest surveys*

*WinBugs code for the normal model (surveys 2006-08)*

Below is the WinBUGS code modeling the likelihood function and priors. The model allows for heteroscedasticity. The initial estimation was run with starting values of the coefficients drawn randomly from a uniform distribution  $U(-1,1)$ . The estimation mixed three simultaneous chains for 80,000 iterations, discarding the first 50,000 as a burn-in and keeping alternate iterations. It resulted in a total of 15,000 saved iterations per chain. It was performed in WinBUGS 1.4.3. Examination of the trace and density plots as well as convergence diagnostics, such as the Rhat, indicates that the model has converged, with the exception of the coefficients for Cyprus and Malta. These countries display high distances and low variance. They should be probably taken out of the sample. Full convergence diagnostics are available upon request.

```

model
{
# priors for individual variables
for (j in 1 : 27) { b1[j] ~ dnorm(0,tau_b1[j])}
for (j in 1 : 27) { tau_b1[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_b1[j] <- 1/tau_b1[j]}
for (j in 1 : 27) { b2[j] ~ dnorm(0,tau_b2[j])}
for (j in 1 : 27) { tau_b2[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_b2[j] <- 1/tau_b2[j]}
for (j in 1 : 27) { b3[j] ~ dnorm(0,tau_b3[j])}
for (j in 1 : 27) { tau_b3[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_b3[j] <- 1/tau_b3[j]}
for (j in 1 : 27) { b4[j] ~ dnorm(0,tau_b4[j])}
for (j in 1 : 27) { tau_b4[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_b4[j] <- 1/tau_b4[j]}
for (j in 1 : 27) { b5[j] ~ dnorm(0,tau_b5[j])}
for (j in 1 : 27) { tau_b5[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_b5[j] <- 1/tau_b5[j]}
for (j in 1 : 27) { b6[j] ~ dnorm(0,tau_b6[j])}
for (j in 1 : 27) { tau_b6[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_b6[j] <- 1/tau_b6[j]}
# priors for country variables
for (j in 1 : 27) { u1[j] ~ dnorm(0,tau_u1[j])}
for (j in 1 : 27) { tau_u1[j] ~ dgamma(1,0.1)}
for (j in 1 : 27) { sigma2_u1[j] <- 1/tau_u1[j]}
# priors for survey variables
for (t in 1 : 2) { u2[t] ~ dnorm(0,tau_u2[t])}
for (t in 1 : 2) { tau_u2[t] ~ dgamma(1,0.1)}
for (t in 1 : 2) { sigma2_u2[t] <- 1/tau_u2[t]}
# priors for variance of the dependent variable
tau_mu ~ dgamma(1,0.1)
sigma2_mu <- 1/tau_mu
# likelihood - loop over respondents
for (i in 1 : 36993) # loop over interviewees
{
risk[i] ~ dnorm(mu[i],tau_mu)
mu[i]<-b1[country[i]]*left_right[i] + b2[country[i]]*proximity[i] + b3[country[i]]*left_right[i]*proximity[i] +
b4[country[i]]*education[i] + b5[country[i]]*gender[I + b6[country[i]]*age[i] + u1[country[i]]*cons[i] +
u2[year[i]]*cons[i]
}
}
}

```

Table A. Ideology, Proximity and Attitudes to Nuclear Risk – MCMC estimates, 2006-08 surveys

Variables		Estimate	95% Credibility interval
Ideology	France	-0.093	( -0.152, -0.034 )
	Belgium	-0.048	( -0.101, 0.004 )
	Netherlands	-0.11	( -0.182, -0.044 )
	Germany	-0.119	( -0.167, -0.072 )
	Italy	-0.087	( -0.129, -0.044 )
	Luxembourg	-0.025	( -0.090, 0.038 )
	Denmark	-0.097	( -0.194, 0.001 )
	Ireland	-0.124	( -0.214, -0.040 )
	Great Britain	-0.063	( -0.117, -0.009 )
	Greece	0.015	( -0.048, 0.076 )
	Spain	-0.054	( -0.085, -0.023 )
	Portugal	-0.02	( -0.229, 0.131 )
	Finland	-0.083	( -0.123, -0.042 )
	Sweden	-0.171	( -0.202, -0.141 )
	Austria	-0.048	( -0.157, 0.039 )
	Cyprus	-28.25	( -63.800, 36.160 )
	Czech Republic	0.001	( -0.041, 0.041 )
	Estonia	-0.015	( -0.088, 0.060 )
	Hungary	0.072	( 0.017, 0.125 )
	Latvia	0.017	( -0.042, 0.074 )
	Lithuania	-0.033	( -0.092, 0.025 )
	Malta	-11.56	( -188.900, 257.000 )
	Polonia	0.068	( -0.020, 0.157 )
	Slovakia	0.055	( 0.021, 0.089 )
	Slovenia	-0.028	( -0.076, 0.021 )
	Bulgaria	-0.007	( -0.081, 0.069 )
	Romania	0.006	( -0.044, 0.057 )
	Proximity	France	0
Belgium		-0.002	( -0.008, 0.004 )
Netherlands		-0.005	( -0.009, -0.000 )
Germany		0.002	( 0.001, 0.004 )
Italy		0	( -0.000, 0.001 )
Luxembourg		-0.007	( -0.018, 0.005 )
Denmark		-0.003	( -0.006, 0.001 )
Ireland		0	( -0.003, 0.002 )
Great Britain		-0.002	( -0.005, 0.001 )
Greece		0	( -0.001, 0.000 )
Spain		0	( -0.000, 0.001 )
Portugal		0.002	( -0.001, 0.006 )
Finland		0.001	( -0.000, 0.002 )
Sweden		0.001	( -0.000, 0.001 )
Austria		-0.001	( -0.004, 0.004 )
Cyprus		0.188	( -0.234, 0.420 )
Czech Republic		-0.002	( -0.004, 0.001 )
Estonia	0	( -0.003, 0.002 )	

	Hungary	-0.003	( -0.005, -0.000 )
	Latvia	0.001	( -0.001, 0.003 )
	Lithuania	0.002	( 0.000, 0.004 )
	Malta	-0.025	( -2.143, 2.349 )
	Polonia	-0.002	( -0.003, 0.000 )
	Slovakia	-0.001	( -0.003, -0.000 )
	Slovenia	0	( -0.004, 0.003 )
	Bulgaria	0.001	( -0.002, 0.004 )
	Romania	-0.001	( -0.003, 0.001 )
Ideology × Proximity	France	0	( -0.001, 0.001 )
	Belgium	0	( -0.001, 0.001 )
	Netherlands	0	( -0.000, 0.001 )
	Germany	0	( -0.001, 0.000 )
	Italy	0	( -0.000, 0.000 )
	Luxembourg	0.001	( -0.001, 0.003 )
	Denmark	0	( -0.001, 0.001 )
	Ireland	0	( -0.001, 0.000 )
	Great Britain	0	( -0.001, 0.000 )
	Greece	0	( -0.000, 0.000 )
	Spain	0	( -0.000, 0.000 )
	Portugal	0	( -0.001, 0.001 )
	Finland	0	( -0.000, 0.000 )
	Sweden	0	( -0.000, 0.000 )
	Austria	0	( -0.001, 0.001 )
	Cyprus	-0.025	( -0.056, 0.032 )
	Czech Republic	0	( -0.000, 0.000 )
	Estonia	0	( -0.000, 0.000 )
	Hungary	0	( -0.000, 0.001 )
	Latvia	0	( -0.000, 0.000 )
	Lithuania	0	( -0.001, -0.000 )
	Malta	-0.01	( -0.168, 0.229 )
	Polonia	0	( -0.000, 0.000 )
	Slovakia	0	( -0.000, 0.000 )
	Slovenia	-0.001	( -0.001, 0.000 )
	Bulgaria	0	( -0.001, 0.000 )
	Romania	0	( -0.000, 0.000 )
Education	France	-0.045	( -0.061, -0.028 )
	Belgium	-0.053	( -0.069, -0.036 )
	Netherlands	0	( -0.015, 0.016 )
	Germany	0.005	( -0.008, 0.017 )
	Italy	-0.027	( -0.045, -0.008 )
	Luxembourg	-0.002	( -0.026, 0.022 )
	Denmark	-0.043	( -0.061, -0.026 )
	Ireland	-0.029	( -0.051, -0.007 )
	Great Britain	-0.024	( -0.041, -0.007 )
	Greece	-0.022	( -0.039, -0.004 )
	Spain	-0.026	( -0.045, -0.007 )

	Portugal	-0.022	( -0.043, -0.002 )
	Finland	-0.015	( -0.031, 0.001 )
	Sweden	0.015	( -0.000, 0.030 )
	Austria	-0.007	( -0.027, 0.012 )
	Cyprus	-0.077	( -0.132, 0.007 )
	Czech Republic	-0.049	( -0.073, -0.025 )
	Estonia	-0.042	( -0.062, -0.022 )
	Hungary	-0.043	( -0.063, -0.023 )
	Latvia	-0.046	( -0.068, -0.023 )
	Lithuania	-0.021	( -0.044, 0.001 )
	Malta	-0.02	( -0.058, 0.018 )
	Polonia	-0.062	( -0.085, -0.040 )
	Slovakia	-0.04	( -0.062, -0.017 )
	Slovenia	-0.051	( -0.071, -0.031 )
	Bulgaria	-0.045	( -0.078, -0.013 )
	Romania	-0.019	( -0.049, 0.012 )
Gender	France	0.345	( 0.257, 0.432 )
	Belgium	0.343	( 0.259, 0.428 )
	Netherlands	0.503	( 0.419, 0.586 )
	Germany	0.282	( 0.213, 0.352 )
	Italy	0.209	( 0.109, 0.312 )
	Luxembourg	0.232	( 0.099, 0.365 )
	Denmark	0.532	( 0.448, 0.616 )
	Ireland	0.293	( 0.191, 0.395 )
	Great Britain	0.465	( 0.381, 0.547 )
	Greece	0.213	( 0.120, 0.306 )
	Spain	0.188	( 0.089, 0.288 )
	Portugal	0.134	( 0.027, 0.241 )
	Finland	0.626	( 0.537, 0.714 )
	Sweden	0.494	( 0.410, 0.577 )
	Austria	0.133	( 0.044, 0.222 )
	Cyprus	0.338	( 0.193, 0.485 )
	Czech Republic	0.359	( 0.273, 0.445 )
	Estonia	0.583	( 0.482, 0.684 )
	Hungary	0.165	( 0.071, 0.260 )
	Latvia	0.344	( 0.239, 0.450 )
	Lithuania	0.237	( 0.119, 0.355 )
	Malta	0.252	( 0.072, 0.436 )
	Polonia	0.451	( 0.346, 0.557 )
	Slovakia	0.261	( 0.171, 0.350 )
	Slovenia	0.284	( 0.184, 0.383 )
	Bulgaria	0.174	( 0.028, 0.327 )
	Romania	0.017	( -0.128, 0.161 )
Age	France	-0.01	( -0.013, -0.007 )
	Belgium	-0.006	( -0.008, -0.003 )
	Netherlands	-0.007	( -0.010, -0.005 )
	Germany	-0.005	( -0.006, -0.003 )

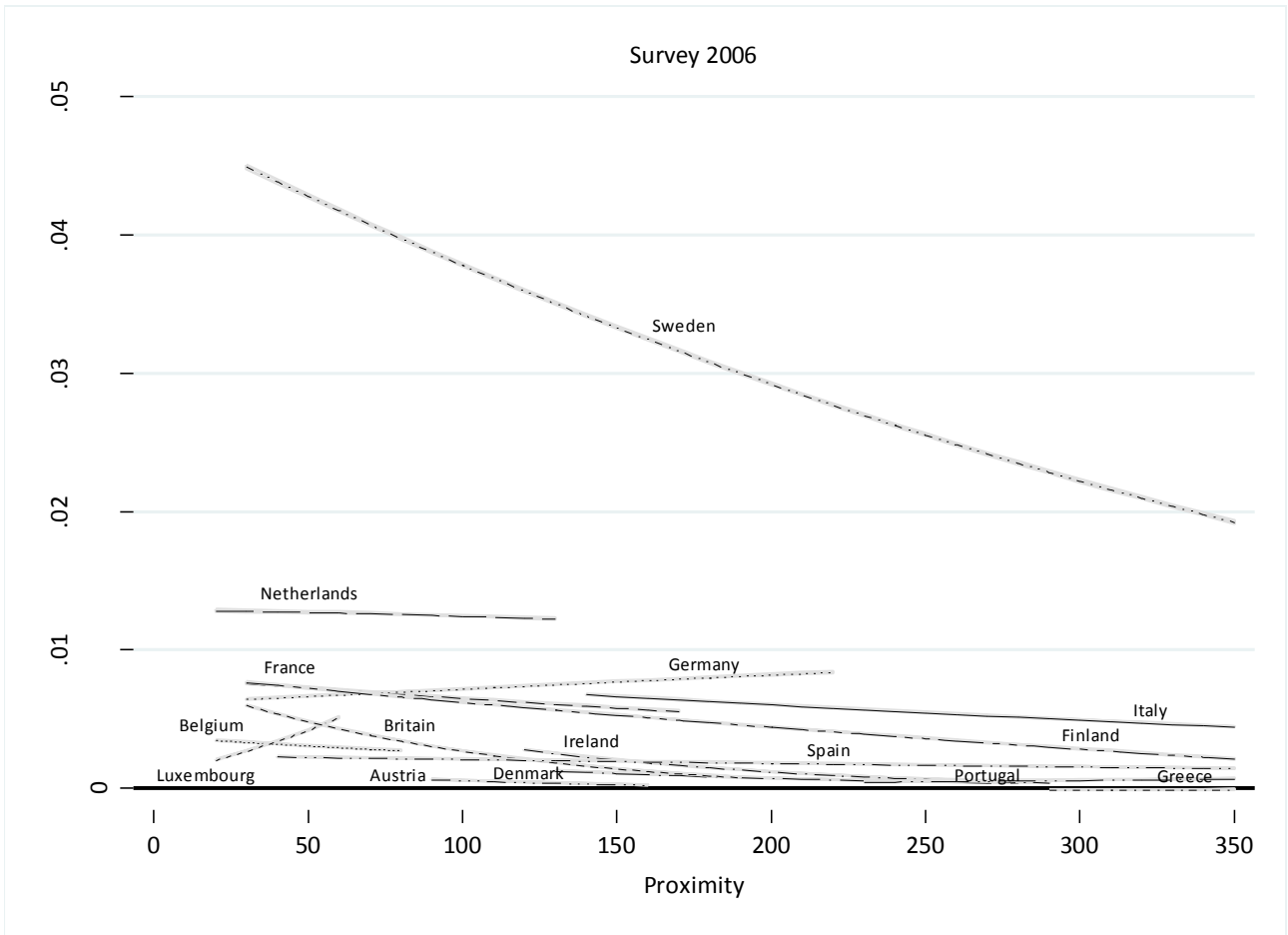


Italy	0	( -0.004, 0.003 )
Luxembourg	-0.002	( -0.006, 0.002 )
Denmark	0.003	( 0.000, 0.005 )
Ireland	0.004	( 0.001, 0.008 )
Great Britain	-0.004	( -0.007, -0.002 )
Greece	0.004	( 0.001, 0.006 )
Spain	-0.001	( -0.004, 0.002 )
Portugal	0.006	( 0.003, 0.010 )
Finland	-0.006	( -0.009, -0.004 )
Sweden	-0.007	( -0.009, -0.004 )
Austria	0.002	( -0.000, 0.005 )
Cyprus	0	( -0.005, 0.005 )
Czech Republic	-0.001	( -0.003, 0.002 )
Estonia	0.001	( -0.002, 0.003 )
Hungary	0	( -0.002, 0.003 )
Latvia	0.001	( -0.002, 0.004 )
Lithuania	-0.006	( -0.009, -0.002 )
Malta	0.002	( -0.004, 0.008 )
Polonia	0.002	( -0.001, 0.005 )
Slovakia	-0.005	( -0.008, -0.003 )
Slovenia	-0.003	( -0.005, 0.000 )
Bulgaria	-0.004	( -0.008, 0.002 )
Romania	0	( -0.005, 0.004 )

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France	0.592	( 0.189, 1.018 )
Belgium	0.178	( -0.149, 0.543 )
Netherlands	0.142	( -0.235, 0.604 )
Germany	0.595	( 0.246, 0.948 )
Italy	0.128	( -0.214, 0.491 )
Luxembourg	0.034	( -0.372, 0.460 )
Denmark	0.192	( -0.305, 0.826 )
Ireland	0.257	( -0.200, 0.845 )
Great Britain	-0.208	( -0.602, 0.142 )
Greece	0.056	( -0.348, 0.477 )
Spain	0.263	( -0.036, 0.581 )
Portugal	0.344	( -0.308, 1.564 )
Finland	-0.086	( -0.425, 0.236 )
Sweden	0.125	( -0.157, 0.431 )
Austria	0.527	( 0.011, 1.178 )
Cyprus	213.5	(-263.500, 475.400 )
Czech Republic	-0.699	( -1.094, -0.298 )
Estonia	-0.199	( -0.739, 0.232 )
Hungary	-1.147	( -1.609, -0.673 )
Latvia	0.203	( -0.188, 0.653 )
Lithuania	-0.224	( -0.696, 0.170 )
Malta	-28.14	(-2.4e+03,2634.000 )
Polonia	-0.726	( -1.399, -0.105 )
Slovakia	-0.695	( -1.046, -0.346 )

Slovenia	-0.16	( -0.561, 0.183 )
Bulgaria	-0.588	( -1.224, -0.044 )
Romania	-0.161	( -0.627, 0.240 )
Survey 2006	2.986	( 2.762, 3.199 )
Survey 2008	2.807	( 2.583, 3.020 )
N	65,955	
Chain length	80,000	
Burn-in	50,000	
Thinning parameter	2	
Sample size/chain	15,000	



*Figure A. Marginal effects of a leftward shift in ideology at different distances.*  
 Notes: Proximity is measured in kilometres from the closest operating power plant.

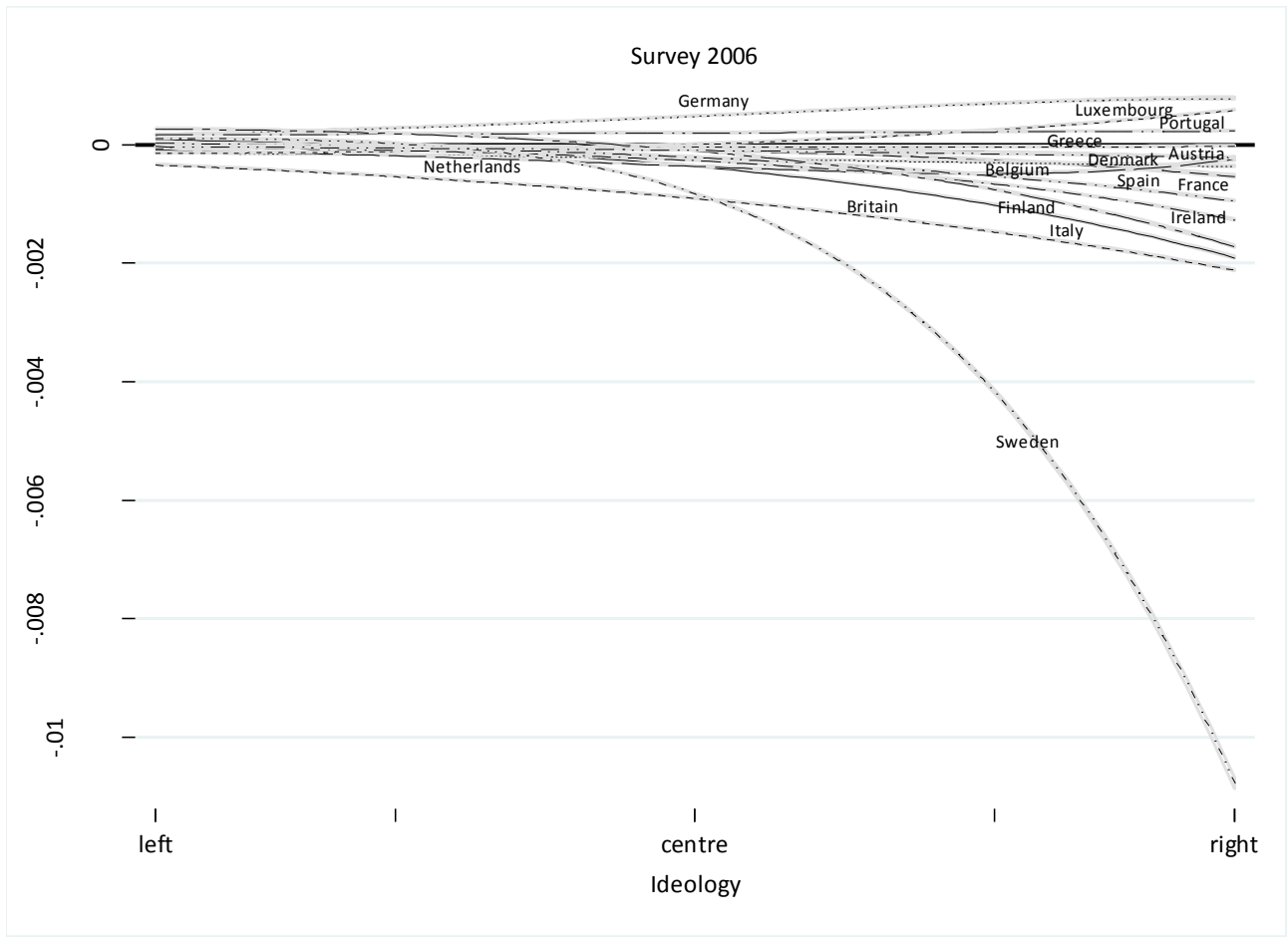


Figure B. Marginal effects of an increase in proximity across the ideological spectrum.  
 Note: The increase is standard deviation closer than the country-year proximity mean.

Table B compares the results from the model based on the 1978-96 data and those based on the 2006-08 data. The subsection ‘A note on ideology and proximity in the latest surveys’ is based to a good extent on this table.

Table B. Model comparison of the impact of closer distance across the left-right spectrum

	Model based on 1978-96 data	Model based on 2006-08 data	Comments
L	More against	More for (left), More against – but to a greater degree (right)	Minor difference, More support from the left
NL	More for	More for (left), More for - but to a greater degree (right)	Minor difference, More support from the right
GB	More for	More for (left), More for - but to a greater degree (right)	Minor difference, More support from the right
S	More for	More against (left), More for (right)	Minor difference, Less support from the left
SWE	More for	More against (left), More for (right)	Appreciable difference – greater left-right divide ( <u>left turns more against</u> )
B	More against (left), More for (right)	More for (left), More for - but to a greater degree (right)	Minor difference (divide remains), more support from the left
G	More against (left), More for (right)	More against (left), More against – but to a greater degree (right)	Appreciable difference – less left-right divide ( <u>right turns more against</u> )
D	More against (left), More for (right)	More for (left), More for - but to a greater degree (right)	Minor difference (divide remains), more support from the left
I	More against (left), More for (right)	More against (left), More for (right)	No difference
FI	More against (left), More for (right)	More against (left), More for (right)	No difference
P	More against (left), More for (right)	More against (left), More against – but to a greater degree (right)	Appreciable difference – less left-right divide ( <u>right turns more against</u> )
F	More for (left), More against – but to a lesser degree (right)	Almost no impact (left), More for (right)	Appreciable difference – more left-right divide ( <u>right turns more for</u> )
AU	More for (left), More against – but to a lesser degree (right)	More for (left), More for - but to a greater degree (right)	Appreciable difference – more left-right divide ( <u>right turns more for</u> )
IR	More for (left), More against – but to a lesser degree (right)	More for (left), More for - but to a greater degree (right)	Appreciable difference – more left-right divide ( <u>right turns more for</u> )
GR	More for (left), More against – but to a lesser degree (right)	More for – but to a greater degree (left), More for (right) – values close to zero	Appreciable difference – more left-right divide ( <u>left turns more for</u> ), but distance almost irrelevant

Note: More for (against) means more (less) support for nuclear energy.

ARTICLE SECTION: *RESULTS*  
SUBSECTION: *Dynamics of belief updating*

*Table C. Volatility: Standard Deviation of Marginal Effects across Surveys (farther-from-plant subjects)*

	Left	Center	Right
Belgium	<i>0.142</i>	<b>0.152</b>	0.147
Germany	<i>0.133</i>	<b>0.151</b>	0.147
Britain	<i>0.115</i>	<b>0.152</b>	0.125
Netherlands	<i>0.076</i>	<b>0.145</b>	0.129
Italy	<i>0.117</i>	0.139	<b>0.151</b>
Spain	<i>0.108</i>	0.147	<b>0.158</b>
France	0.132	<b>0.146</b>	<i>0.085</i>
Denmark	<i>0.040</i>	0.107	<b>0.152</b>
Luxembourg	<i>0.104</i>	0.127	<b>0.143</b>
Greece	<i>0.073</i>	0.099	<b>0.123</b>
Portugal	<i>0.142</i>	0.151	<b>0.156</b>
Ireland	<i>0.105</i>	0.117	<b>0.129</b>

Note: Largest values in bold, smallest in italics; respondents living a standard deviation farther from a plant than the country-specific mean distance.

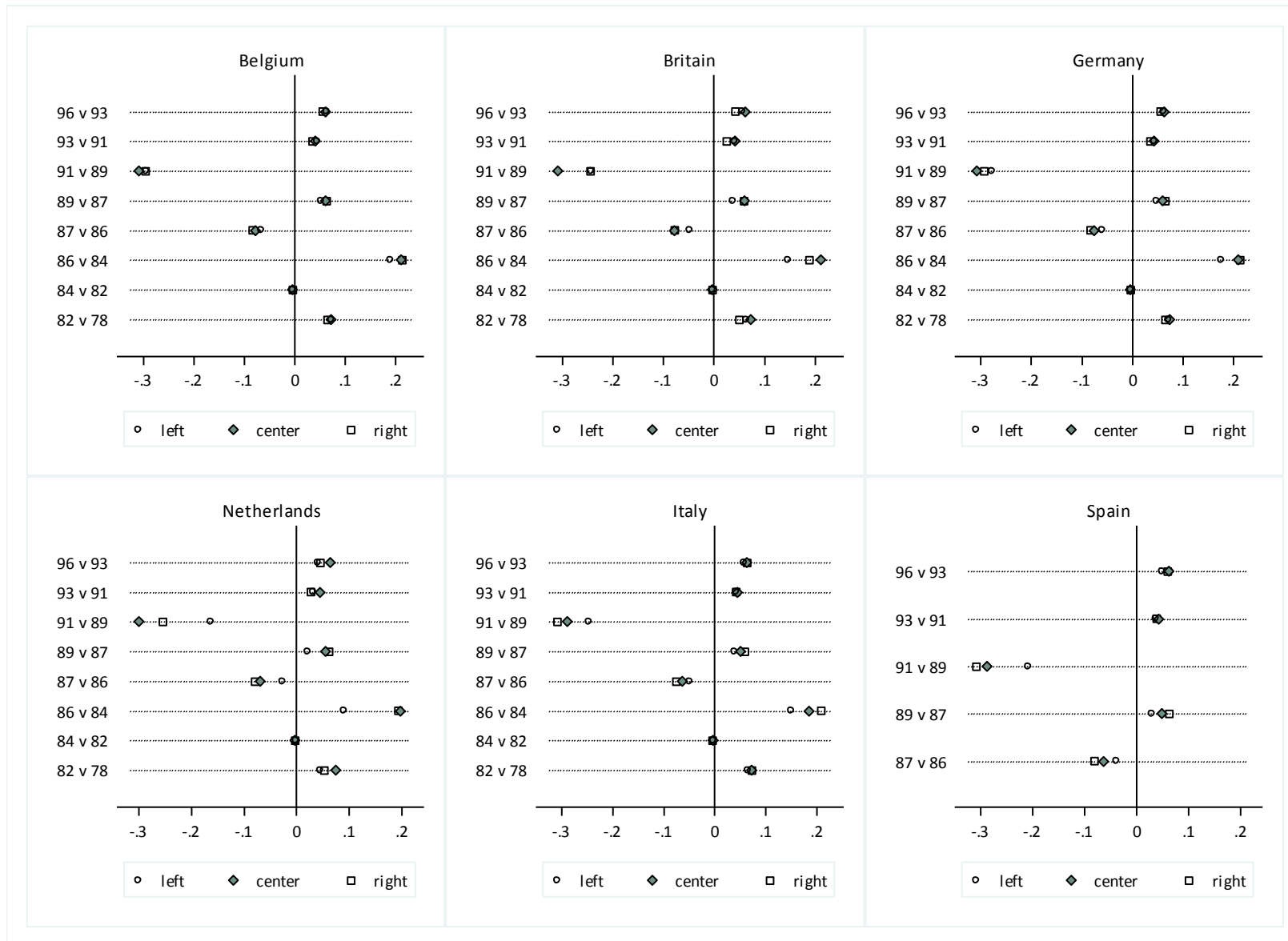


Figure C1. Updating dynamics of beliefs on nuclear risk for centrist, left- and right-wing respondents (farther-from-plant subjects).

Note: Cross-survey marginal effects: positive (negative) values indicate higher (lower) probability of rejection in later survey. Respondents residing one standard deviation farther than the country mean proximity.

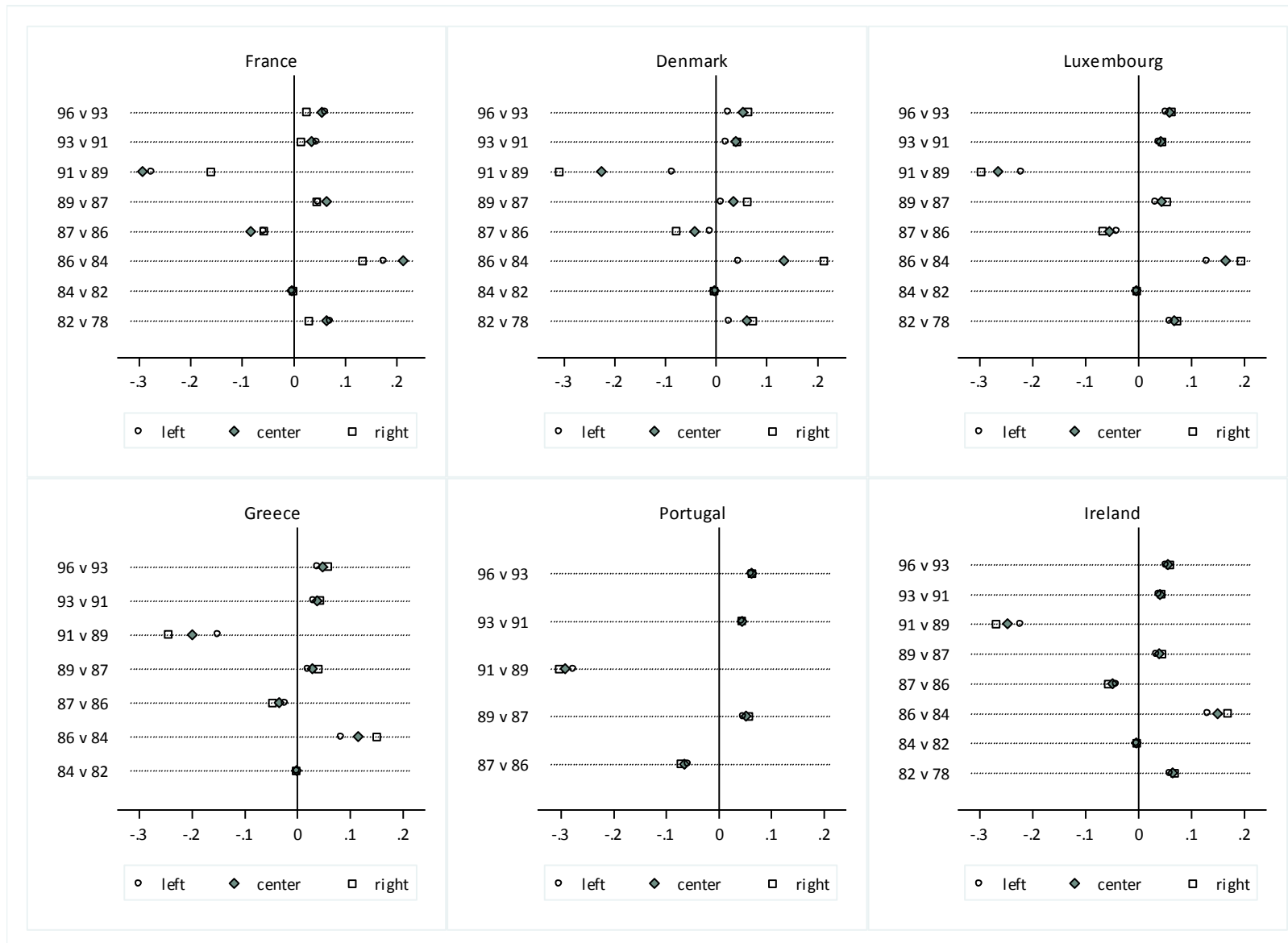


Figure C2. Updating dynamics of beliefs on nuclear risk for centrist, left- and right-wing respondents (farther-from-plant subjects). Note: Cross-survey marginal effects: positive (negative) values indicate higher (lower) probability of rejection in later survey. Respondents residing one standard deviation farther than the country mean proximity.



ARTICLE SECTION: FOOTNOTE 7

Table D shows the results of three probit regressions: an unweighted model, a model where the weight<sup>1</sup> is included as independent variable and a weighted model. Note that a) results are substantively very similar, b), as expected, standard errors are higher in the weighted model, and c) the coefficient of the weight variable in the middle model is undistinguishable from zero. The correlation coefficient between the dependent variable and these national weights is merely -0.0080. Clearly, the weights have not been constructed in a way related to the dependent variable. A bias is therefore unlikely. Since the weighted and unweighted results are not substantively different, it is better to use the unweighted model because weights tend to yield a bias.

Table D. Comparison between weighted and unweighted probit regressions

	Unweighted	Weight as IV	Weighted
Ideology	-11.72*** (0.346)	-11.73*** (0.347)	-11.83*** (0.376)
Proximity	0.0498*** (0.00834)	0.0496*** (0.00834)	0.0482*** (0.00875)
Ideology x Proximity	-0.0138*** (0.00139)	-0.0139*** (0.00139)	-0.0132*** (0.00145)
Education	-1.026*** (0.196)	-1.021*** (0.197)	-1.083*** (0.212)
Gender	25.94*** (1.016)	25.95*** (1.016)	25.66*** (1.099)
Age	-0.158*** (0.0316)	-0.160*** (0.0316)	-0.164*** (0.0343)
Income	-1.463*** (0.170)	-1.468*** (0.171)	-1.382*** (0.187)
Weight		1.166 (1.238)	
Constant	-15.03*** (3.878)	-16.17*** (4.058)	-14.13*** (4.168)
Observations	65,955	65,955	67,906
Wald chi2	6542	6542	.

Probit regressions with robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.  
Coefficients and standard errors, in parentheses, multiplied by 100.  
Coefficients and standard errors for country and survey variables are included in the model but they are not reported in this table.

<sup>1</sup> I use what Eurobarometer calls ‘Weight Result from Target’. It takes the value of 1 where Eurobarometer has produced no weighting factor.