1 Introduction

The chief quantity of interest in this paper is the effect of the 1994 change in question order on respondents' satisfaction with EU-level democracy. Moreoever, the fact that the "new" order elicits a comparison between domestic and EU institutions reveals something about the sources of EU legitimacy through the interaction with national institutions.

2 Complete-Pooling Model

The first model considers the entire pooled dataset and estimates EU satisfaction as a function of perceiving benefits from EU membership, satisfaction with national institutions, national regime support, question order effect, and the interaction of national institution satisfaction and the order effect. The outcome is a dichotomized satisfied / dissatisfied and we model the latent satisfaction using a Normal CDF, or probit, link function[1]. The results in Table 1 (presented graphically in Figure 1) are encouraging in broad strokes. All of the predictor variables are statistically significant in the expected direction. Satisfaction with national democracy is the strongest predictor of satisfaction with EU democracy; the belief that one's country has benefited from EU membership is also a strong predictor of satisfaction with EU institutions. On average, framing EU democracy in the light of national institutions results in a lower probability of being satisfied with EU democracy. However, this effect is mitigated, even overcome, for respondents who supported the national government in the last election. This result supports the proposition that EU institutions derive some legitimacy through the delegation of powers from national governments.

```
> model1 <- glm(E ~ ben + N + regimeSupport1 + change * N, data = data.common,
+     model = T, family = binomial("probit"))
```

[1]Later on, we consider the other response categories and model all four categories in an ordered probit setup.

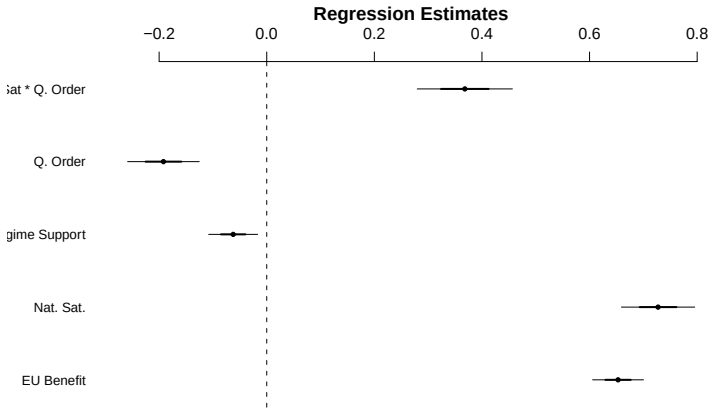
Table 1. Pooling across all countries assumes a common effect of all predictors.

	Model 1
(Intercept)	−0.77*
	(0.03)
benTRUE	0.65*
	(0.02)
NTRUE	0.73*
	(0.03)
regimeSupport1TRUE	−0.06*
	(0.02)
change	−0.19*
	(0.03)
NTRUE:change	0.37*
	(0.04)
N	15438
AIC	18119.74
BIC	18303.21
$\log L$	−9035.87

Standard errors in parentheses

* indicates significance at $p < 0.05$

Figure 1. Graphical summary of Model 1



3 Independent Models (No Pooling)

```
> countrymodels <- by(data.common, data.common$country, function(x) {
+     glm(E ~ ben + N + regimeSupport1 + change * N, data = x,
+         family = binomial("probit"))
+ })
```

	FR	BE	NL	DE-W	IT	LU	DK	IE	UK	GR	ES	PT
(Intercept)	−0.87∗	−0.66∗	−1.00∗	−0.99∗	−0.72∗	−0.68∗	−1.37∗	−0.31∗	−0.48∗	−1.07∗	−0.72∗	−0.60∗
	(0.11)	(0.12)	(0.13)	(0.10)	(0.11)	(0.23)	(0.14)	(0.15)	(0.08)	(0.11)	(0.08)	(0.12)
benTRUE	0.54∗	0.56∗	0.45∗	0.60∗	0.43∗	0.41∗	1.07∗	0.88∗	0.84∗	0.75∗	0.48∗	0.65∗
	(0.08)	(0.09)	(0.10)	(0.07)	(0.08)	(0.15)	(0.08)	(0.13)	(0.07)	(0.10)	(0.08)	(0.09)
NTRUE	0.93∗	0.78∗	0.83∗	0.92∗	0.53∗	0.88∗	0.78∗	0.55∗	0.44∗	0.51∗	1.20∗	0.64∗
	(0.13)	(0.12)	(0.12)	(0.11)	(0.15)	(0.22)	(0.13)	(0.13)	(0.10)	(0.12)	(0.14)	(0.13)
regimeSupport1TRUE	0.10	0.09	0.02	−0.03	0.00	0.21	−0.07	−0.10	−0.36∗	−0.19∗	0.07	0.13
	(0.09)	(0.09)	(0.07)	(0.08)	(0.08)	(0.12)	(0.07)	(0.09)	(0.08)	(0.08)	(0.09)	(0.09)
change	−0.28∗	−0.65∗	−0.54∗	−0.36∗	0.16	−0.84∗	−0.37	−0.59∗	−0.20∗	0.25∗	−0.14	−0.64∗
	(0.13)	(0.13)	(0.15)	(0.13)	(0.09)	(0.29)	(0.19)	(0.13)	(0.09)	(0.09)	(0.10)	(0.12)
NTRUE:change	0.58∗	1.09∗	0.49∗	0.54∗	0.48∗	1.01∗	0.22	0.76∗	0.25	0.36∗	0.33	1.17∗
	(0.17)	(0.17)	(0.17)	(0.16)	(0.18)	(0.32)	(0.20)	(0.17)	(0.13)	(0.16)	(0.18)	(0.17)
N	1213	1174	1417	1451	1231	643	1523	1347	1606	1317	1228	1288
AIC	1315.69	1184.11	1743.19	1606.97	1552.80	667.79	1786.24	1249.97	1956.99	1633.34	1323.98	1269.61
BIC	1438.12	1305.75	1869.35	1733.69	1675.58	774.98	1914.12	1374.90	2086.14	1757.74	1446.70	1393.47
log L	−633.85	−568.06	−847.60	−779.49	−752.40	−309.89	−869.12	−600.98	−954.49	−792.67	−637.99	−610.80

Standard errors in parentheses

4 Country Fixed Effects

Next, country fixed effects are included – that is, an indicator for each country that represents the baseline satisfaction with EU democracy in that country. This model is estimated without an intercept, so that all country baselines are included.

```
> model.fixed <- glm(E ~ 0 + country + ben + N + regimeSupport1 +
+     change * N, data = data.common, model = T, family = binomial("probit"))
```

5 Country Intercepts

Now, we relax the assumption of the previous model that there is no common baseline, and allow the intercept to vary by country.

```
> country.int <- lmer(E ~ ben + N + regimeSupport1 + change * N +
+     (1 | country), data = data.common, family = binomial("probit"))
> country.samp <- mcsamp(country.int, n.iter = 5000, n.burnin = 500)
```

Figure 2. Pooled model with country intercepts.

6 Country Intercepts and Order Effects

Finally, the most complex model estimates a varying intercept for each country and also allows the effect of the change to vary by country. All other effects are assumed to be common. This model is fit here in quick-and-dirty penalized likelihood using `lmer()` but is the starting point for the (correct) Bayesian hierarchical model.

```
> model.varchange <- lmer(E ~ ben + N + regimeSupport1 + change *
+     N + (1 + change | country), data = data.common, family = binomial("probit"))
> varchange.samp <- sim(model.varchange, n.sims = 5000)
```

Figure 3. Summary of varying-slope varying-intercept model.

Table 2. Model with country fixed effects.

	Model 3
countryFRANCE	−0.79*
	(0.05)
countryBELGIUM	−0.70*
	(0.05)
countryNETHERLANDS	−1.28*
	(0.05)
countryWEST GERMANY	−0.97*
	(0.05)
countryITALY	−0.67*
	(0.05)
countryLUXEMBOURG	−0.74*
	(0.07)
countryDENMARK	−1.26*
	(0.05)
countryIRELAND	−0.38*
	(0.05)
countryUNITED KINGDOM	−0.69*
	(0.04)
countryGREECE	−0.87*
	(0.05)
countrySPAIN	−0.61*
	(0.05)
countryPORTUGAL	−0.69*
	(0.05)
benTRUE	0.66*
	(0.02)
NTRUE	0.82*
	(0.04)
regimeSupport1TRUE	−0.07*
	(0.02)
change	−0.22*
	(0.03)
NTRUE:change	0.39*
	(0.04)
N	15438
AIC	17607.29
BIC	18127.12
$\log L$	−8735.64

Standard errors in parentheses

* indicates significance at $p < 0.05$

7 Monism/Dualism: How the EU is portrayed and perceived

```
> monist <- data.frame(country = levels(data.common$country))
> monist$monist <- 1
> monist$monist[c(4, 5, 7, 8, 9)] <- 0
> monist$rohrinstqual <- c(17.43, 16.95, 18, 17.03, 13.5, 18, 18,
```

```
+     16.15, 16.75, 13.65, 14.16, 14.08)
> instqual <- data.frame(matrix(unlist(by(data.common[, c("regimeSupport1",
+     "N")], data.common$country, function(x) {
+     x <- na.omit(x)
+     n <- nrow(x)
+     badinst <- sum(x[, 1] == TRUE & x[, 2] == FALSE)/n
+     goodinst <- sum(x[, 1] == FALSE & x[, 2] == TRUE)/n
+     c(badinst, goodinst, goodinst/badinst)
+ })), nrow = 12, ncol = 3, byrow = TRUE))
> names(instqual) <- c("RegimeNotNInst", "NInstDespite", "instQual")
> instqual$country <- levels(data.common$country)
> monist <- merge(monist, instqual)
> data.common <- merge(data.common, monist)
> model.varchange <- lmer(E ~ ben + N + regimeSupport1 + instQual +
+     change * N * monist + (1 + change | country), data = data.common,
+     family = binomial("probit"))
```

8 Quality and Satisfaction with National Institutions

```
> instqual <- data.frame(matrix(unlist(by(data.common[, c("regimeSupport1",
+     "N")], data.common$country, function(x) {
+     x <- na.omit(x)
+     n <- nrow(x)
+     badinst <- sum(x[, 1] == TRUE & x[, 2] == FALSE)/n
+     goodinst <- sum(x[, 1] == FALSE & x[, 2] == TRUE)/n
+     c(badinst, goodinst, goodinst/badinst)
+ })), nrow = 12, ncol = 3, byrow = TRUE))
> names(instqual) <- c("RegimeNotNInst", "NInstDespite", "instQual")
> rownames(instqual) <- levels(data.common$country)
```