Clarity of Responsibility and Economic Evaluations Supporting Information

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This document provides the notes for reviewers described in the main study. The following sections: (1) present the breakdown of partisans versus non-partisans by political clarity; (2) provide descriptive information about the level one and level two data; (3) provide specification details and convergence diagnostics for the Bayesian normal linear regression in the study's main analysis; and (4) demonstrate the robustness of the results to alternative operational definitions of in-party and out-party membership.

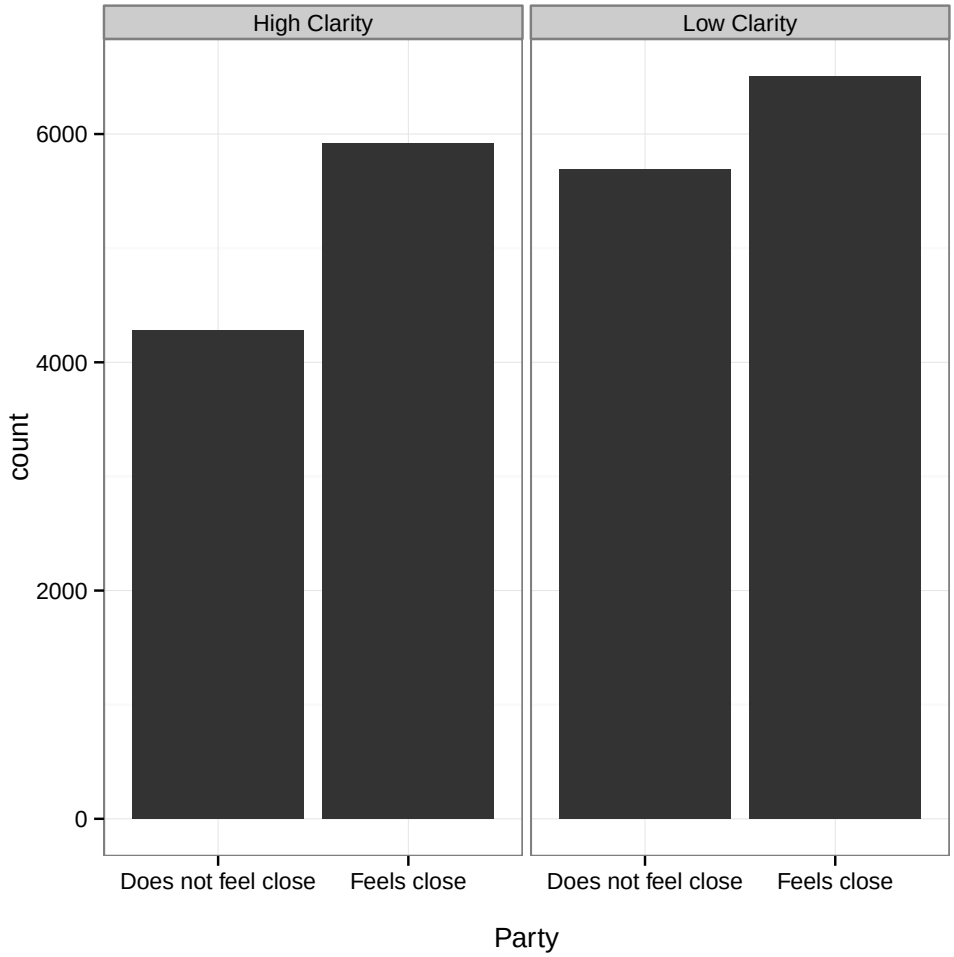
1 Party Attachments and Political Clarity

The study hypotheses presume party attachments are similar in their psychological properties across the scale of responsibility. To provide suggestive evidence on this point, it is useful to begin by asking how, if at all, party support looks across a blunt dichotomy: countries below or above the mean on responsibility scale (where those below have high clarity and those above low clarity). The goal is to assess whether the diffuse decision making that typifies a low clarity system might lead people not to attach to single party at all.

Figure 1 produces the frequency distribution for people who say they do not versus do feel close to a political party by political clarity. In one sense, there are differences across the two types of systems. Looking first at non-supporters and close supporters in the left panel, there are approximately 2000 more close partisans than non-partisans. So in a system where it is easy to assign reward or blame, people appear willing to align themselves with (at least) one strategic group. The status of non-partisan versus close supporters in low clarity countries reveals a smaller difference. These two groups are roughly evenly distributed in countries where blurring conditions obscure party respon-

sibility. At the same time, however, there numerous people who *do* say they feel close to a particular party in both types of systems. That people feel a sense of attachment in both suggests there is reason to study motivated partisans in both high- and low-clarity settings.

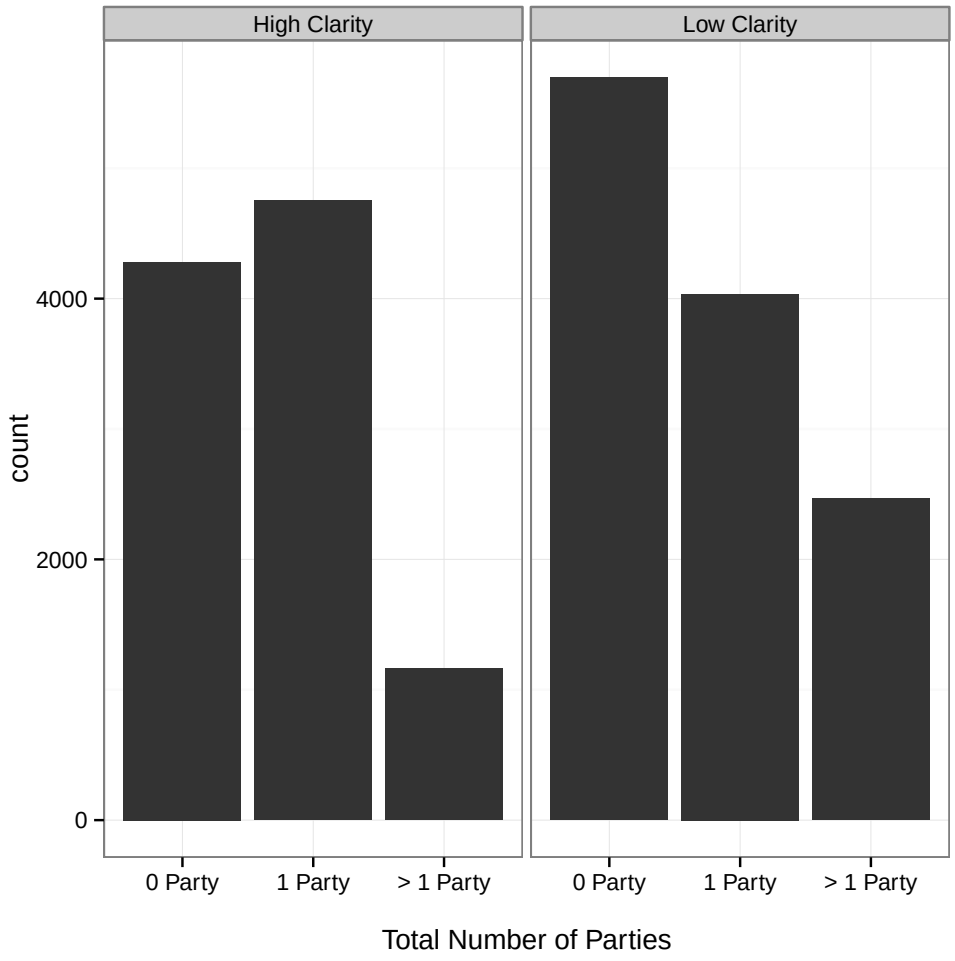
Figure 1. The distribution of non-supporters and close party supporters by high versus low clarity of responsibility



Another possibility is that people in unclear systems attach themselves to multiple parties simultaneously. To investigate this possibility, I distinguish between people who feel close to no party, one party, or more than one party in Figure 2. Once again, there are differences in the tendency of party support between high and low clarity countries. But the similarities outweigh the differences. In both low- and high-clarity countries one can observe many people who identify with one and only one party. Although these sorts of individuals are probably less central to explaining response-driven elections, they are the key group in the main analysis of economic evaluations because they

fit the profile of the motivated partisan.

Figure 2. The distribution of people who identify with one versus more than one party by high versus low clarity of responsibility



2 Descriptive Information, Coding Ranges, and Type of Data

The data used in the analysis are from the Comparative Study of Electoral Systems project, Module 1, accessed at http://www.cses.org/. After generating and recoding data as described in the main analysis, the descriptive information for the individual opinion data is reported in Table 1. The descriptive information for the country-level predictors is reported in Table 2.

Table 1. Descriptive statistics for the CSES public opinion data.

Variable	Mean	Standard Deviation	Minimum	Maximum
Economic Evaluation	0.48	0.95	−2	2
Coalition Partisan	0.42	0.49	0	1
Education	0	0.5	−1.29	0.79
Income	0	0.5	−0.74	0.68
Age	0	0.5	−0.93	1.62
Female	0.49	0.5	0	1
Unemployed	0.03	0.18	0	1
N = 11130				

Table 2. Descriptive statistics for the 11 western democracies in the main analysis.

Variable	Mean	Standard Deviation	Minimum	Maximum
Blurring Conditions	0	1.28	−1.84	1.47
Unemployment	0	1.93	−3.05	2.56
Inflation	0	1.08	−1.59	2.2
N = 11				

3 Specification and Convergence Diagnostics

The specification for the Bayesian normal linear regression appears in Equations 1–3.

$$
\begin{aligned}
Economy_{ij} &\sim N(\beta_{j1} + \beta_{j2} COAL_{ij} + \beta_Z X_{iz}, \sigma^2) && (1)\\
\begin{bmatrix} \beta_{j1} \\ \beta_{j2} \end{bmatrix} &\sim N\left(\begin{bmatrix} \gamma_{10} + \gamma_{11} BLUR_j + \gamma_{12} UNEMP_j + \gamma_{13} INFLAT_j \\ \gamma_{20} + \gamma_{21} BLUR_j + \gamma_{22} UNEMP_j + \gamma_{23} INFLAT_j \end{bmatrix}, \mathbf{\Omega} \right) && (2)\\
\mathbf{\Omega} &= \begin{bmatrix} \omega_{11}^2 & \omega_{12} \\ \omega_{21} & \omega_{22}^2 \end{bmatrix} && (3)
\end{aligned}
$$

3.1 Priors

I specify independent vague normal priors over the level two parameters and use an inverse-Wishart prior over covariance of the γ parameters. All of the priors used in the study's main analysis are as follows:

$$
\begin{aligned}
\gamma_{10} &\sim N(0, 10^2) \\
\gamma_{11} &\sim N(0, 10^2) \\
\gamma_{12} &\sim N(0, 10^2) \\
\gamma_{13} &\sim N(0, 10^2) \\
\gamma_{20} &\sim N(0, 10^2) \\
\gamma_{21} &\sim N(0, 10^2) \\
\gamma_{22} &\sim N(0, 10^2) \\
\gamma_{23} &\sim N(0, 10^2) \\
\sigma &\sim \text{Dunif}(0, 10^2) \\
\Omega &\sim \text{inverse-Wishart}(W, 2) \\
\beta_Z &\sim N(0, 10^2), \quad z = 1 \ldots 5
\end{aligned}
$$

3.2 Convergence

Using two sets of different starting values, two separate simulation chains were run from the priors using random starting values. The first 5000 simulated draws were discarded as burn-in simulations. Diagnostics for the parameters comprising the second-level model are presented in Table 3. The Raftery-Lewis values and all other diagnostics are obtained from the longer run of 20000 simulated draws. Also, examination of the Gelman-Rubin comparison of the within- and between-chain variance indicated convergence for each posterior distribution (the graphical evidence is available on request).

Table 3. Convergence diagnostics for the Bayesian multilevel logistic regression of economic evaluations

Parameter	Geweke	Heidelberger-Welch	Raftery-Lewis	
	Z	p	N	I
γ_{10}	−0.29	0.37	4095	1.09
γ_{11}	−1.28	0.34	4129	1.1
γ_{12}	−0.87	0.6	4267	1.14
γ_{13}	−0.22	0.96	3865	1.03
γ_{20}	0.21	0.62	4197	1.12
γ_{21}	−0.61	0.29	4163	1.11
γ_{22}	0.28	0.58	4095	1.09
γ_{23}	−0.72	0.76	4197	1.12
ω_{11}	0.01	0.54	3802	1.01
ω_{22}	−0.29	0.66	3897	1.04
ρ	−0.02	0.63	4197	1.12
σ	−0.71	0.78	3802	1.01

For the Geweke and Heidelberger-Welch, Raftery-Lewis diagnostics, values are calculated using one of the two chains used to produce the results in the main analysis. Preliminary analysis of one chain for the Raftery-Lewis run length diagnostic indicated little need for a long run of the MCMC chain.

4 Robustness Checks using Alternative Definitions of Partisanship

4.1 Major party identifiers

The study's main analysis defines partisan differences in terms of being close to a party in government or not. This section briefly examines alternative operationalizations of in-party and out-party support. First, I use an alternative aspect of behavior to measure government versus opposition supporters: people who say that the intend to *vote* for the party in power versus people who intend to vote for one of the parties in the opposition. The results of the alternative specification are presented in Table 4. Comparing these results with the main analysis shows there is little difference in the effect of partisanship when defined in this way.

Table 4. Multilevel regression model for individual evaluations of the national economy: Major party voters alternative

	Posterior Summaries		
	Mode	SD	90% BCI
Opposition Voter Equation, β_{j1}			
Intercept, γ_{10}	0.44	0.15	[0.2, 0.68]
Blurring Conditions, γ_{11}	0.13	0.15	[-0.11, 0.37]
Unemployment, γ_{12}	−0.26	0.1	[-0.42, -0.1]
Δ Inflation, γ_{13}	0.21	0.17	[-0.08, 0.49]
Government Party Voter Equation, β_{j2}			
Intercept, γ_{20}	0.3	0.08	[0.18, 0.42]
Blurring Conditions, γ_{21}	−0.19	0.07	[-0.31, -0.07]
Unemployment, γ_{22}	0.03	0.05	[-0.05, 0.11]
Δ Inflation, γ_{23}	−0.13	0.09	[-0.27, 0.01]
Unmodeled Predictors, β_Z			
Education	0.18	0.02	[0.15, 0.2]
Income	0.18	0.01	[0.16, 0.21]
Age	0.11	0.01	[0.09, 0.13]
Female	−0.21	0.01	[-0.24, -0.19]
Unemployed	−0.08	0.04	[-0.14, -0.02]
Variance Components			
Opposition Voter, ω_{11}	0.42	0.14	[0.26, 0.66]
Coalition Voter, ω_{22}	0.2	0.07	[0.13, 0.33]
Correlation, ρ	−0.72	0.23	[-0.94, -0.25]
Residual, σ	0.74	0	[0.73, 0.74]

Estimates for all quantities are posterior summaries calculated by combining two samples of 5000 from the posterior distributions. N = 12565 (Evaluations); J = 11 (Countries).

4.2 Major party partisans only

I also consider whether the inclusion of minority members of a governing coalition distorts the differences between in- and out-party identifiers. This would be the case in countries where power is shared (i.e., those with low clarity) if only those people who support the head of government (e.g., a prime minister) see their party implicated by the state of the economy. To check this possibility I estimated the multilevel regression again by coding in-partisans as those who are close to the major governing party, which I define as the party of the head of government. The results of this alternative are presented in Table 5, and show that once again, changing the operational definition slightly does not alter the study's conclusions.

Table 5. Multilevel regression model for individual evaluations of the national economy: Major party identifiers only

	Posterior Summaries		
	Mode	SD	90% BCI
Opposition Partisan Equation, β_{j1}			
Intercept, γ_{10}	0.44	0.15	[0.2, 0.68]
Blurring Conditions, γ_{11}	0.15	0.15	[−0.08, 0.38]
Unemployment, γ_{12}	−0.27	0.1	[−0.42, −0.1]
Δ Inflation, γ_{13}	0.23	0.18	[−0.06, 0.52]
Major Government Partisan Equation, β_{j2}			
Intercept, γ_{20}	0.34	0.07	[0.22, 0.45]
Blurring Conditions, γ_{21}	−0.21	0.07	[−0.32, −0.09]
Unemployment, γ_{22}	0.05	0.05	[−0.02, 0.13]
Δ Inflation, γ_{23}	−0.18	0.08	[−0.31, −0.04]
Unmodeled Predictors, β_Z			
Education	0.19	0.02	[0.16, 0.23]
Income	0.17	0.02	[0.14, 0.2]
Age	0.09	0.02	[0.06, 0.12]
Female	−0.22	0.02	[−0.25, −0.19]
Unemployed	−0.11	0.05	[−0.19, −0.03]
Variance Components			
Opposition Partisan, ω_{11}	0.42	0.14	[0.27, 0.66]
Major Government Partisan, ω_{22}	0.18	0.07	[0.12, 0.31]
Correlation, ρ	−0.67	0.25	[−0.92, −0.16]
Residual, σ	0.75	0.01	[0.74, 0.76]

Estimates for all quantities are posterior summaries calculated by combining two samples of 5000 from the posterior distributions. N = 8691 (Evaluations); J = 11 (Countries).

4.3 Partisans with non-partisan baseline

A final point of attention is that the study's main analysis excludes non-partisans (those who say they are not close to any party). The aim in doing so is to provide a clear contrast between the opposition partisan intercept, β_{j1}, and the coalition partisan slope, β_{j2}. In the following analysis I add in the non-partisans, creating a new partisan variable coded as follows: -1 = Opposition Partisan; 0 = Non-Partisan; 1 = Coalition Partisan. Thus, the intercept equation in the multilevel model now characterizes the non-partisans, and the partisan equation coefficients must be interpreted by multiplying the intercept by -1 for opposition partisans and by 1 for coalition partisans.

The results are presented in Table 6. With the baseline now changed, the particular coefficients are now different. But more importantly, the results provide the same ultimate conclusion: clear responsibility motivates out- and in-partisans to see distinct preferred-world economies, and unclear responsibility pulls these partisans closer together.

Table 6. Multilevel regression model for individual evaluations of the national economy: Main sample plus non-partisan baseline

	Posterior Summaries		
	Mode	SD	90% BCI
Non-partisan Equation, β_{j1}			
Intercept, γ_{10}	0.53	0.12	[0.33, 0.72]
Blurring Conditions, γ_{11}	0.06	0.12	[−0.13, 0.25]
Unemployment, γ_{12}	−0.25	0.08	[−0.38, −0.13]
Δ Inflation, γ_{13}	0.15	0.15	[−0.09, 0.38]
Partisan Equation, β_{j2}			
Intercept, γ_{20}	0.15	0.03	[0.1, 0.21]
Blurring Conditions, γ_{21}	−0.1	0.03	[−0.15, −0.04]
Unemployment, γ_{22}	0.01	0.02	[−0.02, 0.05]
Δ Inflation, γ_{23}	−0.07	0.04	[−0.14, −0.01]
Unmodeled Predictors, β_Z			
Education	0.2	0.01	[0.18, 0.22]
Income	0.2	0.01	[0.18, 0.22]
Age	0.11	0.01	[0.09, 0.13]
Female	−0.2	0.01	[−0.22, −0.18]
Unemployed	−0.17	0.03	[−0.21, −0.12]
Variance Components			
Opposition Partisan, ω_{11}	0.32	0.12	[0.23, 0.55]
Coalition Partisan, ω_{22}	0.09	0.03	[0.06, 0.15]
Correlation, ρ	−0.72	0.25	[−0.93, −0.2]
Residual, σ	0.76	0	[0.75, 0.76]

Estimates for all quantities are posterior summaries calculated by combining two samples of 5000 from the posterior distributions. N = 20721 (Evaluations); J = 11 (Countries).