Supplemental Online Appendix

"Values and Political Predispositions in the Age of Polarization: Unpacking the Relationship between Partisanship and Ideology in the U.S., 1988-2012"

> Robert N. Lupton Steven M. Smallpage Adam M. Enders

Table of Contents

- I. Question wording for all items used in the analysis, Page 2
- **II.** Figure SI1: Over time reliability of the value orientations scale, Page 5
- **III.** Figure SI2: Item analysis of the ANES egalitarianism and moral traditionalism values items, Pages 6-7
- **IV.** Examining the possible effects of "don't know" responses to the ANES ideological self-identification question on the results reported in the manuscript
 - A. Figure SI3: Graph of the proportion of "don't know" responses, Page 9
 - B. Table SI1: Results of a Heckman selection model in which we investigate the potential biases arising from omitting from the analysis "don't know" responses, Page 11
- V. Additional regression robustness checks
 - A. Table SI2: Predicting the over time influence of ideology on partisanship conditioned on core values omitting the 2012 ANES Internet sample, Page 13
 - B. Figure SI4: Marginal effect of ideology on partisanship conditioned on egalitarianism, Page 15
 - C. Figure SI5: Marginal effect of ideology on partisanship conditioned on moral traditionalism, Page 15
 - D. Figure SI6: Marginal effect of latent ideology on latent partisanship conditioned on latent core values, Page 17
 - E. Table SI3: Predicting the over time influence of partisanship on ideology conditioned on core values, Page 18
- VI. Figure SI7: Cross-lagged panel model of ideology and party identification, 1994-96 ANES Panel Study, Page 19

I. Full Question Wording for Items Analyzed in the ANES Cumulative File, 1988-2012

Note: An * indicates that the variable has been reverse coded so that higher values reflect more conservative attitudes.

- Partisanship (VCF0301): Generally speaking, do you think of yourself as a Republican, a Democrat, an Independent, or what? Would you call yourself a strong Democrat/Republican or a not very strong Democrat/Republican? Do you think of yourself as closer to the Republican Party or to the Democratic Party? 1 – Strong Democrat 2 -Weak Democrat 3 – Independent-Democrat 4 – Independent-Independent 5 – Independent-Republican 6 – Weak Republican 7 – Strong Republican
- 2.) Ideological self-identification (VCF0803): We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself on this scale, or haven't you heard much about this? 1 Extremely liberal 7 Extremely conservative
- 3.) Egalitarianism battery:
 - A. Do whatever is necessary to ensure an chance at success (VCF9013): Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 – Disagree strongly
 - B. *Too far at pushing equal rights (VCF9014): We have gone too far in pushing equal rights in this country. 1 Disagree strongly 2 Disagree somewhat 3 Neither agree nor disagree 4 Agree somewhat 5 Agree strongly
 - C. Equal chance in life (VCF9015): One of the big problems in this country is that we don't give everyone an equal chance. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 –Disagree strongly
 - D. *Not a big problem if some people have a better chance in life (VCF9016): It is not really a big problem if some people have more of a chance in life than others. 1 Disagree strongly 2 Disagree somewhat 3 Neither agree nor disagree 4 Agree somewhat 5 Agree strongly
 - E. *Worry less about how equal people are (VCF9017): This country would be better off if we worried less about how equal people are. 1 Disagree strongly 2 Disagree somewhat 3 Neither agree nor disagree 4 Agree somewhat 5 Agree strongly
 - F. Fewer problems if people were treated more equally (VCF9018): If people were treated more equally in this country we would have many

fewer problems. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 –Disagree strongly

- 4.) Moral traditionalism battery:
 - A. *New lifestyles (VCF0851): The newer lifestyles are contributing to a breakdown of society. 1 Disagree strongly 2 Disagree somewhat 3 Neither agree nor disagree 4 Agree somewhat 5 Agree strongly
 - B. Moral behavior (VCF0852): The world is always changing and we should adjust our view of moral behavior to those changes. 1 – Agree strongly 2 – Agree somewhat 3 – Neither agree nor disagree 4 – Disagree somewhat 5 –Disagree strongly
 - C. *Traditional values (VCF0853): This country would have many fewer problems if there were more emphasis on traditional family ties. 1 Disagree strongly 2 Disagree somewhat 3 Neither agree nor disagree 4 Agree somewhat 5 Agree strongly
 - D. Different moral standards (VCF0854): We should be more tolerance of people who choose to live according to their own moral standards, even if they are different from our own. 1 – Disagree strongly 2 – Disagree somewhat 3 – Neither agree nor disagree 4 – Agree somewhat 5 – Agree strongly
- 5.) Time (VCF0004): 0 1988 1 1992 2 -1996 3 2000 4 2004 5 2008 6 2012
- 6.) Retrospective economic evaluations (VCF0870): Would you say that over the last year the nation's economy has gotten better, stayed about the same or gotten worse? 1 – Worse 2 – Stayed same 3 – Better

*Note that this variable has been reverse coded such that higher values correspond to more accurate assessments of the national economy

- 7.) *Biblical literalism
 - A. 1988 (VCF0845): 1 The Bible was written by men who lived so long ago that it is worth very little today 2 The Bible is a good book because it was written by men, but God had nothing to do with it. 3 The Bible was written by men inspired by God but it contains some human errors 4 The Bible is God's word and all it says is true
 - B. 1992-2012 (VCF0850): 1 The Bible is a book written by men and is not the Word of God 2 The Bible is the word of God but not everything in it should be taken literally, word for word 3 The Bible is the actual Word of God and is to be taken literally, word for word

Note that the first two categories of variable VCF0845 have been combined in order to render the variable comparable to VCF0850

- 8.) *Church attendance (VCF0130a): 0 Never 1 A few times a year 2 Once or twice a month 3 Almost every week 4 Every week
- 9.) Race (VCF0105a): This variable is coded into four dummy variables representing whites, blacks, Hispanics and mixed race and other non-white individuals
- 10.) Gender (V0104): 0 Male 1 Female
- 11.) Age (V0101)
- 12.) Education (V0110): What is the highest grade of school or year of college you have completed? 1 Less than high school 2 High school diploma 3 Some college 4 College or advanced degree
- 13.) Income (VCF0114): The exact question wording for the income question varies slightly across years
- 14.) Union membership (VCF0127): Do you or anyone else in this household belong to a labor union? 1 No 2 Yes

Note: This variable is recoded so that the higher value reflects belonging to a union

- 15.) Married (VCF0147): 0 Non-married 1 Married Note: This question varies across years, but we collapse the categories into married and non-married
- 16.) South (VCF0112): 0 Non-south 1 South
- 17.) Liberals group feeling thermometer (VCF0211): 0 Cold 97 Warm
- 18.) Conservatives group feeling thermometer (VCF0212): 0 Cold 97 Warm
- 19.) Democratic Party feeling thermometer (VCF0218): 0 Cold 97 Warm
- 20.) Republication Party feeling thermometer (VCF0224): 0 Cold 97 Warm
- 21.) Democratic Party presidential candidate feeling thermometer (VCF0424):
 0 Cold 97 Warm
- 22.) Republican Party presidential candidate feeling thermometer (VCF0426): 0 - Cold 97 - Warm

Note: Measures 17-22 are used only in the analysis presented in Figure SI7 of this supplemental online appendix.

II. Over Time Reliability of the Value Orientations Scale

Figure SI1 below depicts the Cronbach's Alpha reliability estimate separately for each year included in the analysis. The figure shows that the reliability of the ten-item value orientations scale generally has increased over time. Although this question is not central to the claims that we advance in the paper, the fact that our measurement of value orientations becomes increasingly reliable over time is substantively sensible and reassuring. That is, values generally become more salient due to polarizing elite cues.



Figure SI1: Cronbach's Alpha Reliability Estimate, 1988-2012 ANES

III. Item Analysis of the Values Items

The ten panels in Figure SI2 below depict the item response functions (IRFs) associated with each of the ten value items that comprise the value orientations scale. When taking

the mean of a set of items, we assume—according to the summated rating model—that the items are "parallel"—that they largely measure a single construct in approximately the same way, and that the function relating the probability of a positive response to a given category of the item to the estimated latent trait (the scale scores) is monotonic. The IRF plots demonstrate exactly the monotonicity assumed by the model.









I. Standards



J. Family



IV. Examining the Potential Effect of "Don't Know" Responses to the Ideological Self-Identification Question on Our Model Estimates

In this section, we explore the possibility that increasing response rates to the ideological self-identification question contribute to the observed over time increase in the observed conditional correlations between partisanship and ideology that we report in the manuscript. Specifically, the ANES question used since 1972 to measure ideological self-identifications (variable VCF0803 in the ANES Cumulative File)—conceptualized as "symbolic ideology" in this study, following previous literature (e.g., Ellis and Stimson 2012)—allows individuals to respond "don't know" or "haven't thought about it much" if they are unable to place themselves somewhere on the seven-point scale ranging from "extremely liberal" to "extremely conservative."¹

The suspicion that the proportion of individuals responding "don't know" may have decreased over time is plausible given that an increasingly polarized environment might mean that citizens receive more elite ideological cues now than in the past and thus are more adept at recognizing and understanding the meaning of ideological labels (e.g., Carsey and Layman 2006; Levendusky 2010). This greater reception and comprehension of ideological signals might, in turn, reduce the proportion of non-identifiers. Interestingly, the proportion of survey respondents who answer the question "don't know" has decreased only slightly during the time period we examine, from a high of 30% in 1988 to 28.5% in 2012. The lowest percentage of "don't know" responses is just over 22% in 2004, thus demonstrating that the decrease is non-linear. Moreover, although the actual percentage of "don't know" responses is just shy of 10% in 2012, we argue that

¹ We refer to these two response options as "don't know" hereafter in the interest of brevity. Note that the two options are combined into a single response category in the ANES Cumulative File.

this number is artificially deflated because the response option was in fact not offered to the Internet respondents, who number 3,860 in our sample. Figure SI3 below plots the proportion of "don't know" responses for each year included in our analysis, where the proportion for 2012 is limited to the 2,054 respondents who were interviewed face-toface.



Figure SI3: Proportion of "Don't Know" Responses to the Ideological Self-Identification Question, 1988-2012 ANES

Still, although the small over time fluctuation in the proportion of "don't know" responses partially reassures us that our results are not due to individuals' increasing likelihood of ideologically self-identifying, we tested this proposition further using a Heckman selection model.² Specifically, the outcome regression equation is the same regression as that specified in the manuscript, the results of the latter of which are presented in manuscript Table 1. The selection equation dependent variable is a dummy variable coded 0 if the respondent answers "don't know" or "haven't thought about it much" and 1 if the respondent places himself or herself on the ideological scale. Nearly all of the same demographic variables that are featured in the regression equation, as well as the time variable, are included as covariates in the selection equation. The results of the selection model, presented below in Table SI1, show that sample selection is not biasing our empirical results because the errors from the selection and outcome stage equations, given by ρ , are uncorrelated ($\rho = -.021, \chi^2 = .14, p = .706$). The nonsignificant Chi-square test thus shows that the results produced by the selection model essentially equal those generated by the OLS regression model presented in manuscript Table 1.

² Heckman 1979.

The Over Time Influence of Ideology and Core Value Orientations on Partisanship					
Variable	Coefficient	Standard error	P-value		
Outcome equation : Predicting partisanship					
Ideology	2.530	.348	.000		
Value orientations	2.403	.431	.000		
Time	.063	.040	.111		
Ideology*Value orientations	.641	.692	.354		
Ideology*Time	034	.074	.643		
Value orientations*Time	232	.093	.012		
Ideology*Value orientations*Time	.317	.147	.031		
Retrospective economic evaluations	.891	.068	.000		
Retrospectives*Democratic president	-1.840	.088	.000		
Democratic president	.504	.051	.000		
Religiosity	007	.053	.888		
Female	121	.031	.000		
Black	-1.234	.055	.000		
Hispanic	566	.049	.000		
Other race (non-white)	365	.076	.000		
Age	010	.001	.000		
Education	.160	.024	.000		
Income	.109	.016	.000		
Married	.026	.034	.450		
Union member	392	.041	.000		
South	025	.032	.441		
Constant	020	.221	.927		
Selection equation: Predicting the likelihood	d of ideologica	ally self-identifying	5		
Time	.105	.006	.000		
Black	581	.035	.000		
Hispanic	312	.038	.000		
Other race (non-white)	180	.070	.010		
Female	240	.027	.000		
Age	.004	.001	.000		
Education	.457	.018	.000		
Income	.121	.014	.000		
Married	026	.029	.364		
Constant	981	.070	.000		
<u>ρ</u> 021 .706					
N = 10,829 (uncensored)/2,953 (censored) Log likelihood = -26,186.05					

 Table SI1: Heckman Selection Model Predicting Partisanship

 Time Influence of Ideology and Core Value Orientations on Partisanship

V. Regression Robustness Checks

In this section, we demonstrate in several ways the robustness of our key substantive result regarding the conditional impact of values on the relationship between ideology and partisanship. First, we replicate the regression model presented in manuscript Table 1 with a model that omits respondents who completed the 2012 ANES Time Series Study via the Internet. We conduct this analysis because the 2012 ANES complemented the traditional face-to-face survey with an Internet survey for the first time, and the possibility exists that this new survey mode affects empirical estimates generated from analyses of these data. We note that 2,054 respondents included in our data completed the face-to-face survey in 2012, and 3,860 respondents completed the Internet survey. Table SI2 below features the results of this model, which reassuringly are substantively identical to those presented in manuscript Table 1.

The Over Time Influence of Ideology and Core Value Orientations on Partisansh				
Variable	Coefficient	Standard error	P-value	
Ideology	2.695	.372	.000	
Value orientations	2.467	463	.000	
Time	.081	.050	.107	
Ideology*Value orientations	.375	.743	.614	
Ideology*Time	117	.096	.219	
Value orientations*Time	232	.122	.057	
Ideology*Value orientations*Time	.450	.198	.023	
Retrospective economic evaluations	.893	.071	.000	
Retrospectives*Democratic president	-1.76	.111	.000	
Democratic president	.476	.067	.000	
Religiosity	008	.068	.905	
Female	120	.039	.002	
Black	-1.267	.065	.000	
Hispanic	553	.062	.000	
Other race (non-white)	306	.010	.002	
Age	011	.001	.000	
Education	.167	.024	.000	
Income	.125	.021	.000	
Married	032	.043	.454	
Union member	486	.052	.000	
South	051	.041	.210	
Constant	082	.226	.716	
$N = 7.394 R^2 = 429$				

Table SI2: Predicting Partisanship, 1988-2012 ANES (omitting the 2012 ANES Internet Sample)

Next, we address a potential concern that combining egalitarianism and moral traditionalism improperly treats as indicators of a single underlying dimension domain specific core political values that exert independent, and varying, effects on our relationship of interest. Although we wish to reiterate that the reliability of the combined value orientations scale, as well as the item reliability analysis of the ten individual items comprising it, testifies to the unidimensionality of the scale, we believe that investigating the moderating role of egalitarianism and moral traditionalism separately on the association between ideology and partisanship is prudent.

In order to conduct this analysis, we first created individual values scales for egalitarianism and moral traditionalism. Specifically, we created a reliable summated rating scale ranging from most egalitarian to most anti-egalitarian using the six indicators of this value ($\alpha = .729$), and recoded it to range from 0 to 1. We then regressed partisanship on the identical covariates included in the Table 1, except we replaced the combined value orientations variable in the three-way interaction with the new egalitarianism scale. Next, we created a similarly reliable summated rating scale ranging from culturally progressive to morally traditional values using the four indicators of this value ($\alpha = .647$), and recoded it to range from 0 to 1. Finally, we conducted the same regression described above, but with the moral traditionalism scale substituted for the egalitarianism scale. Figures SI5 and SI6 below feature the results of these two models. The graphs reveal the identical patterns that we report in manuscript Figures 3 and 4, further evincing the appropriateness of our value orientations scale.









An additional robustness check attempts to correct for potential bias in our reported model estimates arising from measurement error in our observed indicators of ideology, core values and partisanship. We endeavor to educe this potential measurement error by specifying confirmatory factor analysis (CFA) models to estimate latent ideology, partisanship and core values, respectively. We then re-estimate our regression model presented in manuscript Table 1 using these latent quantities of our key variables.

We measure latent symbolic ideology using the traditional seven-point symbolic ideology scale and the respondent's feeling thermometer ratings of liberals and conservatives, respectively. We measure latent partisanship using the traditional seven-point party identification scale and the respondent's feeling thermometer ratings of the Democratic and Republican Parties and Democratic and Republican presidential candidates, respectively, in each year. Finally, we measure latent core value orientations using the ten values items—six egalitarianism indicators and four moral traditionalism items—included in our value orientations scale. The results of this model, presented below in Figure SI7, are again reassuringly substantively identical to those presented in manuscript Table 1 and Figures 2, 3 and 4.



Figure SI6: Estimated Marginal Effect of Latent Ideology on Latent Partisanship Conditioned on Latent Core Values, 1988-2012 ANES

The final analysis in this section of the online appendix addresses an obvious and extremely empirically and theoretically relevant concern that the relationship between symbolic ideology and party identification is endogenous (e.g., Miller 1999). The analysis presented here extends that shown above in the partial correlation plot (Figure SI4) by explicitly modeling the potential over time influence of partisanship on symbolic ideological attachments conditioned on core values. Specifically, we regress the symbolic ideology variable on partisanship and all of the covariates included in manuscript Table 1 except union membership, which we conceptualize as an explicitly partisan predictor. Crucially, we also include a three-way interaction involving party identification, value orientations and time. The results of this model are shown below in Table SI2. The most notable result in the table is that the coefficient for the aforementioned three-way interaction term is insignificant, indicating that any effect of partisanship on ideology is not conditioned on values. Moreover, neither of the coefficient estimates for the two key two-way interactions between partisanship and time and between value orientations and time, respectively—are statistically significant. These findings support our model specification presented in manuscript Table 1, as well as recent evidence documenting that symbolic ideological attachments are more likely to have caused party identification than the reverse.³ We provide further evidence of the appropriateness of our chose model specification in the next section using 1994-96 ANES Panel Study data.

Table SI2: Predicting Ideological Self-Identifications, 1988-2012 ANES

The Over Time Influence of Partisanship and Core Value Orientations on Ideology						
Variable	Coefficient	Standard error	P-value			
Partisanship	1.677	.191	.000			
Value orientations	2.890	.000	.000			
Time	008	.021	.706			
Partisanship*Value orientations	826	.367	.024			
Partisanship*Time	.075	.042	.072			
Value orientations*Time	051	.049	.296			
Partisanship*Value orientations*Time	.019	.079	.812			
Retrospective economic evaluations	.115	.048	.018			
Retrospectives*Democratic president	308	.063	.000			
Democratic president	.101	.036	.005			
Religiosity	.612	.039	.000			
Female	119	.022	.000			
Black	.284	.037	.000			
Hispanic	.042	.034	.217			
Other race (non-white)	013	.053	.808			
Age	.004	.001	.000			
Education	029	.013	.029			
Income	013	.011	.253			
Married	.025	.034	.457			
South	.014	.022	.533			
Constant	.853	.117	.000			
$N = 10,844 R^2 = .435$						

³ Camobreco 2016; see also Abramowitz and Saunders 1998

VI. Causal analysis via a cross-lagged panel model

Presented below is a very simple model – depicted via a path diagram – that could be used to test the causal relationship implied by the regression model estimated in the body of the manuscript. This is the simplest form of a cross-lagged panel model, where two variables at time t - 1 predict the second measurement of each variable at time t. While we can safely assume that the estimates for the stability paths (depicted via black arrows relating a given variable at t - 1 to the same variable at t) will be statistically significant, we are primarily concerned with the structural relationships depicted by the red and blue paths¹.





If the estimates associated with both structural paths are statistically significant, then we can be confident that a reciprocal relationship between party identification and liberalconservative ideology exists. If neither of the estimates associated with these paths is statistically significant, then we can be confident that the party identification and liberalconservative ideology are unrelated. Of course, theory, decades of related work and the analyses reported above rule out this possibility. Thus, the important question is which of the structural paths is statistically significant? Our theory posits that the estimate associated with the path from ideology at t - 1 to party identification at t (the red path) is statistically

¹The two ζ terms are simply disturbances associated with each of the two equations.

significant for those with conservative value orientations, but not for those with liberal value orientations.

To test the model depicted below we use data from the 1994 and 1996 ANES panel study. We estimate the model implied by the path diagram for those below the mean of the value orientations scale (liberal value orientations) and for those above the mean (conservative value orientations). By dichotomizing the value orientations scale in this way we both maximize the size of the sample on which the model is estimated (therefore increasing our confidence in the obtained estimates), and provide an even more conservative test than would have the (more theoretically appropriate) dichotomizing strategy used in the body of the manuscript. The estimates are depicted in the table below.

Since we are most interested in examining the relationship between liberal-conservative ideology at t-1 and party identification at t, we can look to the estimates in lines 3 and 4 of the main results. Since liberal value orientations were coded **as** 0 and conservative value orientations as 1, our theory would best be supported by statistically significant estimates in the fourth line and statistically insignificant estimates in the third line. This is exactly what we observe. The results show a statistically significant effect of ideology on party identification for those with conservative value orientations, but not those with liberal value orientations. All other paths are statistically significant for both value orientation groups.

Although technically accurate, the model presented above is somewhat rudimentary (i.e., splitting the sample instead of using interaction terms). Thus, we estimated a more complicated model with three endogenous variables: ideology, party identification and value orientations (all in 1996). Much like the model above, the measure of each of these three variables in 1994 predicts each of the variables in 1996. Unlike the previous model, each 1996 equation also includes a two-way interaction term of the two exogenous 1994 variables. For example, the 1996 party identification equation includes the 1994 measures of party identification, ideology and value orientations, plus the interaction between ideology and value

Structural equation model	Number of obs	=	928
Grouping variable = conval94	Number of groups	=	2
Estimation method = ml			
Log likelihood = -5955.3545			

			OIM				
		Coef.	Std. Err.	z	P> z	[95% Conf.	Interval]
Structural	-+-						
pid96 <-	I						
pid94	Ι						
0	Ι	.7615114	.0328325	23.19	0.000	.6971609	.8258619
1	Ι	.8329341	.0270384	30.81	0.000	.7799399	.8859284
ideo94	Ι						
0	Ι	.0278496	.0460924	0.60	0.546	0624899	.1181891
1	Ι	.1259336	.0465464	2.71	0.007	.0347044	.2171629
_cons	Ι						
0	Ι	4153038	.0602225	-6.90	0.000	5333378	2972697
1	Ι	2046593	.0635836	-3.22	0.001	3292809	0800378
	-+-						
pid94	Ι						
0	Ι	. 1023025	.0283915	3.60	0.000	.0466562	. 1579487
1	Ι	. 1299181	.0218073	5.96	0.000	.0871766	. 1726596
ideo94	I						
0	Ι	.6063618	.0398578	15.21	0.000	.528242	.6844817
1	Ι	.549732	.0375411	14.64	0.000	. 4761528	.6233112
_cons	Ι						
0	Ι	1274385	.0520766	-2.45	0.014	2295068	0253702
1	1	. 1926995	.0512821	3.76	0.000	.0921884	.2932106
	- T						

orientations (since party identification is the dependent variable). The results of this

exercise are identical to those suggested by the simpler model: The interaction between the value orientations scale and ideology in 1994 in the equation predicting party identification in 1996 is statistically significant. Furthermore, no other combination of interactions/dependent variables was statistically significant. Lastly, we note that this model fits the data quite well with a statistically insignificant likelihood ratio χ^2 test (suggesting that the model-implied and observed covariance matrices are not significantly different) and a root mean-square error of approximation of 0.02 (significantly below the typical 0.10 cut-off).