Online Supplemental Materials:
Who is Ideological?

Michael Barber
Brigham Young University
barber@byu.edu

Jeremy C. Pope
Brigham Young University
jpope@byu.edu

This appendix to "Who is Constrained?" includes a number of results noted in the paper, robustness checks and additional models noted in the paper, and additional results not directly mentioned in the paper. Below is a table of contents for this document.

1. We describe the specific question wording used in the CCES and Pew Surveys. These questions are used in the main paper to develop ideal points of respondents.

2. We show the individual issue correlations in the CCES and Pew surveys and the Senate roll call votes.

3. We show the results of models that predict respondents opinions of issues using their self-reported ideology on a 7-point Likert scale as the predictor rather than an estimated ideal point.

4. We show the results of models that predict respondents opinions of issues using their estimated ideal point as the predictor. In this case we show the logistic model coefficients rather than the area under the ROC curve (which we use in the main text).

5. We show the results of models that predict respondents opinions of issues using their estimated ideal point as the predictor. In this case we show the percentage of observations correctly classified rather than the area under the ROC curve (which we use in the main text).

6. We replicate the results of the predictive models again, but this time we show the coefficient on the modeled ideal point after controlling for the respondent's partisanship. Even after including this important predictor, modeled ideology is an excellent predictor of the respondents' issue positions on most votes. This is true in both the CCES and Pew survey data.

7. We replicate the results of models that show the predictive power of ideology subset by party and partisan strength using the Pew survey data.

8. We show the distribution of political knowledge responses in the CCES survey.

9. We show the joint distribution of political knowledge and activity among respondents to the CCES survey.

10. We show the regression results that underlie Figure 9 in the main text. We also show additional alternative specifications.

11. We show the results of across-time issue correlations in the CCES 2012 and 2014 panel study and compare those correlations to across-issue correlations in the 2012 survey. The correlations across time are larger than the across-issue correlations.

12. We show that political participation, partisanship, political knowledge, and political interest are distinct concepts that load separately onto different dimensions in a factor analysis model.

13. We show that even though ideology is a feature of the public, particularly the knowledgeable public, it's importance should not be overstated. Even the most knowledgeable segments of the public fall far short of the levels of constraint found among elites.

1 Specific Question Wording

1.1 CCES Survey

Congress considered many important bills over the past four years. For each of the following tell us whether you support or oppose the legislation in principle.

- Ryan Budget Bill

- Simpson-Bowles Budget Plan

- Middle Class Tax Cut Act

- Tax Hike Prevention Act

- Birth Control Exemption

- U.S. - Korea Free Trade Agreement

- Repeal Affordable Care Act

- Keystone Pipeline

- Affordable Care Act of 2010

- End Don't Ask Don't Tell

1.2 Pew Survey

I'm going to read you some pairs of statements that will help us understand how you feel about a number of things. As I read each pair, tell me whether the FIRST statement or the SECOND statement comes closer to your own views — even if neither is exactly right.

- Government is almost always wasteful and inefficient. Government often does a better job than people give it credit for.

- Government regulation of business is necessary to protect the public interest. Government regulation of business usually does more harm than good.

- Poor people today have it easy because they can get government benefits without doing anything in return. Poor people have hard lives because government benefits don't go far enough to help them live decently.

- The government should do more to help needy Americans, even if it means going deeper into debt. The government today can't afford to do much more to help the needy.

- Racial discrimination is the main reason why many black people can't get ahead these days. Blacks who can't get ahead in this country are mostly responsible for their own condition.

- Immigrants today strengthen our country because of their hard work and talents. Immigrants today are a burden on our country because they take our jobs, housing and health care.

- Society is better off if people make marriage and having children a priority. Society is just as well off if people have priorities other than marriage and children.

- The best way to ensure peace is through military strength. Good diplomacy is the best way to ensure peace.

- U.S. efforts to solve problems around the world usually end up making things worse. Problems in the world would be even worse without U.S. involvement.

- Most people who want to get ahead can make it if they're willing to work hard. Hard work and determination are no guarantee of success for most people.

1.3   American National Election Study

The following is the list of questions used in creating the ANES scale analyzed in the paper. The 26 items were selected from the pre-election survey in 2012.

- Please look at page . . . of the booklet. Some people think the government should provide fewer services even in areas such as health and education in order to reduce spending. Suppose these people are at one end of a scale, at point 1. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Suppose these people are at the other end, at point 7. And, of course, some other people have opinions

somewhere in between, at points 2, 3, 4, 5 or 6. Where would you place yourself on this scale, or haven't you thought much about this?

- Please look at page . . . of the booklet. Some people believe that we should spend much less money for defense. Suppose these people are at one end of a scale, at point 1. Others feel that defense spending should be greatly increased. Suppose these people are at the other end, at point 7. And, of course, some other people have opinions somewhere in between, at points 2, 3, 4, 5 or 6. Where would you place yourself on this scale, or haven't you thought much about this?

- Please look at page . . . of the booklet. There is much concern about the rapid rise in medical and hospital costs. Some people feel there should be a government insurance plan which would cover all medical and hospital expenses for everyone. Suppose these people are at one end of a scale, at point 1. Others feel that all medical expenses should be paid by individuals through private insurance plans like Blue Cross or other company paid plans. Suppose these people are at the other end, at point 7. And, of course, some other people have opinions somewhere in between, at points 2, 3, 4, 5, or 6. Where would you place yourself on this scale, or havent you thought much about this?

- Do you think the federal government should make it more difficult for people to buy a gun than it is now, make it easier for people to buy a gun, or keep these rules about the same as they are now?

- Please look at page . . . of the booklet. Some people feel the government in Washington should see to it that every person has a job and a good standard of living. Suppose these people are at one end of a scale, at point 1. Others think the government should just let each person get ahead on their own. Suppose these people are at the other end, at point 7. And, of course, some other people have opinions somewhere in between, at points 2, 3, 4, 5, or 6. Where would you place yourself on this scale, or haven't you thought much about this?

- Which comes closest to your view about what government policy should be toward unau- thorized immigrants now living in the United States? You can just tell me the number of your choice. 1. Make all unauthorized immigrants felons and send them back to their home

6

country. 2. Have a guest worker program that allows unauthorized immigrants to remain in the United States in order to work, but only for a limited amount of time. 3. Allow unauthorized immigrants to remain in the United States and eventually qualify for U.S. citizenship, but only if they meet certain requirements like paying back taxes and fines, learning English, and passing background checks. 4. Allow unauthorized immigrants to remain in the United States and eventually qualify for U.S. citizenship, without penalties.

- There is a proposal to allow people who were illegally brought into the U.S. as children to become permanent U.S. residents under some circumstances. Specifically, citizens of other countries who illegally entered the U.S. before age 16, who have lived in the U.S. 5 years or longer, and who graduated high school would be allowed to stay in the U.S. as permanent residents if they attend college or serve in the military. From what you have heard, do you favor, oppose, or neither favor nor oppose this proposal? 1. Favor 2. Oppose 3. Neither favor or oppose.

- Some states have passed a law that will require state and local police to determine the immigration status of a person if they find that there is a reasonable suspicion he or she is an undocumented immigrant. Those found to be in the U.S. without permission will have broken state law. section. From what you have heard, do you favor, oppose, or neither favor nor oppose these immigration laws? 1. Favor 2. Oppose 3. Neither Favor or oppose.

- Please look at page ... of the booklet. Some people feel that the government in Washington should make every effort to improve the social and economic position of blacks. (Suppose these people are at one end of a scale, at point 1.) Others feel that the government should not make any special effort to help blacks because they should help themselves. (Suppose these people are at the other end, at point 7.) And, of course, some other people have opinions somewhere in between, at points 2, 3, 4, 5, or 6.

- Please look at page ... of the booklet. Some people think the federal government needs to regulate business to protect the environment. They think that efforts to protect the environment will also create jobs. Let us say this is point 1 on a 1-7 scale. Others think that the federal government should not regulate business to protect the environment. They think

this regulation will not do much to help the environment and will cost us jobs. Let us say this is point 7 on a 1-7 scale. And of course, some other people have opinions somewhere in between, at points 2,3,4,5, or 6.

- Do you favor, oppose, or neither favor nor oppose allowing universities to increase the number of black students studying at their schools by considering race along with other factors when choosing students? 1. Favor 2. Oppose 3. Neither favor nor oppose.

- Do you favor, oppose, or neither favor nor oppose allowing companies to increase the number of black workers by considering race along with other factors when choosing employees? 1. Favor 2. Oppose 3. Neither favor nor oppose.

- Next I am going to read you a list of federal programs. For each one, I would like you to tell me whether you would like to see spending increased or decreased:

  - Should federal spending on **Social Security** be increased, decreased, or kept the same?

  - Should federal spending on **public schools** be increased, decreased, or kept the same?

  - Should federal spending on **science and technology** be increased, decreased, or kept the same?

  - Should federal spending on **dealing with crime** be increased, decreased, or kept the same?

  - Should federal spending on **welfare programs** be increased, decreased, or kept the same?

  - Should federal spending on **child care** be increased, decreased, or kept the same?

  - Should federal spending on **aid to the poor** be increased, decreased, or kept the same?

  - Should federal spending on **protecting the environment** be increased, decreased, or kept the same?

- Do you favor, oppose, or neither favor nor oppose increased offshore drilling for oil and natural gas in U.S. waters?

- Do you think the United States should have more nuclear power plants, fewer nuclear power plants, or the same number it has now?

- Do you think gay or lesbian couples should be legally permitted to adopt children?

- Which comes closest to your view? 1. Gay and lesbian couples should be allowed to legally marry. 2. Gay and lesbian couples should be allowed to form civil unions but not legally marry. 3. There should be no legal recognition of a gay or lesbian couple's relationship.

- Please look at page ... of the booklet. There has been some discussion about abortion during recent years. Which one of the opinions on this page best agrees with your view? 1. By law, abortion should never be permitted. 2. The law should permit abortion only in case of rape, incest, or when the woman's life is in danger. 3. The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been clearly established. 4. By law, a woman should always be able to obtain an abortion as a matter of personal choice.

- Do you favor or oppose the death penalty for persons convicted of murder?
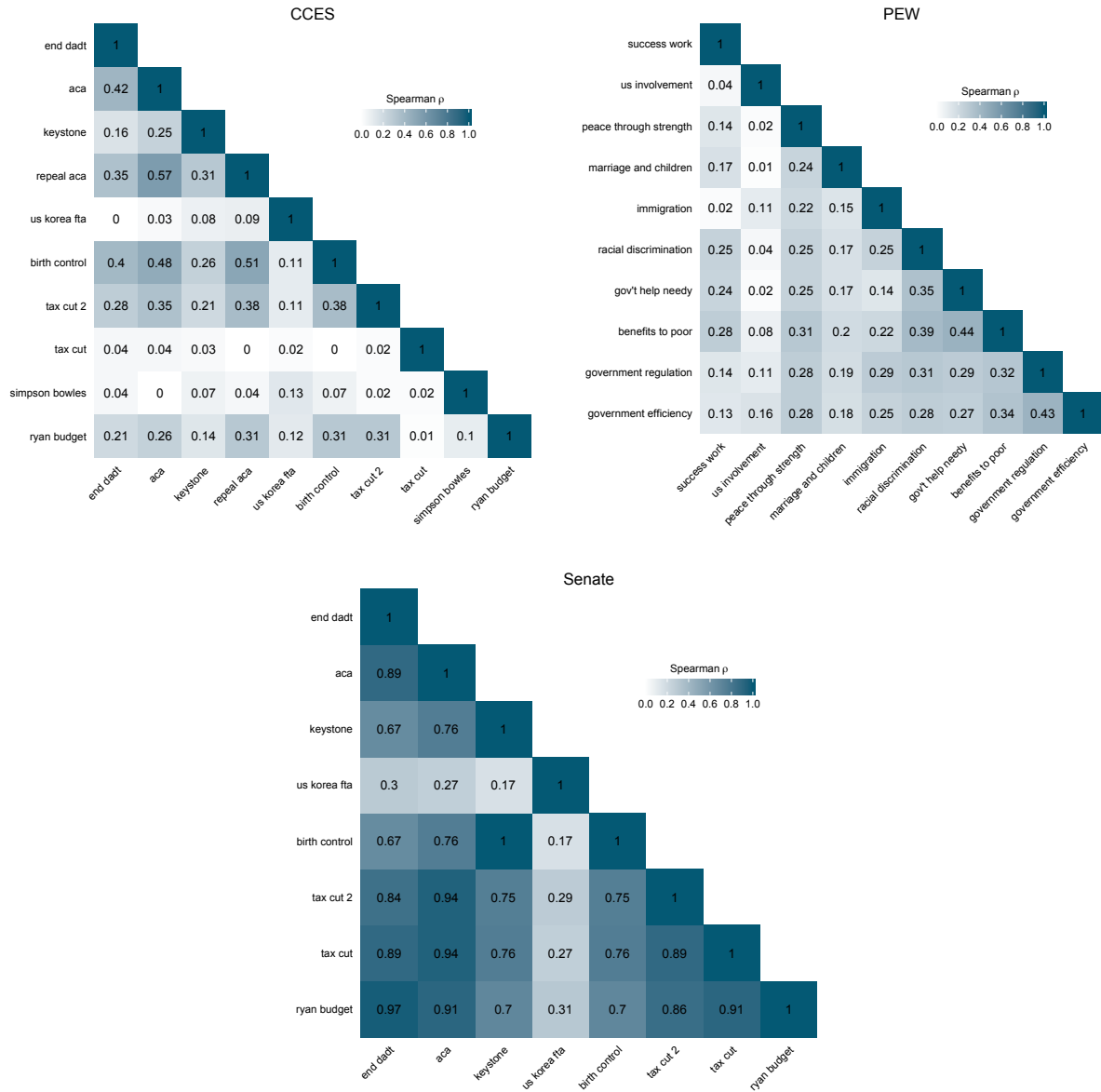
2 Individual Issue Correlations

Figure A1: **Correlation of Issue Positions** - The left panel shows the issue correlation matrix among CCES respondents. The right panel shows issue correlations for Senators. Individual issue positions among voters are on average not highly correlated. On the other hand, individual issue positions among Senators are highly correlated.

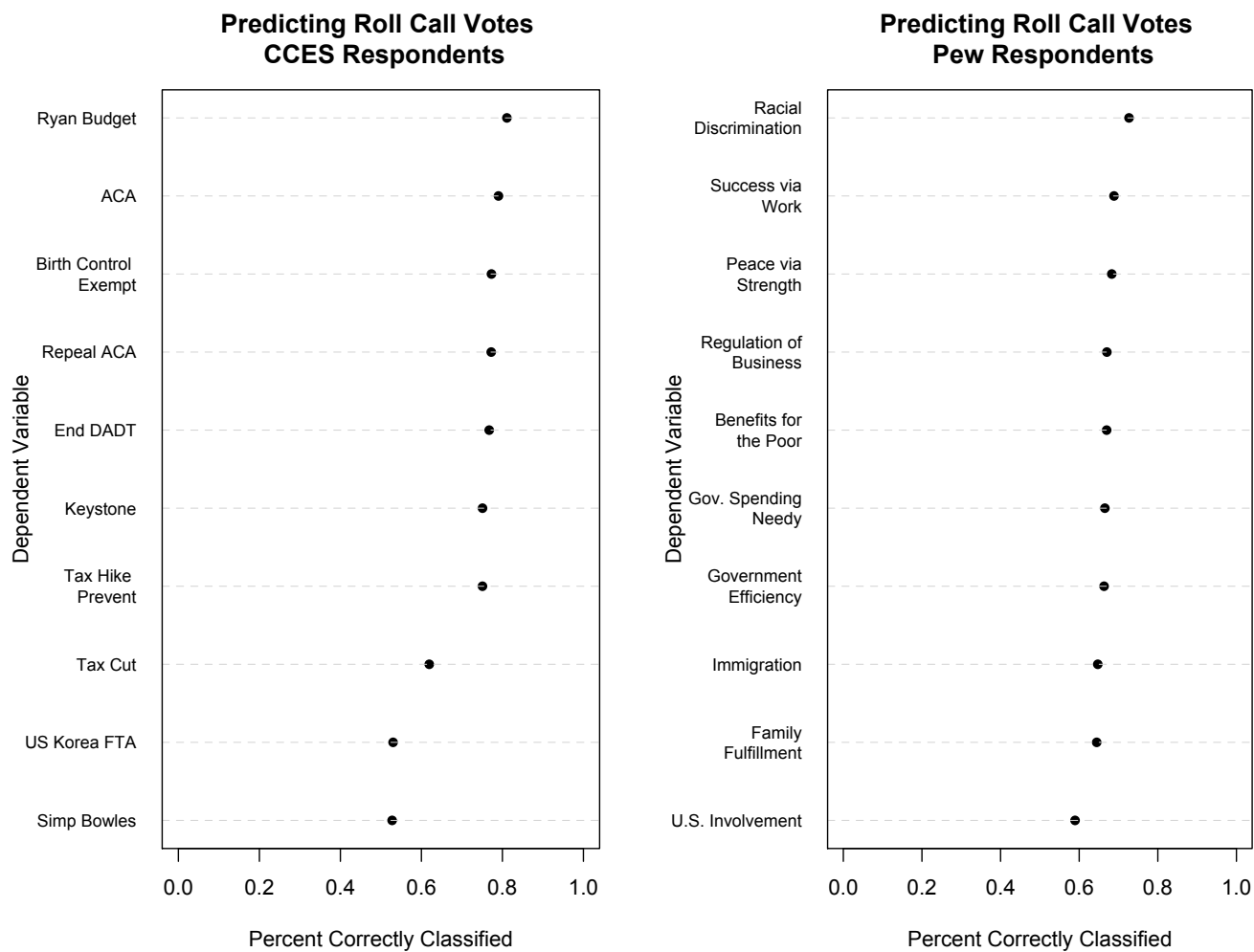# 3 Predicting Votes using Ideology: Self-Described Ideology as Predictor

Figure A2: **Predicting Votes using Ideology** - In this figure we show the percent of observations predicted correctly in a model in which the voters' self-described ideology is used to predict their vote on each issue listed on the y-axis.

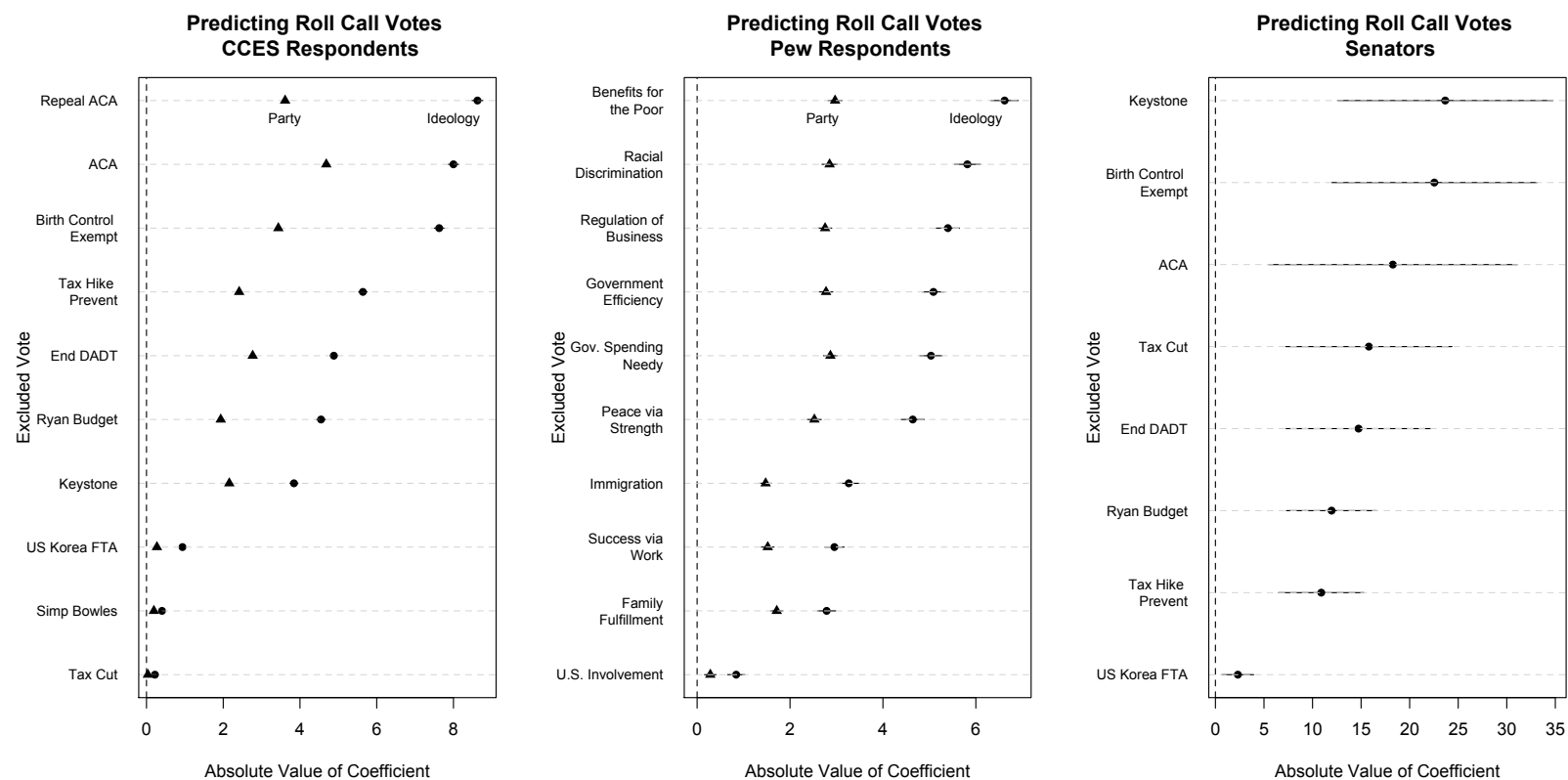# 4 Predicting Votes using Ideology: Coefficient of Model

Figure A3: **Predicting Votes using Ideology** - In this figure we show the absolute value of the coefficient in which the voters' ideal point is used to predict their vote on an excluded issue that was not used to create the ideal point. We see that in most cases, the coefficient on ideology is quite large and statistically significant.

5   Predicting Votes using Ideology: Percentage of Observations Correctly Classified
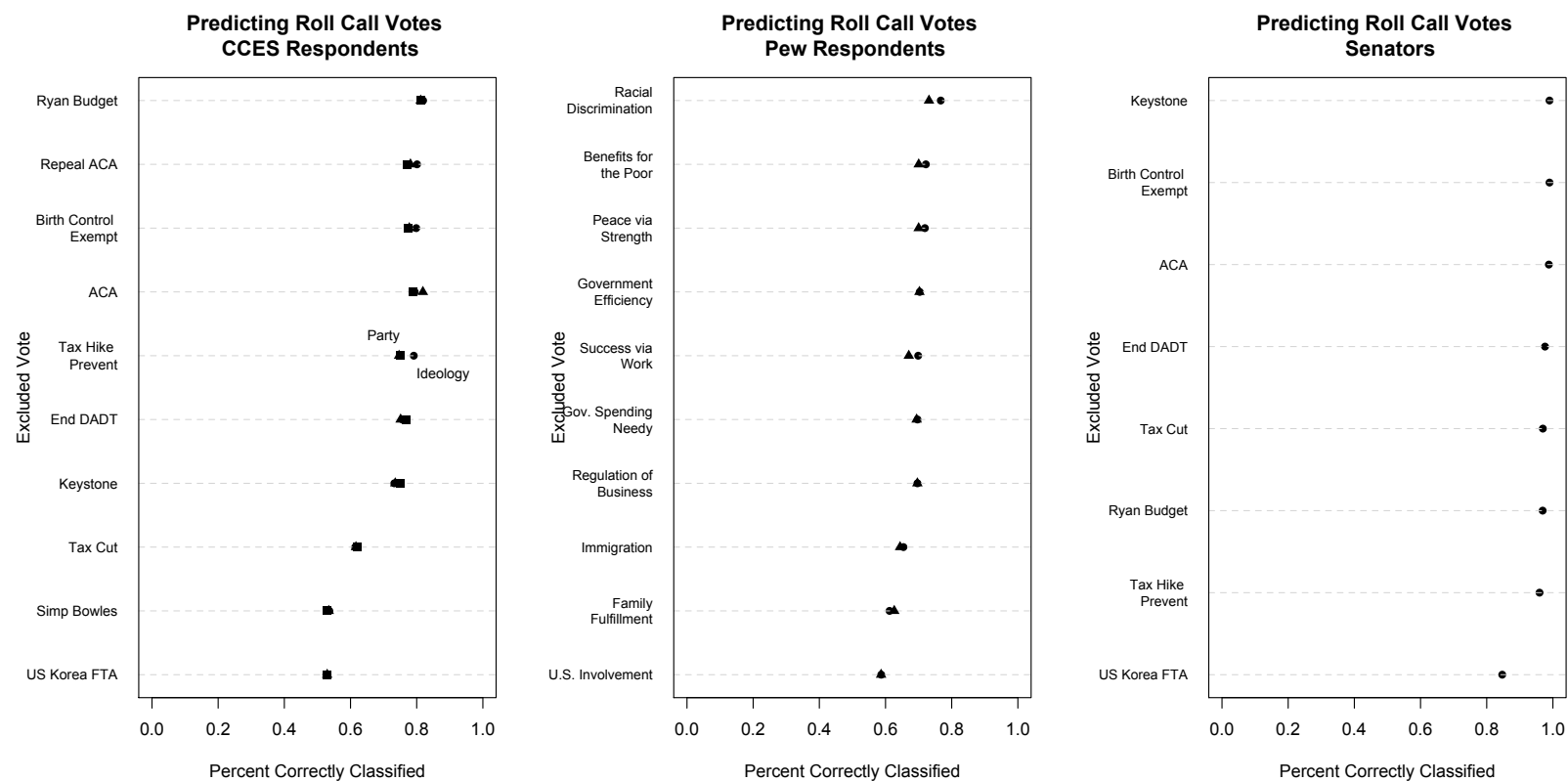

Figure A4: **Predicting Votes using Ideology** - In this figure we show the percentage of observations correctly predicted by a model in which the voters' ideal point is used to predict their vote on an excluded issue that was not used to create the ideal point.

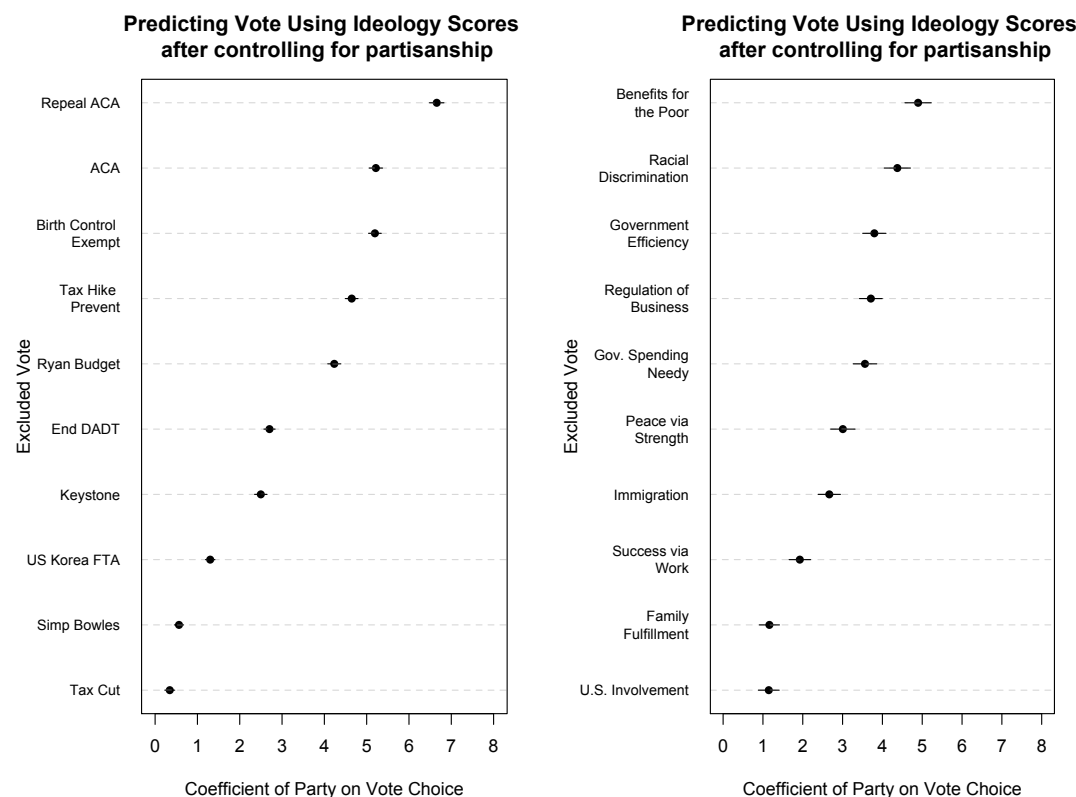# 6 Predicting Votes using Ideology: Ideology with Partisanship and Self-Classified Ideology as Controls

Figure A5: **Predicting Votes using Ideology** - In this figure we show the absolute value of the coefficient in which the voters' ideal point is used to predict their vote on an excluded issue that was not used to create the ideal point. We see that in most cases, the coefficient on ideology is quite large and statistically significant. In these models we include a control for the partisanship of the respondent as well as the respondent's self-identified ideology.

7 Models of Ideology and Vote Choice Broken Down by Party and Partisan Strength Using Pew Data
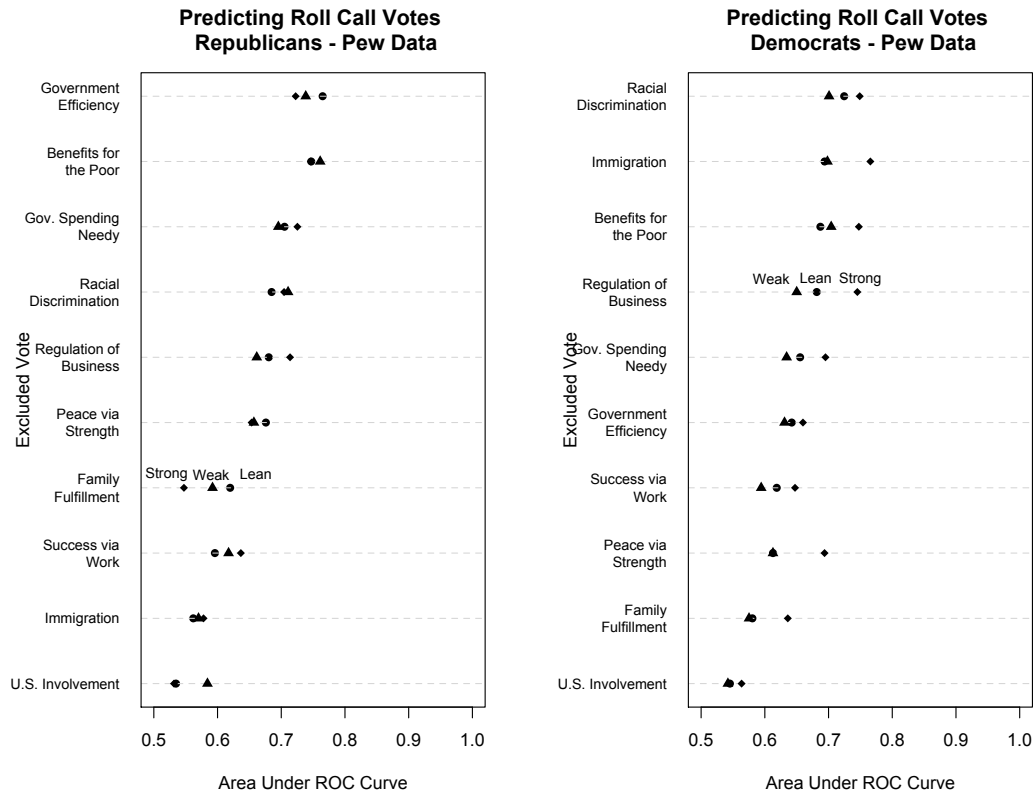

Figure A6: **Predicting Votes Using Ideology- By Party and Partisan Strength:** There are relatively few differences between levels of party strength in how ideology predicts ideological responses to questions.

8 Distribution of Political Knowledge Responses in CCES
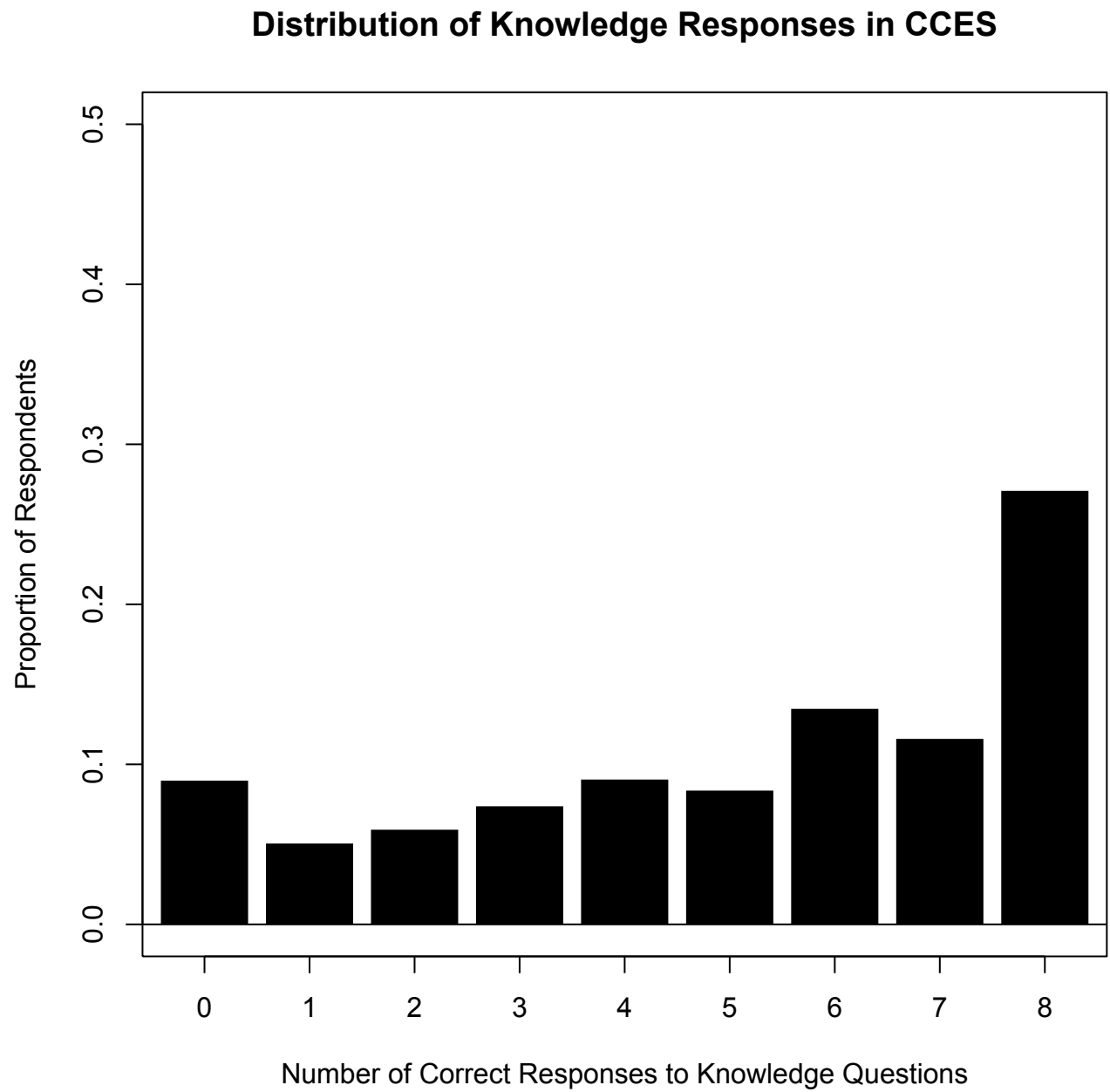
Distribution of Knowledge Responses in CCES

Figure A7: **Distribution of Political Knowledge Responses in CCES**

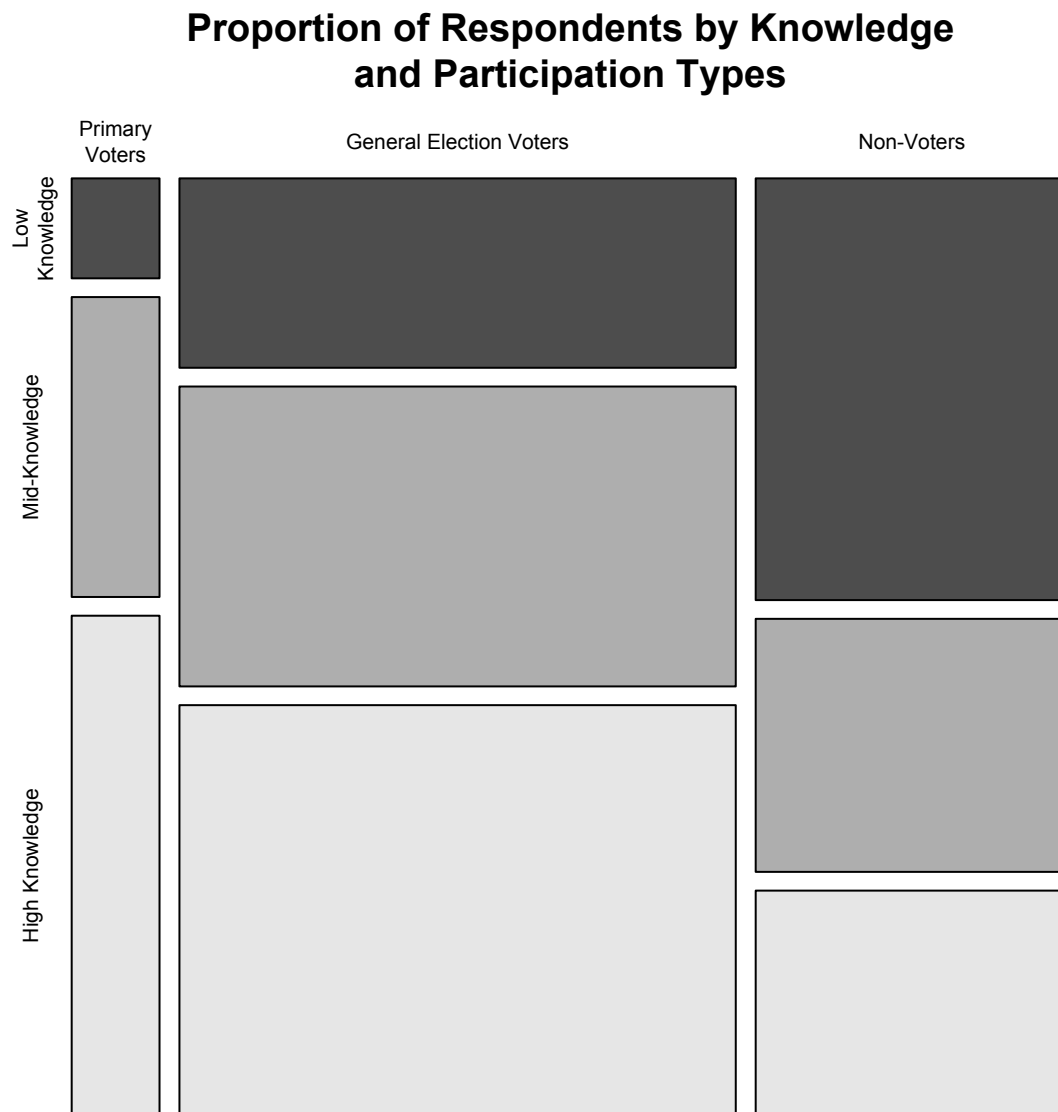# 9 Joint distribution of Political Knowledge and Political Activity

Proportion of Respondents by Knowledge and Participation Types

Figure A8: **Joint distribution of Political Knowledge and Political Acitvity**
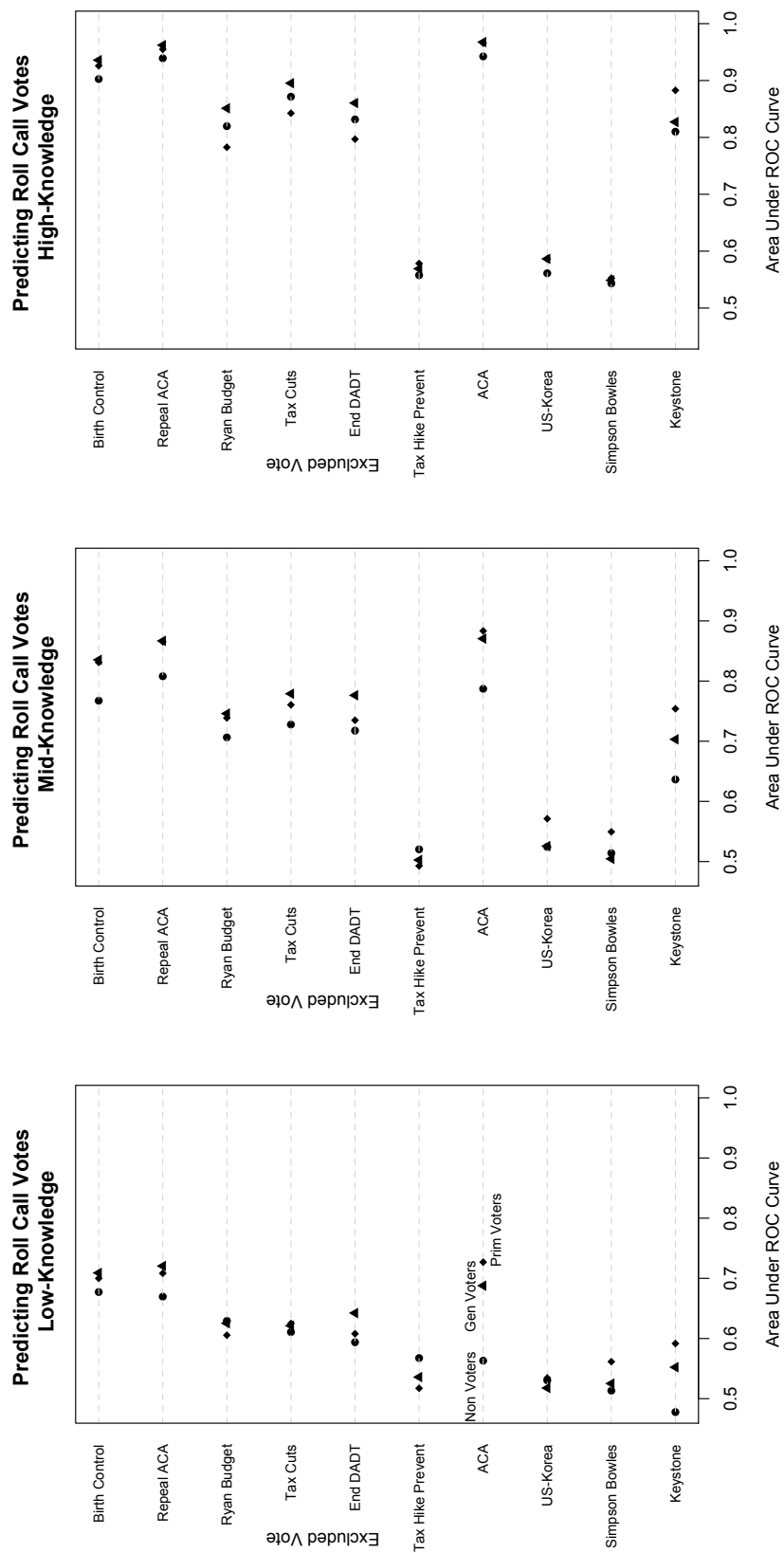
Figure A9: **Predicting Votes Using Ideology - By Political Knowledge and Vote Frequency** - The figure displays the area under the ROC curvey by knowledge and participation. The left panel is for low-knowledge respondents, with mid- and high-knowledge respondents in the subsequent two panels. Circles indicate non-voters, triangles general election-only voters and diamonds primary and general election voters. The pattern consistently shows little difference between the types of participators, but larger differences between the different levels of knowledge across the panels.

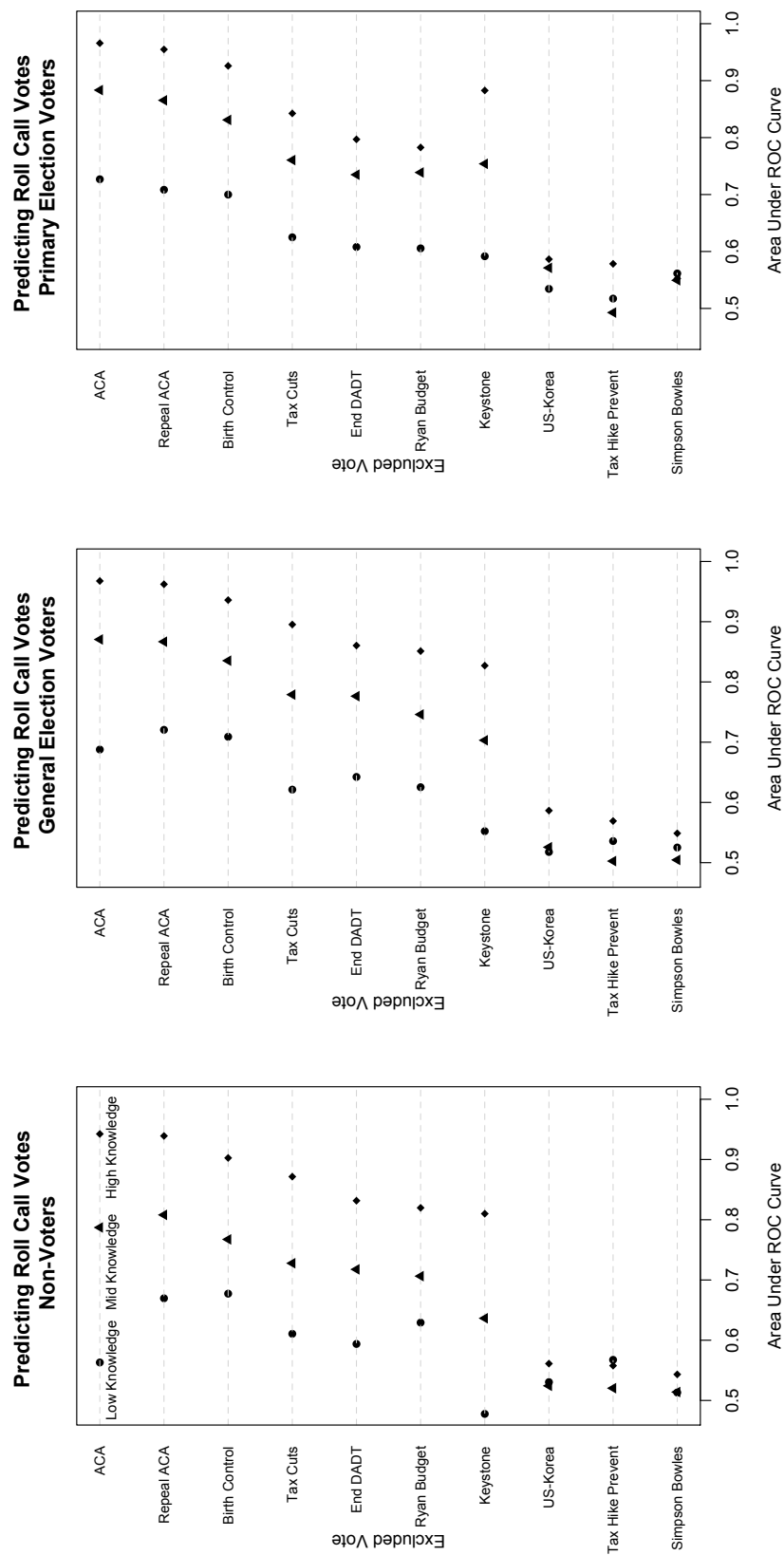Figure A10: **Predicting Votes Using Ideology – By Vote Frequency and Political Knowledge** - The figure displays the area under the ROC curvey by participation and knowledge. Reversing Figure A9 the left panel is for non-voters, with general election and primary election voters. Dots in this plot indicate level of knowledge and show substantial differences between levels of knowledge within each level of participation.

10 Predictors of Ideological Opinions among CCES and ANES Respondents

The results in Table A1 display standardized coefficients to allow direct comparisons across variables. These coefficients show that even after controlling for a variety of factors, political knowledge remains, by far, the strongest factor related to ideological issue positions. This is true among both Republican and Democratic respondents in both the CCES and ANES surveys. The relationship between political knowledge and ideological constraint is as strong (or nearly as strong) as a respondent's own self-placed ideology and their issue constraint. In other words, the predictive power of political knowledge is larger than the cumulative power of general election voting, primary election voting, donating to a campaign, placing a yard sign, working for the campaign in some way *and* attended a rally. Only a vanishingly small number of citizens do *all* of these things (1% of CCES respondents). In our view this comparison alone illustrates the power of political knowledge as a predictor of ideology. Nothing else approaches the strength of this relationship, and this is true in each of the models displayed in Table A1. [1]

---

[1] The method is also robust to changes in methodology. We ran the ANES scale using both an ideal point model where the items were dichotomized (presented here) and using a factor analysis. The results were essentially the same.

Observations Included:	Republicans				Democrats			
Dataset Used:	CCES		ANES		CCES		ANES	
Political Knowledge	0.31**	0.28**	0.19**	0.18**	-0.18**	-0.17**	-0.21**	-0.22**
	(0.01)	(0.01)	(0.04)	(0.05)	(0.01)	(0.01)	(0.04)	(0.05)
Self-Place Ideology	0.25**	0.24**	0.40**	0.39**	0.25**	0.23**	0.29**	0.29**
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.01)	(0.03)	(0.03)
General Election Voter	0.004	0.01	-0.01	-0.03	-0.07**	-0.07**	-0.06	-0.04
	(0.01)	(0.01)	(0.04)	(0.03)	(0.01)	(0.01)	(0.03)	(0.03)
Primary Election Voter	0.02*	0.03**	0.09*	0.08**	-0.02**	-0.02**	0.04	0.03
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.01)	(0.03)	(0.03)
Participation Index	0.10**	0.09**	0.04	0.06	-0.10**	-0.08**	-0.13**	-0.12**
	(0.01)	(0.006)	(0.03)	(0.03)	(0.01)	(0.01)	(0.03)	(0.03)
Political Interest	0.13**	0.14**	0.01	-0.01*	-0.08**	-0.07**	-0.09**	-0.09*
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.01)	(0.04)	(0.04)
Strong Partisan	-0.05**	-0.03**	0.02	0.02	0.05**	0.03*	-0.06	-0.04
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.01)	(0.04)	(0.04)
Weak Partisan	-0.12**	-0.12**	-0.10*	-0.09*	0.11**	0.11**	0.04	0.04
	(0.01)	(0.01)	(0.04)	(0.04)	(0.01)	(0.01)	(0.04)	(0.04)
Male		0.10**		0.05		0.04**		0.04
		(0.01)		(0.03)		(0.01)		(0.03)
White		-0.02**		0.08		-0.06**		-0.01
		(0.01)		(0.05)		(0.01)		(0.07)
Black		-0.03**		-0.11**		0.01		-0.14 *
		(0.01)		(0.04)		(0.01)		(0.06)
Hispanic		-0.03**		-0.09		0.003		-0.11
		(0.01)		(0.05)		(0.01)		(0.06)
Education		0.05**		-0.06		-0.08**		-0.10*
		(0.01)		(0.04)		(0.01)		(0.04)
Age		-0.08**		0.04		-0.003		0.04
		(0.01)		(0.04)		(0.01)		(0.03)
N	17,517	17,517	646	646	19,417	19,417	782	782

** p<.01, * p<.05

Table A1: **Predictors of Ideological Opinions among CCES and ANES Respondents** - Standardized OLS regression coefficients shown above standard errors. In each models the dependent variable is the estimated ideal point derived from the 10 issue questions asked in the CCES survey. Larger values indicate more consistently conservative opinions.

11 Across-Time Correlations in CCES Panel Dataset

Survey Question	Across-Time Correlation Low Knowledge Respondents	Average Across-Issue Correlation High Knowledge Respondents
Ryan Budget Agreement	0.39	0.30
Simpson-Bowles Budget	0.39	0.06
Middle Class Tax Cut Act	0.24	0.07
Tax Hike Prevention Act	0.36	0.36
Birth Control Exemption	0.58	0.42
U.S.-Korea Free Trade Agreement	0.34	0.10

Table A2: The first column shows correlations between 2012 and 2014 survey responses among below average knowledge respondents using the CCES Panel. The second columns shows the average correlation between this survey question and other issue questions asked in the 2012 CCES survey among above average knowledge respondents. We see that across-time correlations within issues are much higher than across-issue correlations, even when comparing low knowledge respondents to high knowledge respondents.

12 Factor Analysis of Participation, Participation, Knowledge, and Interest

Figure A11 displays a scree plot of the eigenvalues for a matrix of participation, participation, knowledge, and political interest. The suggested five factor solution is fit in Table A3 and shows clear separation between the concepts of political interest, political participation, primary election voting and partisanship. Political knowledge and educational attainment predictably load onto the same factor. In our view this justifies treating these as separate covariates, not subsumed under a single heading of engagement or sophistication.
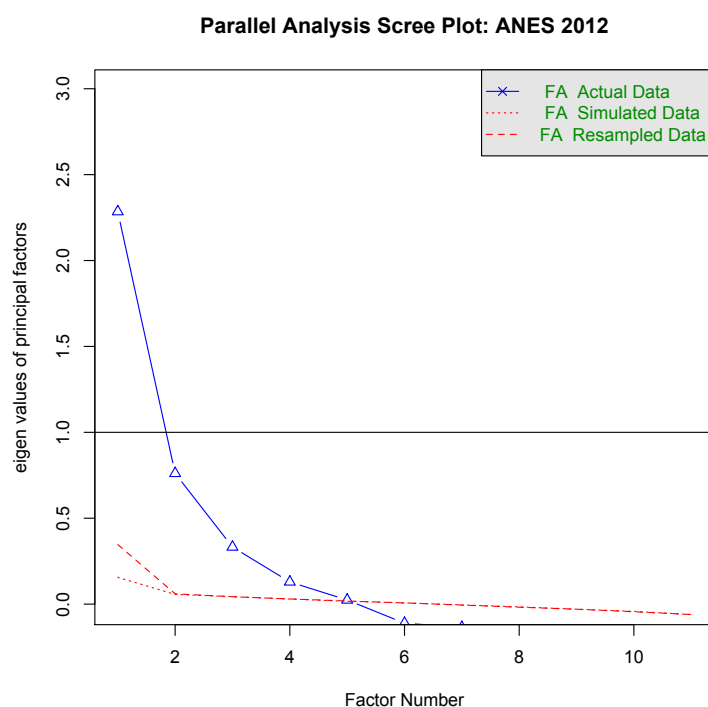

Figure A11: **Scree Plot:** Employing partisanship, education, participation indicators, political knowledge and political interest in a model suggests a five factor solution. The red line indicates a simulated level of explanatory power for simulated, random data.

Variable	Political Interest	Participation	Political Knowledge & Education	Primary Election Voting	Partisanship
Partisanship	0.04	0.10	0.22	0.09	**0.52**
Education	-0.13	-0.01	**0.62**	-0.06	0.01
Donating to a campaign	-0.01	**0.37**	0.21	-0.01	-0.11
Putting up a lawn sign	0.09	**0.36**	-0.09	0.04	-0.18
Working for a campaign	-0.05	**0.69**	-0.02	-0.02	0.01
Attending a campaign rally	-0.02	**0.77**	-0.04	0.01	0.10
Voting in a general election	0.10	-0.14	0.29	0.16	-0.21
Voting in a primary election	-0.04	0.01	-0.05	**1.05**	0.06
Political knowledge	-0.03	-0.02	**0.83**	-0.04	0.19
Interest in Politics	**0.61**	0.04	0.17	0.01	0.08
Interest in Following Campaigns	**1.02**	-0.04	-0.08	-0.04	0.00

Table A3: **Factor Loadings for a Model of Political Correlates** - Loadings for a five-factor, oblique solution to a factor analysis model of partisanship, education, participation indicators, political knowledge and political interest suggest five separate factors. Correlations above 0.3 are bolded to indicate the factor content. This model captures 51% of the cumulative variance

13 The Limitations of Ideology in the Mass Public

While our previous analysis shows that political knowledge is closely related to levels of ideological opinion within the public, a word of caution is in order regarding the levels of ideological consistency observed even among the most knowledgeable segment of the public. Some scholars suggest that ideology predicts behavior very well, so well, in fact, that it suggests that the public's preferences can be described with a single dimension where citizens are polarized into two camps along that dimension (Abramowitz, 2013; Bishop, 2009; Jacobson, 2012; Campbell and Cannon, 2006).[2] These scholars subscribe to a kind of ideological "maximalism" (Iyengar, Sood and Lelkes, 2012) where everything important about politics is contained in the ideological differences between the mass parties. In the extreme, these deep differences in society cause government dysfunction. For instance, Abramowitz (2013) writes that "the American public, and especially the politically engaged segment of the public, is deeply divided over the same issues that deeply divide political elites today" (p. 12). The quotation implies a single dimension that works very similarly for both the mass public and the elected leaders, a dimension that explains most of political debate.

We emphasize that even the most ideological members of the public (those with high levels of political knowledge) fail to achieve the same degree of issue constraint as is observed among elected officials. Figure A12 shows the proportion of variance explained by latent dimensions that are estimated in a principal component model for low, mid, and high levels of political knowledge. We compare these results to the dimensionality of voting in the Senate for the same set of votes that the CCES respondents were asked to respond to (and the results are no different if we use the ANES, which is reported in the Supplemental Materials). The results in Figure A12 show that even among the most knowledgeable segment of the population, opinion is far from the truly unidimensional, constrained patterns we observe in Congress. As we said in the introduction to this paper, a key difference between the mass public and elites is the difference between cocktail party opinions (even strongly held ones) and strategic opinions necessary to hold together a coalition of elected officials (Noel, 2013). Ordinary people—even the most ideological, with a deep knowledge

---

[2]Some scholars have even found correlations between "every significant or suggestions chromosomal region related to Conservative-Liberal attitudes" something they believe is critical for "attitude formation and constraint, particularly during critical neurological development in childhood, which corresponds to the same critical period of social learning and cultural assimilation of values" all in an effort to "offer a better understanding of political ideology" (Hatemi et al., 2011, p. 281).

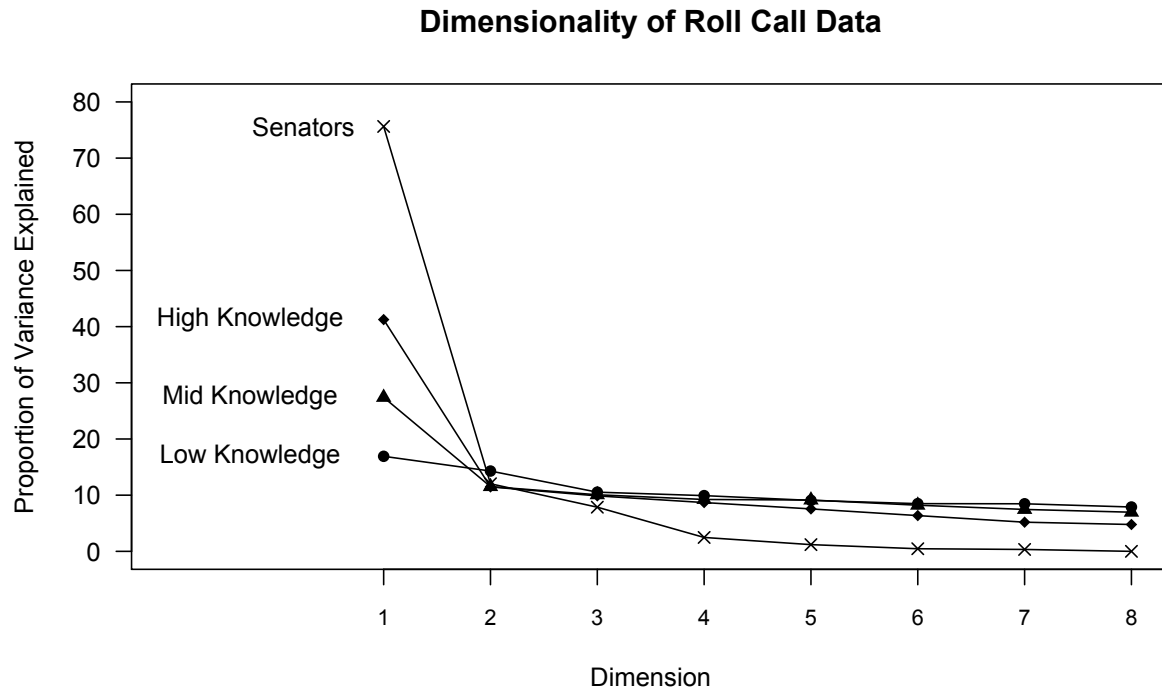**Dimensionality of Roll Call Data**

Figure A12: **Dimensionality of Opinion Among Respondents and Senate Roll Calls** - Unidimentionality of opinion is increasing in political knowledge among the public. However, even among the most knowledgeable, opinion is far less constrained than among Senators. Senate results come from analyzing votes on the 8 issue questions asked in the CCES that correspond to roll call votes held in the Senate.

of the political process—have a significantly lower need for their opinions to be truly consistent with the ideological coalition to which they best belong.

References

Abramowitz, Alan I. 2013. *The Polarized Public? Why American Government Is So Dysfunctional.* New York, NY: Pearson.

Bishop, Bill. 2009. *The big sort: Why the clustering of like-minded American is tearing us apart.* Mariner Books.

Campbell, James E and Carl M Cannon. 2006. "Polarization runs deep, even by yesterday's standards." *Red and Blue Nation? Characteristics and Causes of America's Polarized Politics* 1:72–85.

Hatemi, Peter K, Nathan A Gillespie, Lindon J Eaves, Brion S Maher, Bradley T Webb, Andrew C Heath,

Sarah E Medland, David C Smyth, Harry N Beeby, Scott D Gordon et al. 2011. "A genome-wide analysis of liberal and conservative political attitudes." *The Journal of Politics* 73(01):271–285.

Iyengar, Shanto, Gaurav Sood and Yphtach Lelkes. 2012. "Affect, Not IdeologyA Social Identity Perspective on Polarization." *Public opinion quarterly* 76(3):405–431.

Jacobson, Gary. 2012. "The Electoral Origins of Polarized Politics: Evidence From the 2010 Cooperative Congressional Election Study." *American Behavioral Scientist* 56(12):1612 – 1630.

Noel, Hans. 2013. *Political Ideologies and Political Parties in America.* New York, NY: Cambridge University Press.