Supporting Information

Mass Support for Global Climate Agreements Depends on Institutional Design

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Data and Conjoint Experiment

Our evaluation of how different features of climate change cooperation influence public support for alternative international agreements is based on original choice-based conjoint survey experiments conducted in the summer of 2012 in France, Germany, the United Kingdom, and the United States. All four surveys were conducted by YouGov over the internet on representative samples of the adult population.[1] The sample size was 2,000 for France, Germany, and the United Kingdom and 2,500 for the United States.

The core of our analysis draws on respondent choices between alternative global climate agreements presented within a conjoint framework. Conjoint analysis methods were developed in psychology and marketing and involve having respondents rank or rate two or more hypothetical choices that have multiple attributes with the objective of estimating the influence of each attribute on respondent choices or ratings.[2] Hainmueller, Hopkins, and Yamamoto (1) and Bechtel, Hainmueller, and Margalit (2) develop conjoint methods using fully randomized designs and analyze the properties of conjoint analysis in the potential outcomes framework for causal inference. Table S1 shows the distribution of sociodemographics in the population, the weighted sample, and the unweighted sample.

We devised a fully-randomized conjoint in which each respondent is shown two international agreements in comparison and asked to choose between them. This forced-choice design allows us to assess the influence of different features of climate change agreements on

[1] YouGov employs a carefully executed opt-in panel together with matched sampling to approximate a random sample of the adult population (3). Matched sampling involves taking a stratified random sample of the target population and then matching available internet respondents to the target sample. Although the primary objective of this study is to estimate experimental treatment effects for the participants, it is worth noting that Ansolabehere and Rivers (4) and Ansolabehere and Schaffner (5) show that matched sampling also produces accurate population estimates and replicates the correlational structure of random samples using telephones and residential addresses.

[2] For a discussion of early work, see Luce and Tukey (6) and Green and Rao (7).

how individuals evaluate a given agreement relative to another. One of the advantages of using a fully randomized design is that the causal effects of agreement features on public support are non-parametrically identified. In other words, we do not rely on any assumptions about the functional form that maps agreement features into support.

The directions for the conjoint experiment appeared on two pages before the respondent began choosing between agreements. First respondents were given the following instructions:

> "Most countries around the world are currently discussing the possibility of agreeing to new policies that would address the problem of global warming. We are interested in what you think about these international efforts and the United States's possible participation in such an agreement.
>
> We will now provide you with several examples of what agreements between countries to address climate change could look like. We will always show you two possible agreements in comparison. For each comparison we would like to know which of the two agreements you prefer. You may like both alternatives similarly or may not like either of them at all. Regardless of your overall evaluation, please indicate which alternative you prefer over the other.
>
> In total, we will show you four comparisons. People have different opinions about this issue and there are no right or wrong answers. Please take your time when reading the potential agreements. In addition to deciding which climate agreement you would prefer, we also ask you how likely you would be to vote for or against the United States joining each agreement in a referendum."

Second respondents were shown Fig. 1 with further instructions:

> "The figure below shows the features of the two possible agreements that you will be choosing between. Note that the order of the features may vary."

Each respondent was shown four such binary comparisons. For each agreement that a given respondent considered, we constructed the variable *Agreement Support* and coded it 1 if an individual chose that agreement and 0 if they did not. In addition to asking respondents which of the two agreements they prefer, we ask: "If you could vote on each of these agreements in a referendum, how likely is it that you would vote in favor or against each of the agreements? Please give your answer on the following scale from definitely against (1) to definitely in favor (10)." This measure provides an assessment of the absolute support for a given agreement. We constructed the variable *Vote for Agreement* ranging from 1 to 10 indicating an increasing likelihood of voting for a given agreement in a referendum.

Table 1 in the manuscript paper shows the dimensions and values used in the conjoint experiment. The dimensions that we focus on follow closely our emphasis on costs, participation, and enforcement as potentially important features of a climate agreement which

may influence public support. For each agreement alternative presented to a respondent, the values for each dimension are randomly assigned.[3]

The values for the costs to average households directly mirror the different cost scenarios discussed in the public and scientific debate. According to Stern (8) and others (9, 10) stabilizing CO2 concentration at 550 particles per million (ppm)—a level thought to be consistent with limiting the global temperature increase to 2 degrees Celsius above its preindustrial level—will require abatement costs in the order of 2 percent of GDP in industrialized countries. Nordhaus (11), however, has argued that the discount rates used by Stern (8) are too low and that the costs of abatement in the near term should be somewhat lower. Moreover, one could imagine a range of agreements that are more or less ambitious in the extent of emissions reductions targeted, are more or less efficient in the policies developed to meet emission targets, or target reductions of short-lived pollutants instead of carbon dioxide emissions (12).[4] All these differences could bring about variations in the costs that countries and their publics face. To incorporate variation in agreement costs, we computed monthly abatement costs to the average household for five different cost scenarios, ranging from 0.5 to 2.5% of a country's GDP in steps of 0.5 percentage points.

Our choice of allocation principles guiding the distribution of costs mirrors the public debate and includes variants of the "polluter-pays" principle (proportional to current emissions and proportional to the history of emissions), as well as the "ability-to-pay" principle (only rich countries pay and rich countries pay more than poor countries). For participation, we simply varied the number of countries participating from 20 to 80 to 160 out of 192 and the percent of emissions accounted for by participating countries from 40% to 60% to 80% of current emissions. For monitoring, respondents considered agreements that would monitor obligations by national governments, the United Nations, an independent commission, and Greenpeace. Finally, for sanctions, we used an approach similar to that used for the calculation of costs and normalized the size of sanctions for a country missing its emission reduction targets to the average household, distinguishing between no sanction and a low, medium, and high sanction. For each country, the low, medium, and high sanction values correspond to 5%, 15%, and 20% of the monthly household costs for the 2% of GDP scenario.

The analysis of choice-based conjoint experiments is often motivated in a standard random utility model framework with each survey response interpreted as reflecting the utility difference between the choices under consideration. Utility is modeled as a function of observed characteristics of the choice set, individual characteristics of the respondent, possibly interactions between these observables, and an error term capturing unobserved factors. Based on the assumption of individuals selecting the choice that gives them the greatest utility, researchers can directly derive an equation to be estimated from the response model—typically a probit or logit. However, given that our research design fully randomizes the attributes of the climate agreements under consideration, it is possible to nonparametrically compare levels of support across attribute levels for any given dimension of an agreement to determine the

[3] The order of the dimensions was randomly assigned for each respondent but remained consistent across the four binary comparisons. Table S2 presents balance tests showing that attribute value treatments did not systematically vary by the demographic characteristics of respondents.

[4] Carbon dioxide remains in the atmosphere for hundreds of years while short-lived pollutants, e.g., black carbon, chlorofluorcarbons, hydrofluorocarbons, methane, or lower atmospheric ozone, have much shorter life spans (several weeks). At the same time, short-lived pollutants account for about 40% of global greenhouse gas emissions, see Victor et al. (12).

average causal effect of a given attribute on support for an agreement. This means that—unlike non-experimental conjoint analyses conducted within the standard random utlity framework—we do not make any assumption about the model's functional form.

Method

Our substantive focus in the paper is estimating the *average marginal component-specific effect* which corresponds in our application to the average effect of a change in values of one of our six dimensions of a global climate agreement on the probability that that agreement is chosen by the respondent. Hainmueller et al. (1) provide a formal analysis that defines a number of potential causal estimands of interest for conjoint analyses and shows that with a fully randomized design simple difference-of-means estimators yield unbiased estimates.[5]

We obtain the difference-of-means estimators by regressing the variable *Agreement Support* on a set of dummy variables for each value of each dimension (with the exclusion of one value in each dimension as the baseline).[6] The regression coefficient for each dummy variable indicates the average marginal component-specific effect of that value of the dimension relative to the omitted value of that dimension. We report standard errors for these estimates clustered by respondent to account for within respondent correlations in responses. We also reestimated the effects using a probit model. The results (Fig. S8) remain unchanged.

To help interpret the main findings, our analysis also explore how the treatment effects vary across different types of respondents in our sample. These conditional treatment effects are also non-parametrically identified in our fully randomized conjoint experiment as long as the respondent characteristics are not affected by the treatments. This assumption appears plausible in our setting.

Predicted Levels of Support

We compare the levels of support for two hypothetical agreements. The first scenario roughly corresponds to the agreement that is discussed in ongoing international efforts. Specifically, we assume that costs are in the order of 2% of GDP, only rich countries pay, 160 countries will participate, they account for 60% of global emissions and the mitigation efforts will be monitored by the United Nations without having the power to impose any sanctions if a country does not meet its commitments. The second scenario generally maximizes support: average household costs are 0.5% of GDP and distributed proportional to current emissions, 160 countries will participate that together account for 80% of global emissions, their efforts will be monitored by an independent commission and there will be a small sanction if commitments are not met.

To generate the predicted levels of support for different climate agreements we draw on the rating part of the conjoint analysis. For each conjoint comparison we asked respondents:

[5] In addition to randomization of the agreement attributes, it is also useful to assume that the potential outcomes in each decision made by a respondent would be the same if the agreement attributes were the same regardless of what comparisons they had previously considered and that the order of the dimensions presented in a given comparison does not affect respondent choices.

[6] The regressions are weighted by sampling weights although there are no significant differences between the weighted and unweighted estimates.

> "If you could vote on each of these agreements in a referendum, how likely is it that you would vote in favor or against each of the agreements? Please give your answer on the following scale from definitely against (1) to definitely in favor (10)."

The rating task was posed as a probabilistic question. Therefore, respondents' answers have a probabilistic interpretation as they indicate indicated how likely it is that they would vote in favor or against the agreement if it was put up for a direct vote. We exploit the probabilistic nature of the ratings by linearly rescaling them to map onto the set [0, 100]. More specifically, we use the following linear transformation:

$$y_i = \frac{100}{9}(r_i - 1),$$

where y_i is the rescaled rating variable, r_i is the original agreement rating variable, and i denotes the observation. The rescaled rating variable measures the probability of supporting an agreement in a referendum vote in percent. We then estimated the effect of agreement features on the rescaled rating variable for each country and computed predicted values for the two specific agreements described in the main text together with 95% confidence intervals. These predicted values have a direct aggregate level interpretation as the level of support for an agreement in percent of the population.

Table S3 shows the results. We first note that the differences in the levels of support across countries are consistent with well documented differences in general support for climate mitigation efforts: Citizens in the United States are on average more antithetical to both climate agreements than citizens in Europe. More importantly, however, we find that changes in the specific design of a global climate agreement can lead to noteworthy shifts in public support. In three out of the four countries we study the change in agreement design features suffices to turn an agreement that a majority rejects into a treaty supported by the majority of voters. In France, only 42% of the citizens support the Agreement 1, which is the agreement that is currently being discussed as part of international efforts to improve climate cooperation. The agreement that maximizes support, however, would be backed by 60% of all voters. Although the lower costs associated with this agreement are responsible for a large part of the observable increase in public support, other agreement features like participation and monitoring have pronounced effects as well. Moreover, a small sanction for countries that fail to meet their obligations would also be part of such a popular agreement. This contradicts the view that any feature that makes an agreement less costly or stringent would increase public support.

Similarly, in Germany public support for an agreement increases from about 37% to slightly over 60% if that agreement incorporates design features individuals value. Also in the United Kingdom, the most popular agreement receives at least a slim majority. In the United States, however, the shift in support in response to changing the features of the currently discussed agreement to the most popular agreement does not marshal a majority. Yet, this design change still increases support from 29% to 47%, an increase that seems significant enough to likely have an important substantive impact on the politics of climate change cooperation in the United States.

Testing the Moderating Effect of Environmentalism and Ideology

Our results indicate that the public generally prefers global climate agreements in which many countries participate. One explanation advanced in the paper for this design effect is that such agreements may be viewed as more effective. The paper provides evidence consistent with this interpretation by showing the greater sensitivity of support among respondents with high levels of environmentalism to levels of participation. This result, however, remains open to alternative interpretations. For example, a rival explanation for the these differences in respondents' sensitivities to agreement design features might be that environmentalists tend to be more ideologically left than non-environmentalists. To formally explore the interaction effects between agreement features and environmentalism/ideology we regress the variable agreement support on dummy variables that indicate the agreement's features and a full set of interactions with environmentalism/ideology along with the constitutive terms. This allows us to formally test whether there exist systematic differences between different groups. If ideology is driving the differences in treatment effects between pro-environmentalists and anti-environmentalists we would expect to find a similar pattern of interaction effects when replacing our environmentalism indicator variable with a variable that measures respondents' ideology. The patterns should be similar in particular with respect to the participation dimension.

Model 1 in Table S4 shows the results when we interact each agreement feature indicator variable with an indicator variable that distinguishes between high and low levels of environmentalism. Environmentalism is measured by asking individuals: "As you probably know, many experts say that countries have to reduce their greenhouse gas emissions to address global warming. Generally speaking, how strongly do you support or oppose international cooperation to reduce greenhouse gas emissions even if this involves significant costs?" Answers were given on a scale from 1 ("strongly support") to 5 ("strongly oppose") and converted into an indicator variable (*High Environmentalism*) that equals one for those who support or strongly support international climate cooperation and is zero otherwise.

When considering the coefficients on the interaction terms between the cost treatment variables and high environmentalism (Model 1 in Table S4), we find that they are all significantly positive. This suggests that individuals with high levels of environmentalism are significantly less sensitive to an agreement's climate mitigation costs than respondents with low levels environmentalism. The interaction term's coefficient increases in the size of the costs. For example, it is about 0.026 for the interaction term between "Costs 1.5% of GDP" and high environmentalism but 0.064, i.e, three times as large, when we consider the coefficient on the interaction for the 2.5% of GDP cost scenario. This is consistent with the interpretation that those who have a stronger preference for global climate policy in general are more willing to incur the costs arising from the provision of this public good.

We find similar differences for the participation dimension irrespective of whether participation is conceptualized in terms of the number of countries or in terms of the share of global emissions accounted for by the participant countries: all coefficients on the interaction terms between the participation indicator variables and the high environmentalism variable are significantly positive. This suggests that those with higher levels of environmentalism more strongly support global climate agreements that include more countries or where participating countries represent a larger share of global emissions. In the latter case we actually find that only those with high levels of environmentalism seem to support more encompassing climate

treaties, as the coefficients on the "60% of current emissions" and "80% of current emissions" variables are not significant for those with low levels of environmentalism.

Finally, a similar pattern exists for the enforcement dimension treatments. First, the coefficient on the interaction term between the low sanction treatment and high environmentalism is positive and significant while the coefficient on the low sanction treatment indicator alone remains insignificant. This suggests that a climate agreement that includes a low sanction significantly increases support only among those with a stronger general preference for international environmental cooperation. Second, for agreements that include a medium sanction, the interaction effect (0.065) is significant and large enough to outweigh the reduction in support for an agreement that includes a medium sanction (0.065-0.059=0.006). In other words, while a medium sanction for countries that do not meet their climate mitigation obligations significantly reduces support among those with low levels of environmentalism, environmentalists are indifferent between an agreement that includes no sanction (the baseline) and an agreement that includes a medium sanction. Third, the interaction terms are significantly positive for all monitoring treatments, suggesting that environmentalists prefer any of these actors to monitor the climate mitigation efforts over having their own government being responsible for this task. This stands in contrast to most of the effects of the monitoring institution treatments for the non-environmentalists, as these tend to significantly reduce support for an agreement as compared to the benchmark of having respondents' own government monitor mitigation efforts. Overall, these results suggest noteworthy differences in the effects of agreement features across levels of environmentalism.

The interpretation of these differences advanced in the paper is that they are consistent with the idea that individuals who value an effective agreement have a higher demand for these institutional features. To explore a rival interpretation that these differences are due to ideology, we re-estimate the model and include a full set of interactions between the treatment indicators and a dummy variable that identifies respondents as either ideologically left or right.[7] Model 2 in Table S4 shows the results. The coefficients on the interaction effects between the cost treatment indicators and the left ideology variable are all insignificant. This stands in stark contrast to the significantly positive interaction effects that we estimated when interacting the treatment indicators and the environmentalism variable. While environmentalists are much more willing to incur costs arising from international climate policy than non-environmentalists, such a difference does not appear to exist when comparing those on the left and those on the right of the ideological spectrum. This speaks against the argument that a left-right cleavage underlies the difference in treatment effects that we find when partitioning the data using respondents' level of environmentalism.

The lacking similarity in the effects accounted for by ideology as opposed to environmentalism becomes also visible when we examine the effects of the participation treatments. While all interactions are statistically significant, the coefficients on the interactions between the participation treatment indicators and left ideology are considerably smaller in magnitude. For

[7] Ideology was measured using the following question: "In politics people sometimes talk of 'left' and 'right.' Where would you place yourself on this scale, where 0 means the left and 10 means the right?" Answers were converted into an indicator variable (*Right Ideology*) that equals one for those with answers exceeding the median response (which was 5) and is zero otherwise.

example, the coefficient on “80 out of 192 countries*High environmentalism” is 0.086 while the coefficient on “80 out of 192 countries*Left ideology” is only 0.020. This difference is also statistically significant. We find a similar pattern when comparing the interaction effects for the other participation treatments. Thus, the difference in treatment effects between respondents with high and low levels of environmentalism seems more pronounced than the difference in respondents' sensitivities accounted for by ideology. This pattern is also visible in the interaction results for the monitoring treatments. Taken together, these results based on this comparison of interaction patterns suggest that the high/low environmentalism divide captures a cleavage that is different from the standard ideological, left-right divide.

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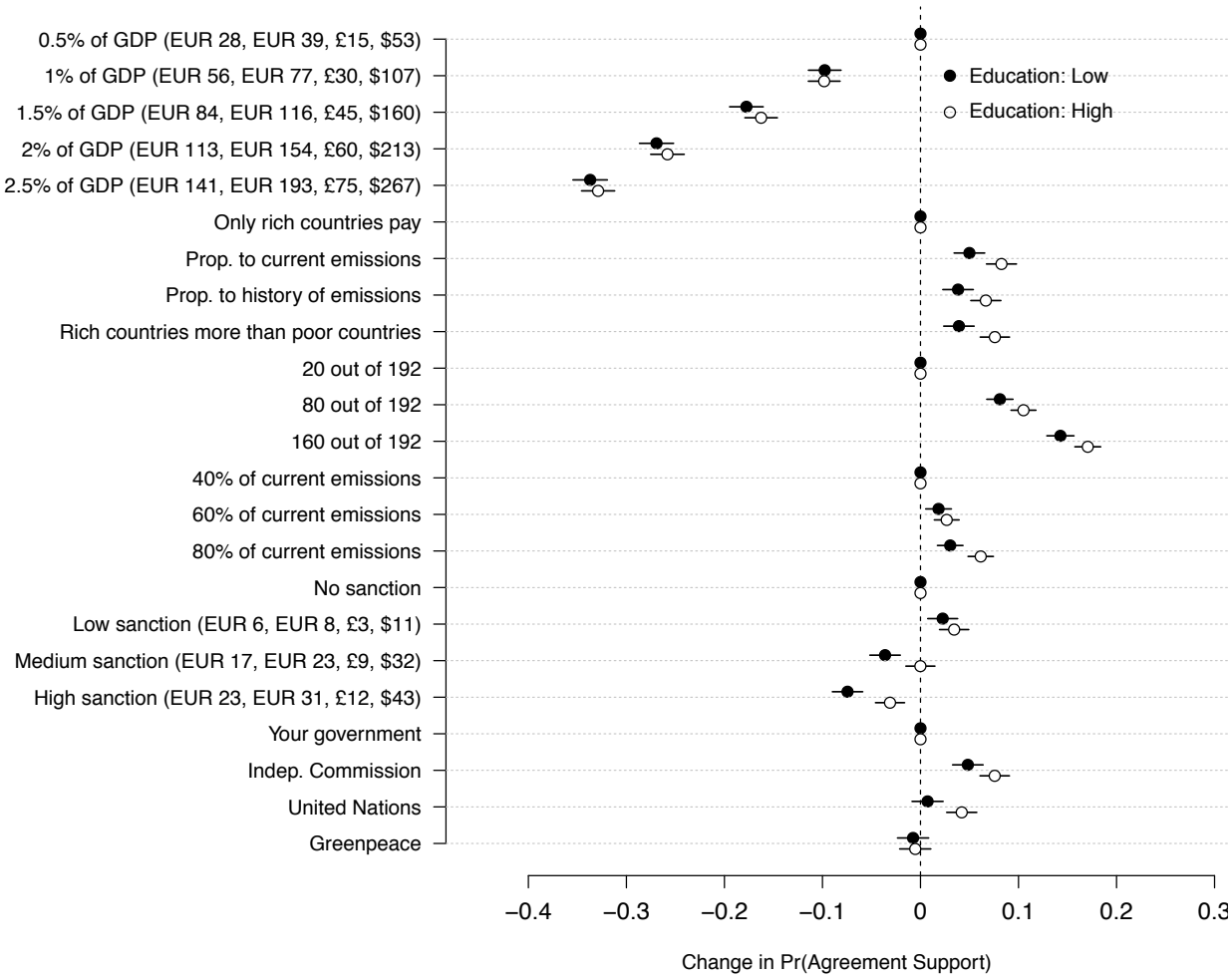

Fig. S1

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States by Level of Educational Attainment. This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. We coded respondents' levels of education as high using the following scheme: France: "BAC to BAC+2" or "BAC+3 or more" or higher; Germany: "Realschule" or higher; United Kingdom: "GCE A Level or Higher Certificate" or higher; United States: "Some college" or higher. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension.

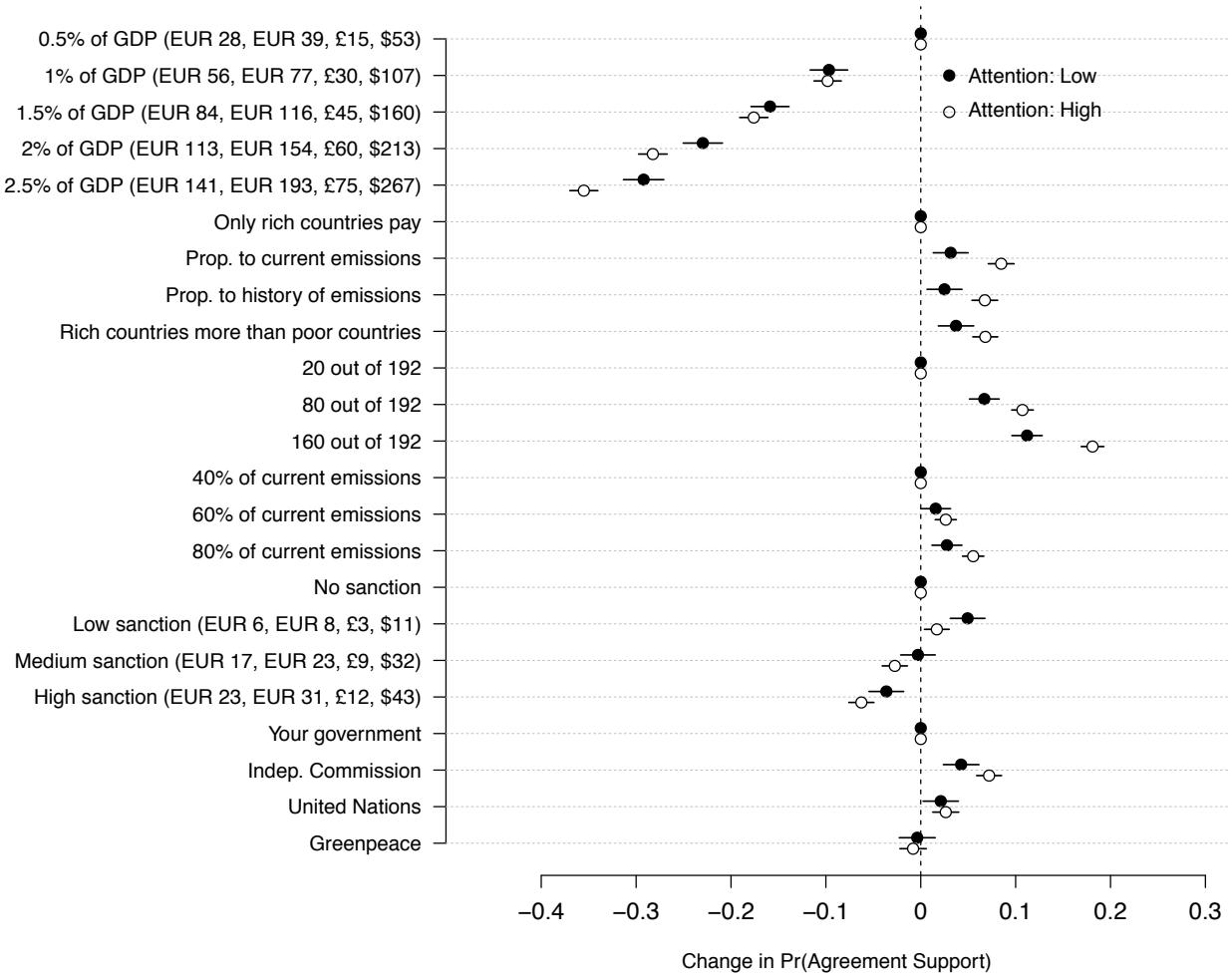

Fig. S2

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States by Level of Attention. This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension. We measured attention by asking individuals the following question after they had completed about 70 percent of the survey: "We are interested in learning about your preferences on a variety of topics, including colors. To demonstrate that you've read this much, just go ahead and select both red and green among the alternatives below, no matter what your favorite color is. Yes, ignore the question below and select both of those options. What is your favorite color?" Correct answers were coded as one and incorrect answers as zero.

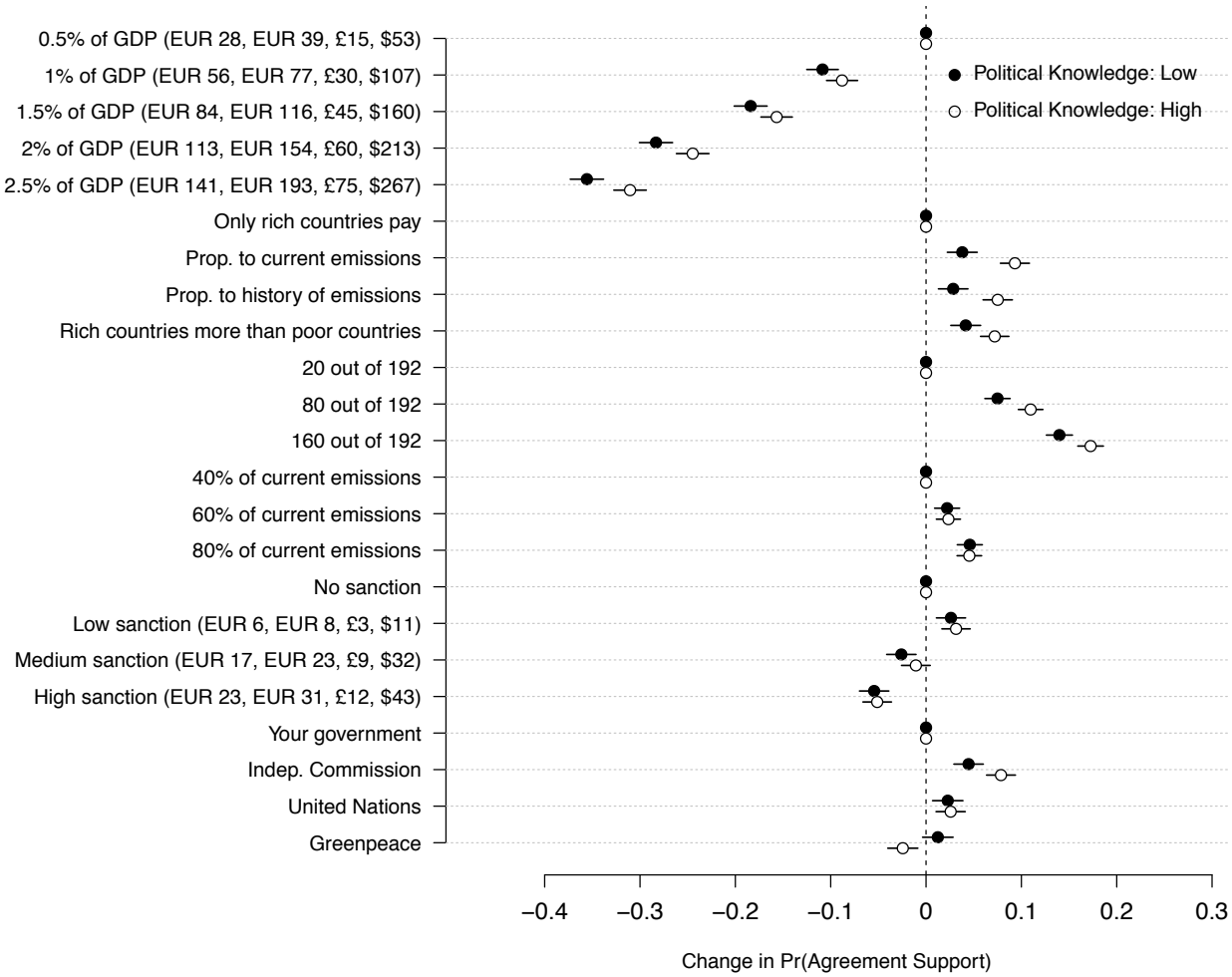

Fig. S3

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States by Level of Political Knowledge (Secretary of State). This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension. We measured political knowledge by asking individuals to select their current secretary of state/minister of defense from a list of four politicians currently holding a ministry. Correct answers were coded as one and incorrect answers as zero.

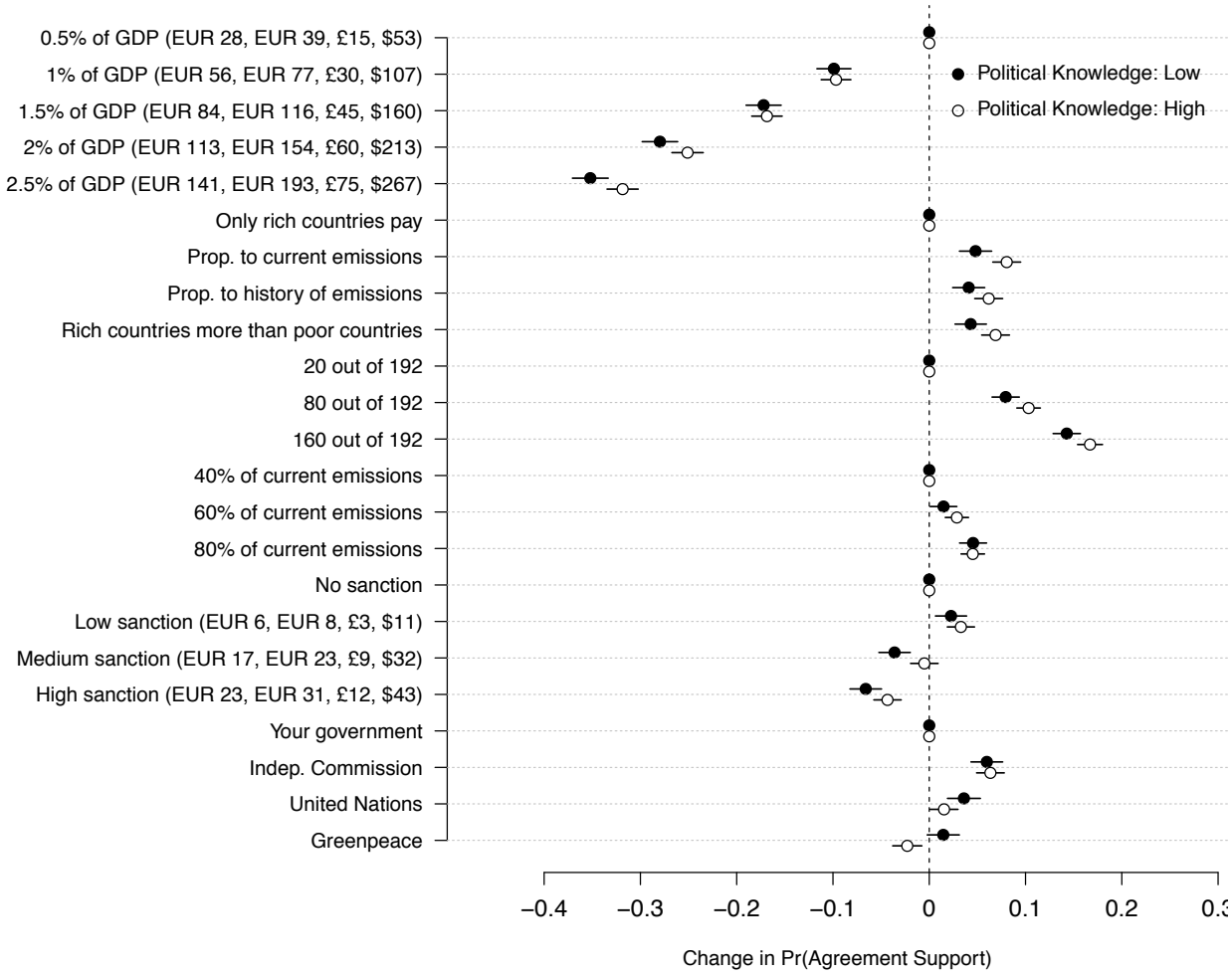

Fig. S4

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States by Level of Political Knowledge (Term Length). This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension. We measured political knowledge by asking individuals to indicate the number of years there are in one full term in office for a Senator/MP on a scale from 1 to 8 years. Correct answers were coded as one and incorrect answers as zero.

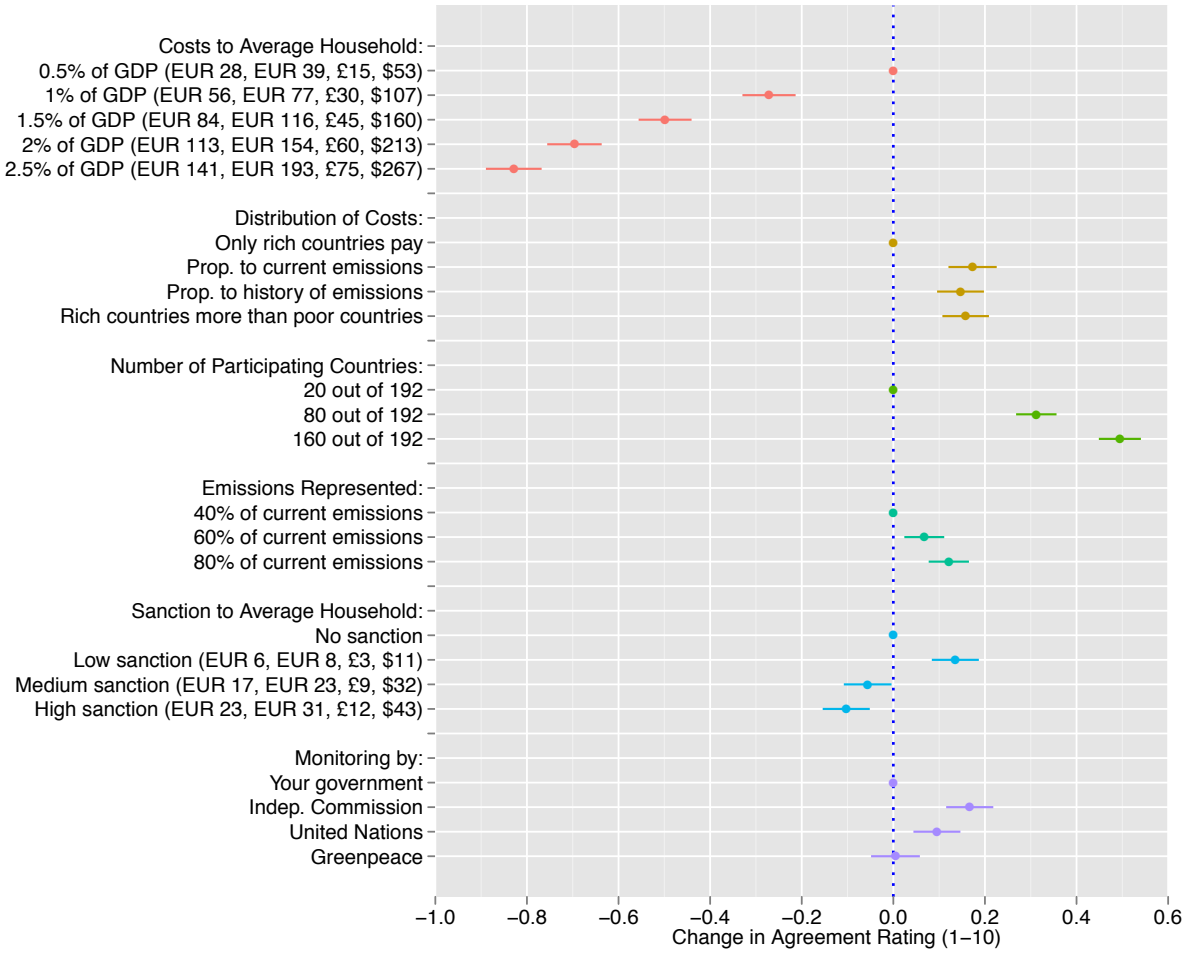

Fig. S5

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States Using Agreement Ratings. This plot shows estimates of the effect of randomly assigned agreement features on the level of support for an agreement. Estimates are based on the regression of *Agreement Rating* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. *Agreement Rating* was measured by the following question: "If you could vote on each of these agreements in a referendum, how likely is it that you would vote in favor or against each of the agreements? Please give your answer on the following scale from definitely against (1) to definitely in favor (10)." The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension.

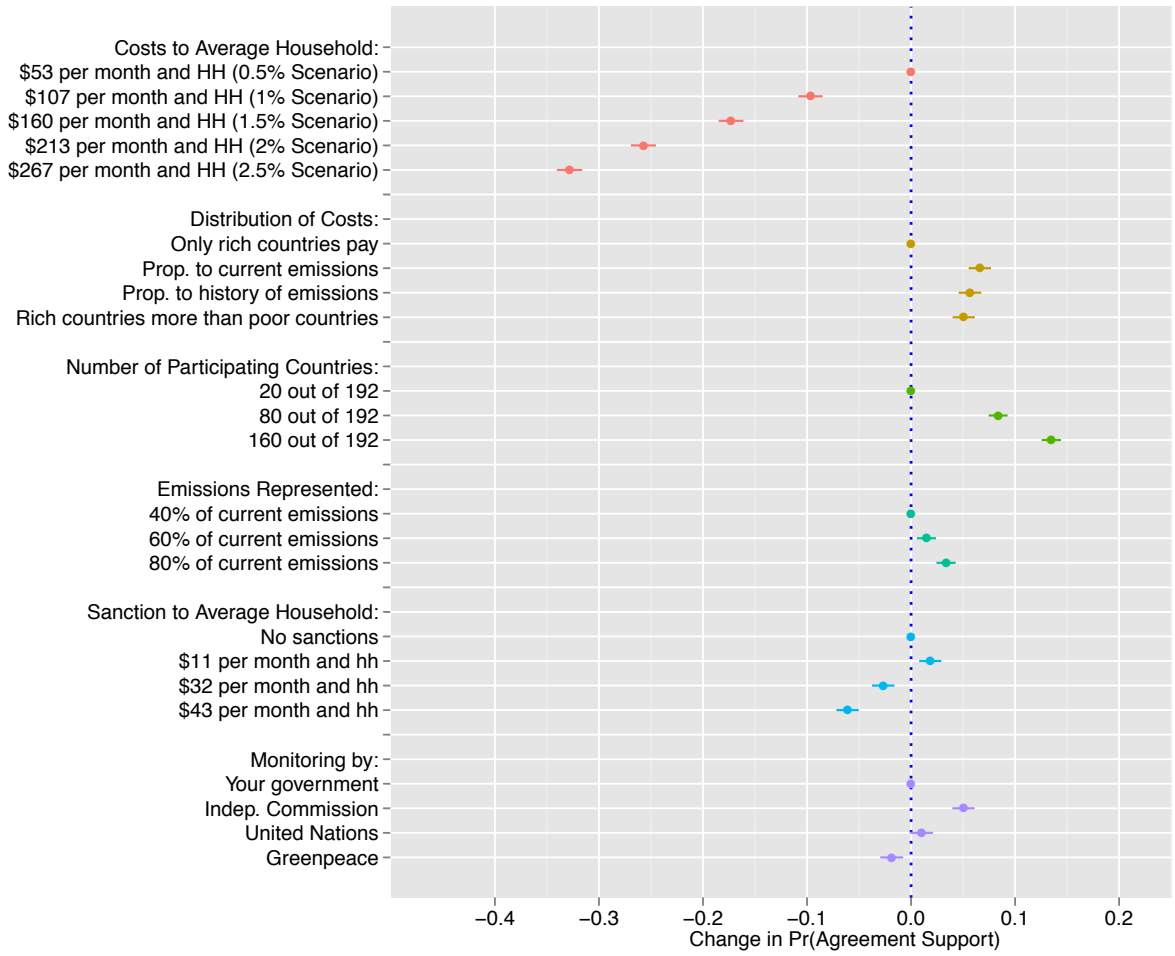

Fig. S6

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States Using Data from Consistent Choices only. This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension. Choices are coded as consistent if the agreement supported in the ranking (binary choice) is also rated higher in the ranking component of the conjoint.

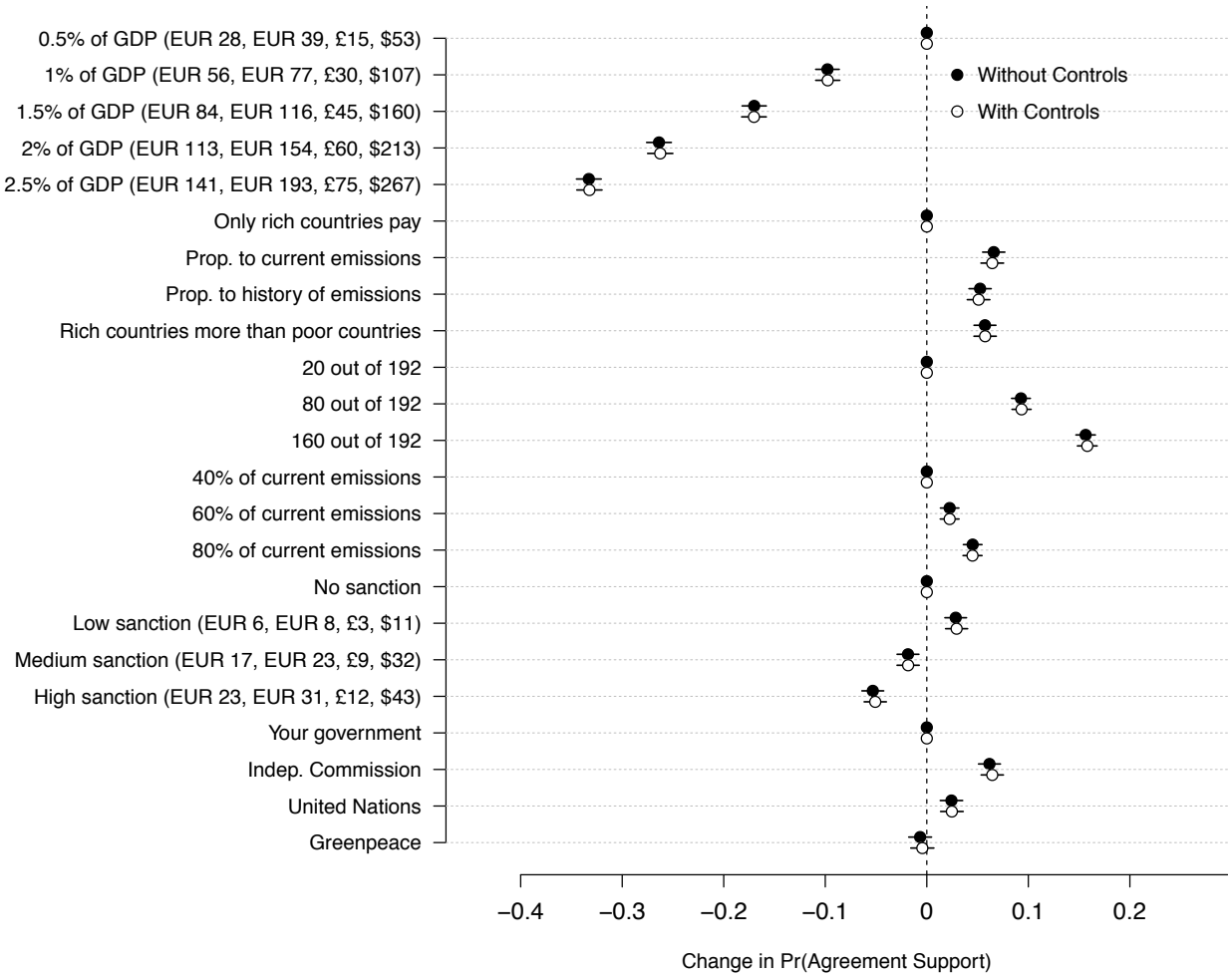

Fig. S7

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States with and without Control Variables. This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The model with control variables includes the following socio-demographic covariates (coefficients not reported): Income, Age, Gender, Education. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension.

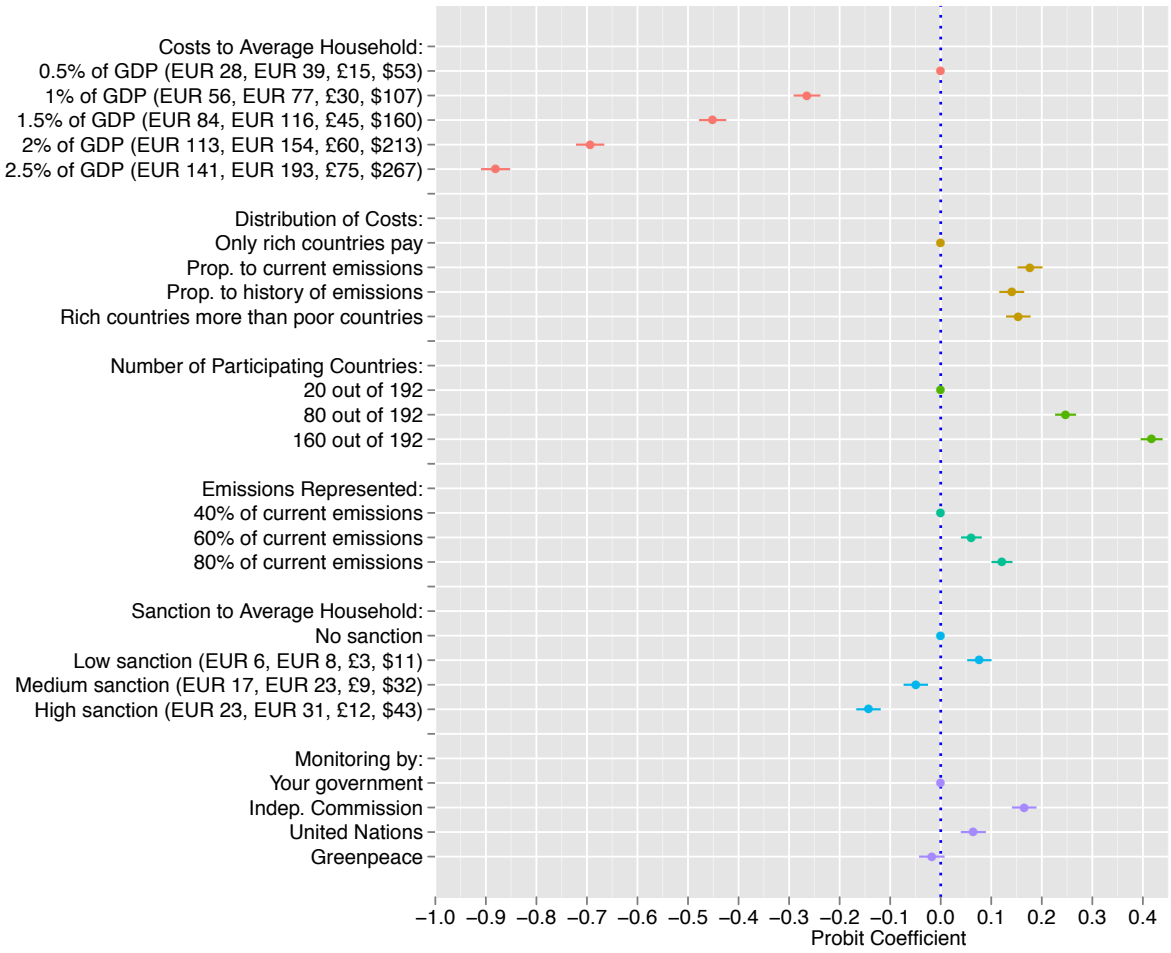

Fig. S8

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States (probit estimates). This plot shows probit coefficients for the effect of randomly assigned agreement features. Estimates are based on a probit regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension.

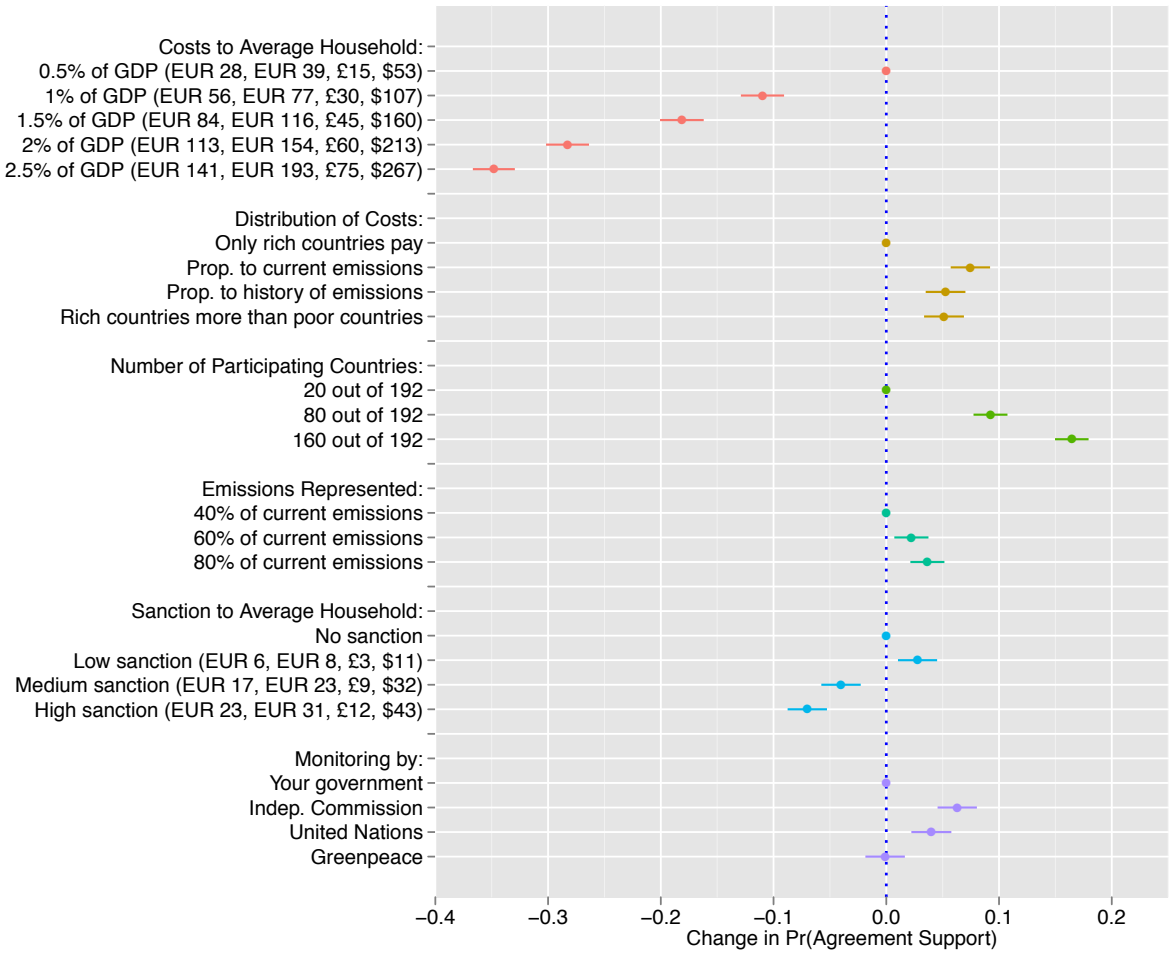

Fig. S9

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States for the first Conjoint Comparison. This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement using only data from the first conjoint comparison that was shown to respondents. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension.

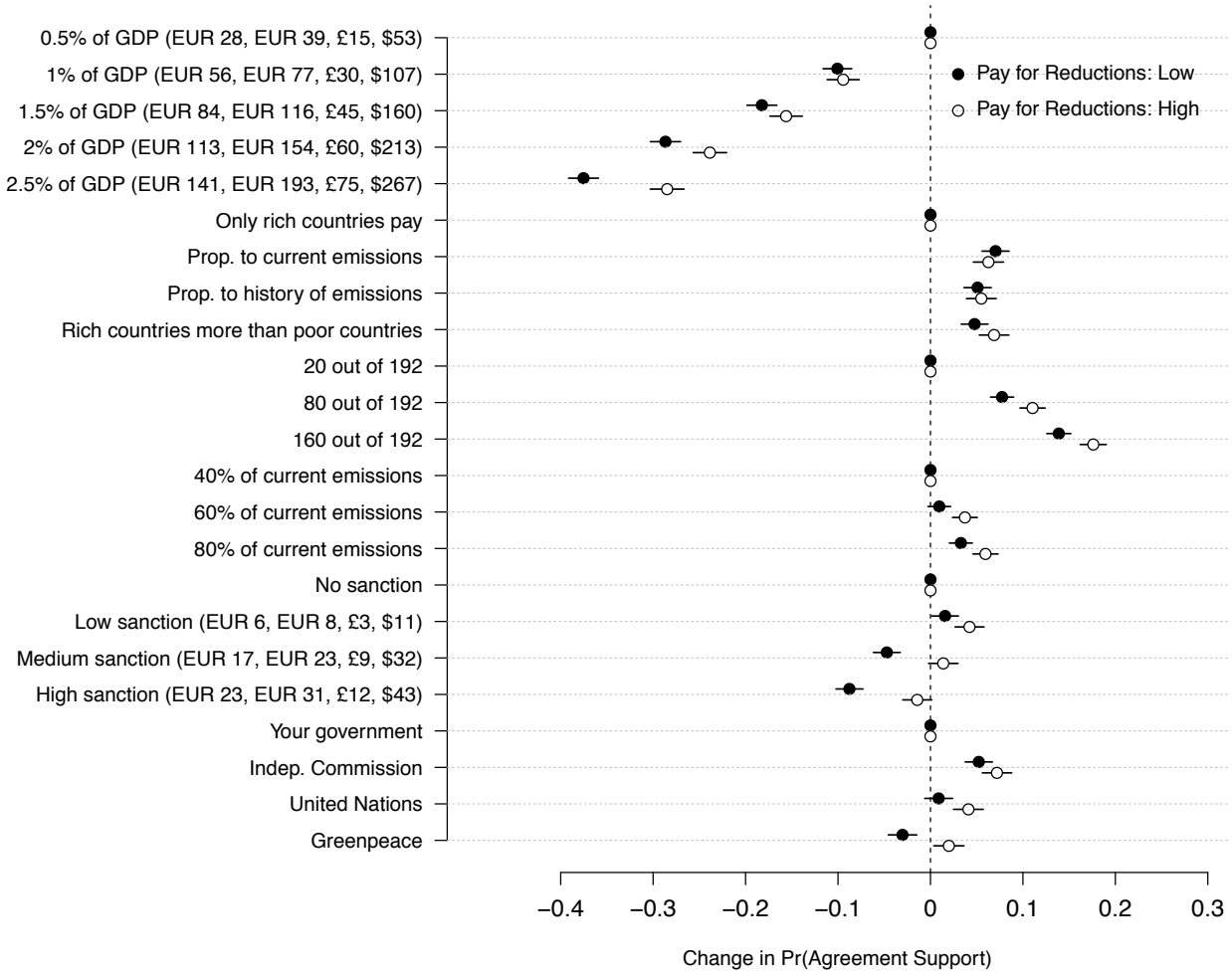

Fig. S10

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States by Level of Environmentalism (Willingness to Pay). This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate the reference category for a given agreement dimension. Environmentalism is measured using the following question: "If you consider your monthly income: How much of it would you be willing to invest into reducing greenhouse gas emissions (for example, buying energy efficient electric appliances, installing heat insulation in your home, buying electric power produced from renewable energy sources, buying locally produced food)? Please indicate the amount on a scale from 0 to 100, with 0 meaning 'nothing at all' and 100 meaning 'my whole income'." Answers were converted into a binary indicator variable that equals one for those who indicated an amount higher than the median response (which was 18%) and is zero otherwise.

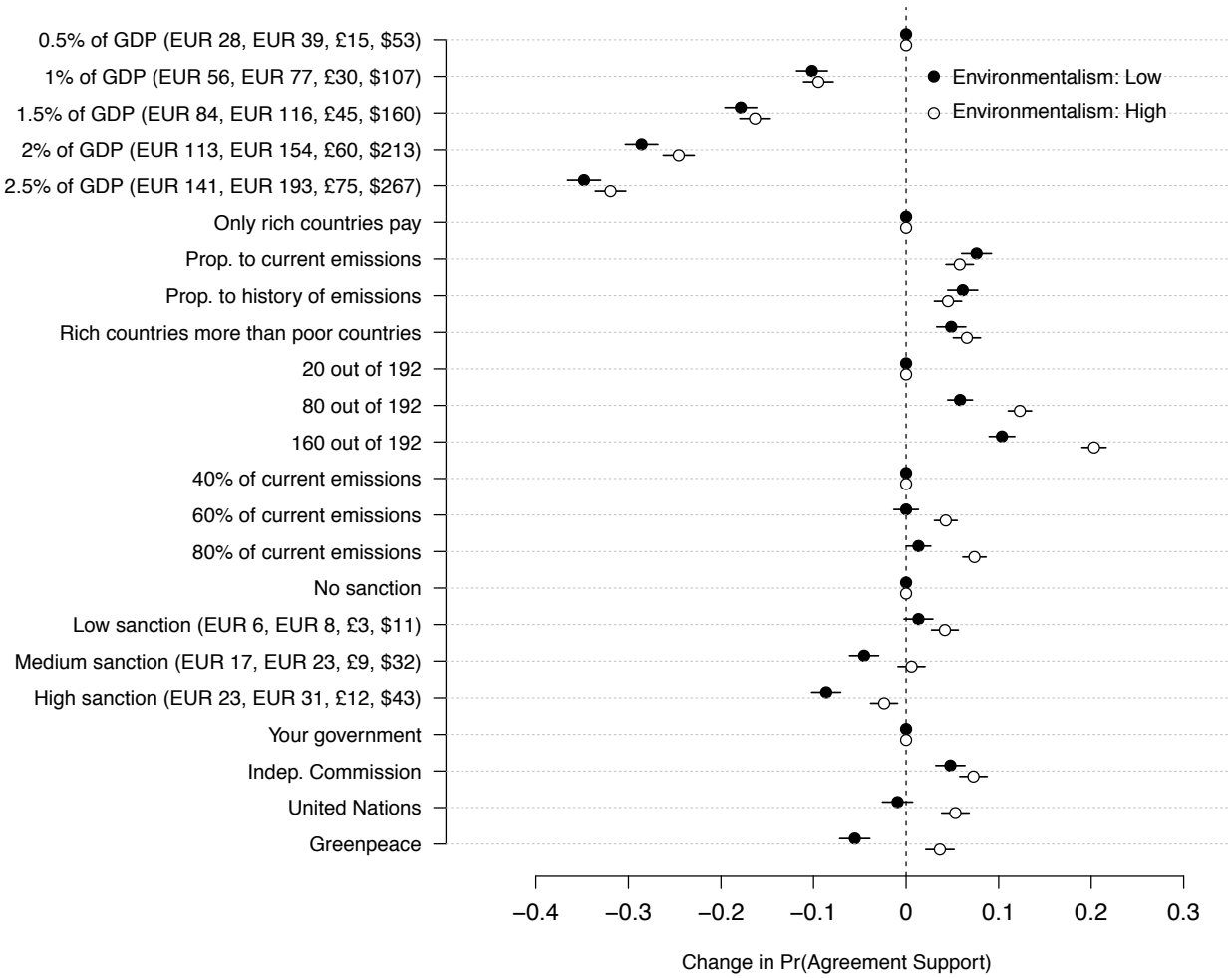

Fig. S11

Effect of Agreement Dimensions on Public Support for Global Climate Change Cooperation in France, Germany, the United Kingdom, and the United States by Level of Environmentalism (Importance of Reductions). This plot shows estimates of the effect of randomly assigned agreement features on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions with standard errors clustered by respondent. The bars indicate 95% confidence intervals and the points without bars indicate that that value is the reference category for a given agreement dimension. Environmentalism is measured by asking individuals: "How important do you think it is for [France, Germany, the United Kingdom, the United States] to reduce greenhouse gas emissions?" Answers on a ten-point scale from 1 "not at all important" to 10 "extremely important" were converted into an indicator variable that equals one for those who indicated a level of importance exceeding the average response (which was 6.6) and is zero otherwise.

Country	Population	Weighted Sample	Raw Sample
France			
Age: 18-39	31.6	31.6	30.6
Age: 40-54	28.5	25.9	26.8
Age 55+	39.9	42.6	42.7
Gender: Male	47.6	47.6	47.7
Gender: Female	52.4	52.4	52.4
Education: CAP/BEP or less	59.8	59.8	59.1
Education: Bac to Bac+2	27.5	27.5	28.2
Education: Bac+3 or more	12.7	12.7	12.8
Germany			
Age: 18-39	23.1	23.1	24.8
Age: 40-54	36.6	36.6	32.3
Age 55+	40.3	40.3	42.9
Gender: Male	49.0	49.0	49.0
Gender: Female	51.0	51.0	51.1
Education: 16 or fewer	43.4	43.6	42.5
Education: 17 to 19 yrs	33.0	33.3	34.8
Education: 20 yrs or more	23.6	23.1	22.8
United Kingdom			
Age: 18-34	23.4	23.4	25.4
Age: 35-54	33.7	33.7	44.6
Age 55+	42.9	43.0	30.0
Gender: Male	47.3	47.3	47.3
Gender: Female	52.7	52.7	52.7
Education: 16 or fewer	55.3	53.5	50.4
Education: 17 to 19 yrs	21.2	23.0	24.7
Education: 20 yrs or more	23.5	23.6	25.0
United States			
Age: 18-34	29.5	27.1	19.4
Age: 35-54	38.5	34.0	32.4
Age 55+	32.1	39.0	48.1
Gender: Male	48.2	48.3	47.6
Gender: Female	51.8	51.2	52.4
Education: HS or less	45.0	44.9	39.7
Education: Some college	30.0	22.2	23.4
Education: College graduate	16.3	24.0	27.5
Education: Post-graduate	8.8	8.8	9.5

Table S1.

Distributions of Sociodemographics in the Survey Sample and the Population. The table shows the distributions of socio-demographics in the population, the weighted sample, and the raw sample. The population socio-demographics are taken from the following sources: France: French Statistical Office, 2009 Population Census. Germany: Sept-Oct 2011 Eurobarometer. France: Aug-Sept 2010 Eurobarometer. United States: 2007 American Community Survey, 2008 Current Population survey, 2007 Pew Religious Landscape Survey.

	Costs							Participation				Enforcement					
	Costs per Household				*Distribution*			*Countries*		*Emissions*		*Sanctions*			*Monitoring*		
	0.5% of GDP	1.5% of GDP	2% of GDP	2.5% of GDP	Only rich	Prop. current emissions	Rich pay more	80 of 192	160 of 192	60%	80%	None	0.5% of 2% GDP	1.5% of 2% GDP	Your government	UN	Greenpea
Income	0.002	0.002	0.001	0.009**	0.008**	0.004	0.004	0.004	0.001	0.001	0.000	-0.002	0.004	0.000	-0.001	0.001	-0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Age	-0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	0.000	-0.000	-0.001	0.001	0.000	0.001	-0.001	-0.000	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Female	-0.043*	-0.056**	-0.021	-0.010	-0.018	0.009	-0.020	-0.004	-0.001	0.035*	-0.005	0.003	-0.011	0.009	0.019	-0.000	0.002
	(0.025)	(0.025)	(0.025)	(0.025)	(0.022)	(0.022)	(0.022)	(0.019)	(0.019)	(0.019)	(0.019)	(0.023)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Education	0.003	-0.002	0.032	-0.010	0.001	-0.025	0.012	-0.032	0.006	-0.003	-0.019	0.040*	0.046*	0.074***	-0.002	-0.003	0.030
	(0.027)	(0.026)	(0.027)	(0.027)	(0.024)	(0.024)	(0.024)	(0.021)	(0.021)	(0.021)	(0.020)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Constant	-0.006	-0.018	-0.040	-0.073	-0.042	0.001	-0.001	0.021	-0.025	-0.022	0.024	-0.076	-0.058	-0.080*	0.019	-0.003	-0.044
	(0.052)	(0.053)	(0.053)	(0.053)	(0.046)	(0.046)	(0.046)	(0.040)	(0.041)	(0.041)	(0.041)	(0.048)	(0.047)	(0.046)	(0.046)	(0.046)	(0.047)

Table S2.

Balance Tests. This table reports results from multinomial logit models in which agreement features are modeled as a function of socio-demographic characteristics. One model estimated for each of subdimension (costs per household, distribution, countries, emissions, sanctions, monitoring). The missing category forms the base outcome. Base outcomes are: For Costs per Household: 1% of GDP, for Distribution: "Proportional to history of emissions", for Participation (Countries): "20 of 192", for Participation (Emissions): "40%", for Enforcement (Sanctions): "1% of 2% GDP", for Enforcement (Monitoring): "Independent Commission". Coefficients shown with standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. N=65,594 for all models

	(1) Discussed Agreement	(2) Most Popular Agreement
France	42.1	60.4
	[39.7, 44.4]	[57.7, 62.9]
Germany	37.0	60.2
	[34.8, 39.2]	[57.8, 62.5]
United Kingdom	36.1	51.1
	[33.9, 38.3]	[48.6, 53.6]
United States	29.2	47.4
	[27.0, 31.4]	[44.8, 50.0]

Table S3.

Predicted Levels of Support for Global Climate Agreements in Percent by Country. The table shows predicted levels of support for two hypothetical agreements in percent with 95% confidence intervals in brackets. The features of Agreement 1 resemble the agreement that is currently discussed in ongoing international efforts. Specifically, its features are: Average households costs of 2% of GDP; only rich countries pay; 60 countries participate; represented emissions are 60%; monitoring by the United Nations; no sanctions. The features of Agreement 2 are set such that they maximize general public support: Average household costs of 0.5% of GDP; costs distributed proportional to current emissions; 160 countries participate; emissions represent 80%; monitoring by an independent commission; low sanctions for missing emission targets. Results are based on a regression of respondents' rating of agreements with randomly assigned agreement features. The rating was measured by respondents' answers to the following question: “If you could vote on each of these agreements in a referendum, how likely is it that you would vote in favor or against each of the agreements? Please give your answer on the following scale from definitely against (1) to definitely in favor (10).”" The rating has been linearly rescaled from the original domain to the set [0, 100]. See the SI text for details.

	(1) X=High Environmentalism	(2) X=Left Ideology
Costs		
Baseline: Costs 0.5% of GDP		
Costs 1% of GDP	-0.114***	-0.087***
	(0.010)	(0.011)
Costs 1% of GDP*X	0.026**	-0.017
	(0.012)	(0.013)
Costs 1.5% of GDP	-0.199***	-0.163***
	(0.010)	(0.011)
Costs 1.5% of GDP*X	0.046***	-0.011
	(0.013)	(0.013)
Costs 2% of GDP	-0.297***	-0.266***
	(0.010)	(0.011)
Costs 2% of GDP*X	0.051***	0.002
	(0.013)	(0.013)
Costs 2.5% of GDP	-0.374***	-0.329***
	(0.010)	(0.011)
Costs 2.5% of GDP*X	0.064***	-0.005
	(0.013)	(0.013)
Distribution		
Baseline: Only rich countries pay		
Prop. to current emissions	0.072***	0.094***
	(0.009)	(0.010)
Prop. to current emissions*X	-0.009	-0.040***
	(0.012)	(0.012)
Prop. to history of emissions	0.053***	0.091***
	(0.009)	(0.010)
Prop. to history of emissions*X	-0.000	-0.057***
	(0.012)	(0.012)
Rich countries pay more	0.038***	0.058***
	(0.009)	(0.010)
Rich countries pay more*X	0.033***	-0.002
	(0.011)	(0.012)
Participation		
Baseline: 20 out of 192 countries		
80 out of 192 countries	0.038***	0.081***
	(0.008)	(0.008)
80 out of 192 countries*X	0.086***	0.017*
	(0.010)	(0.010)
160 out of 192 countries	0.074***	0.133***
	(0.008)	(0.009)
160 out of 192 countries*X	0.130***	0.034***
	(0.010)	(0.010)
Baseline: 40% of current emissions		
60% of current emissions	-0.007	0.013
	(0.008)	(0.008)
60% of current emissions*X	0.046***	0.015
	(0.010)	(0.010)
80% of current emissions	0.005	0.029***
	(0.008)	(0.008)
80% of current emissions*X	0.063***	0.025**
	(0.010)	(0.010)
Enforcement		
Baseline: No sanction		
Low sanction	0.006	0.023**

	(0.009)	(0.010)
Low sanction*X	0.035***	0.009
	(0.011)	(0.012)
Medium sanction	-0.059***	-0.029***
	(0.009)	(0.010)
Medium sanction*X	0.065***	0.016
	(0.011)	(0.012)
High sanction	-0.104***	-0.084***
	(0.009)	(0.010)
High sanction*X	0.081***	0.045***
	(0.011)	(0.012)
Baseline: Your government		
Indep. Commission	0.030***	0.033***
	(0.009)	(0.010)
Indep. Commission*X	0.049***	0.042***
	(0.011)	(0.012)
United Nations	-0.031***	-0.022**
	(0.010)	(0.010)
United Nations*X	0.087***	0.068***
	(0.012)	(0.012)
Greenpeace	-0.056***	-0.080***
	(0.009)	(0.010)
Greenpeace*X	0.079***	0.107***
	(0.012)	(0.012)
X	-0.251***	-0.073***
	(0.017)	(0.018)
Constant	0.673***	0.564***
	(0.014)	(0.015)
N	67’992	68’000

Table S4.

Interaction Tests for Environmentalism and Ideology. This table reports estimates of the effect of randomly assigned agreement features and interactions with binary indicators for high (vs. low) levels of environmentalism and left (vs. right) ideology on the probability of supporting an agreement. Estimates are based on the regression of *Agreement Support* on dummy variables for values of the agreement dimensions and environmentalism or ideology, respectively, together with a full set of interactions between agreement features and environmentalism or ideology, respectively. Standard errors reported in parentheses are clustered by respondent. Environmentalism is measured by asking individuals: “As you probably know, many experts say that countries have to reduce their greenhouse gas emissions to address global warming. Generally speaking, how strongly do you support or oppose international cooperation to reduce greenhouse gas emissions even if this involves significant costs?" Answers were given on a scale from 1 (“strongly support”) to 5 (“strongly oppose”) and converted into an indicator variable (*High Environmentalism*) that equals one for those who support or strongly support international climate cooperation and is zero otherwise. Ideology was measured using the following question: “In politics people sometimes talk of ‘left’ and ‘right.’ Where would you place yourself on this scale, where 0 means the left and 10 means the right?” Answers were converted into an indicator variable (*Left Ideology*) that equals one for those with answers smaller than the median response (which was 5) and is zero otherwise. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.