

# **Effects of Civil Society Involvement on Popular Legitimacy of Global Environmental Governance**

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## **Supplementary Content**

### ***Treatment materials***

#### **Introduction to climate negotiation scenario (same for all experiments):**

Carbon dioxide emissions (pollution) from power plants, industry, cars, households, and other sources are leading to higher temperatures around the world. Higher temperatures, commonly called global warming, could have severe consequences for people and nature in most countries.

This is why countries from around the world have been negotiating for several years to reach an agreement (an international treaty) that could help to solve the global warming problem.

Reducing emissions of carbon dioxide is costly and could reduce a country's economic growth. If an international agreement on global warming is reached, and *#respondent's home country#* joins this agreement, *#country#* will have to reduce its emissions of carbon dioxide.

This means that an international agreement on global warming could have important consequences for *#country#*.

#### **"Process"-treatment in experiment 1:**

Your country has decided to participate in the negotiations and therefore has to send a delegation to the international climate conference.

There are some political scientists who are experts on the topic of international negotiations. They have found out that there are a few characteristics that such negotiations should fulfill in order to be of high democratic quality. Particularly, they stress the following two aspects:

- Negotiations should be transparent: people should receive accurate information of what happens during the negotiations and what the result is
- Different political opinions within a country should be represented in a balanced and fair manner at the negotiations

#### **"Outcome"-treatment in experiment 1:**

Your country has decided to participate in the negotiations and therefore has to send a delegation to the international climate conference.

There are some political scientists who are experts on the topic of international negotiations. They have found out that there are a few characteristics that such negotiations should fulfill in order to be of high democratic quality. Particularly, they stress the following two aspects:

- Delegations should have good negotiation skills and experience, so they can reach an agreement that is good for the country they represent

- Participants should have good knowledge and expertise in the topic that is discussed in the negotiations, so they can reach an agreement that actually helps in solving the respective problem.

### Task instruction for experiment 1:

You are responsible for setting up the delegation that your country will send to the climate negotiations. Your task is to choose five people who will lead this delegation. You can select them from a list of organizations from your home country you see below.

The list included the following (randomly ordered):

Environmental organization; Consumer rights organization; Association of youth organizations; Chamber of commerce; Association of private businesses; Research institute, funded by private companies; Leading university in #country#; Independent research institute (think tank); Environmental consulting firm; Ministry for the environment; Ministry of economic affairs; Ministry of foreign affairs; Ministry of finance; Ministry for science and technology; Parliament's/Congress's environmental committee

### “Mixed” treatment in experiment 2:

#country# has sent a delegation to the international conference on global warming. This delegation is authorized to negotiate an international agreement on behalf of #country#. The delegation is led by six people: three high-ranking persons from the government and three high-ranking persons who are not from the government.

The three persons who represent the government of #country# are from:

- the ministry of foreign affairs
- the ministry for the environment
- the ministry of economic affairs

The other three persons, who are not from the government, are from:

- the largest non-governmental environmental organization of #country#
- the largest association of private businesses of #country#
- a top university of #country#

### “Government-only” treatment in experiment 2:

#country# has sent a delegation to the international conference on global warming. This delegation is authorized to negotiate an international agreement on behalf of #country#. The delegation is led by six high-ranking members of the national government.

The six persons who represent the government of #country# are from:

- the ministry of foreign affairs
- the ministry for the environment
- the ministry of economic affairs

Additional to the stimulus texts, subjects received a stylized graphical depiction of the respective delegation (Fig. S1). The ENGO, business, and science treatments in the follow-up part of experiment 2 were phrased identical to the mixed treatment above, except that the description of the civil society representatives varied. The images of the delegations were adapted accordingly. We maintained the 3+3 composition to

prevent potentially confounding effects from altering the size and government-to-civil-society ratio across treatment conditions.

### Treatments in experiment 3:

For experiment 3 we used adapted versions of the mixed and government-only treatments from experiment 2. In the first stage, the treatment was changed to include the following information:

Since international negotiations on global warming started several years ago, #country# has sent a delegation to those negotiations. [...] The delegation has always been led by [...]

In stage 2, the opposite treatment of stage 1 was presented to the respective group, preceded by:

This year, #country# changed its policy regarding the composition of delegations to international negotiations. [*Exclusion treatment*:] From this year on, non-governmental organizations can not be included in delegations. [*Addition treatment*:] From this year on, delegations will also include representatives of non-governmental organizations.

### Robustness test: different modes of civil society involvement:

We used the “mixed” treatment from experiment 2 (without graphical stimulus material), which we here refer to as “natdeleg”. The other treatment conditions stated that the national delegation consisted of several government officials, and described the involvement of civil society actors in the following ways:

- Before the international negotiations on global warming started, the government of #country# held extensive consultations with many non-governmental organizations in #country#, such as environmental organizations, business associations, and universities. In these consultations, non-governmental organizations had the opportunity to express to the government their interests and concerns with respect to global warming. The non-governmental organizations also had the opportunity to recommend what the government should do in the negotiations about global warming. [“consult”]
- In addition, many non-governmental organizations, such as environmental organizations, business associations, and universities, are attending the negotiations as observers. As observers, non-governmental organizations can organize events of their own alongside the meetings of government delegations, for example press conferences, workshops, or demonstrations. At these events, non-governmental organizations can express their interests and concerns with respect to global warming and recommend what governments should do about global warming. They can also be present in many meetings of government delegations, but they do not have the right to speak in those meetings, and they cannot take part in decision making. [“observers”]
- In addition, many non-governmental organizations, such as environmental organizations, business associations, and universities, are attending the negotiations. These non-governmental organizations take part in most meetings of government delegations. They have the right to speak in those meetings and suggest topics that should be discussed. They can also make proposals for policies that should be part of an international agreement on global warming.

This means that they can express their interests and concerns with respect to global warming and recommend what governments should do about global warming.  
[“extrights”]

The complete survey questionnaires are available from the authors upon request.

### ***Survey experiments and potential alternative methods***

Our main research objective is to identify a causal effect – that of civil society involvement on popular legitimacy. Experiments are the best available method to isolate and identify causal effects due to two distinctive features of this approach: experimental control, enabling scope conditions and experimental setting to be kept equal or very similar for every participant; and random assignment of treatments, ensuring that receiving a particular treatment does not depend on any potentially confounding factors (Druckman et al., 2011; Morton and Williams, 2010).

Many studies examine public opinion on climate change and climate policy based on conventional surveys (Brechin and Bhandari, 2011 provide an overview). This approach is very useful if the research objective is to obtain a descriptive picture of public opinion that is representative for a given country. Without an experimental design embedded in the survey, however, it is not possible to validly identify the causal effect of a specific factor (like civil society involvement) on a specific part of individuals’ opinion (like popular legitimacy) - standard survey data only allows for the analysis of correlations.

The existing literature also includes a number of studies that investigate preferences and opinions of participants in the UNFCCC climate negotiations (from official delegations as well as observer organizations), both through surveys (Karlsson et al., 2012; Karlsson et al., 2011) and through in-depth, open-format interviews (Stevenson and Dryzek, 2012). This approach is commonly called “stakeholder survey”. The views of some of these participants may well be more consequential for the negotiation process than the views of the average citizen. However, our goal in this paper is to study the effect of civil society involvement on public opinion.

The three approaches (conventional surveys, stakeholder surveys, survey experiments) are clearly complementary. Which approach is more appropriate depends entirely on the research question and the purpose of a given piece of research. In our case, the focus on causal effects of civil society involvement on popular legitimacy of global climate governance clearly speaks in favor of a survey experiment.

### ***Potential selection bias through the use of Mechanical Turk***

Our samples are not representative for the population of any given country. As we are interested in experimental treatment effects, and not in a representative picture of public opinion in certain countries, this does not affect the internal validity of our research design per se. As argued in the main text, using convenience samples could bias our estimates and call into question the external validity of our findings only if the treatment effect we are interested in was heterogeneous, in the sense of being moderated by certain characteristics of participants, and if our convenience samples were heavily biased with respect to such moderating variables. Based on the robustness tests presented in section 4.4.1 (main text), we can rule out this possibility.

However, selection bias in demographic characteristics might limit the generalizability of our findings. In this section, we briefly address potential biases in our samples and the degree to which they affect our results. As 88% of our respondents are from the US or India, we focus on these two countries.

First, younger people might be more likely to be active in an online labor market, and younger people might be more likely to support environmental NGOs or distrust their national government. The median age of participants from India across all three experiments is 26, which is close to India's population median age of 25 (Central Intelligence Agency, 2012). The median age of our US samples is 31, which is 6 years below the US population median (*ibid.*). We are able to assess the effect of that bias to some degree by using it as a control variable in our estimations of treatment effect sizes (section 4.2 in main text). The regression coefficient for age turns out insignificant in every regression, which leads us to conclude that the effect of the age bias in the US sub-sample on generalizability is minor, if anything.

Second, participants recruited via Mechanical Turk might have a lower than average income, as the small cash payments they can earn there may be more attractive to poorer people. Poorer respondents could in turn be more likely to hold an unfavorable attitude toward business, for example. The median income category reported by our US participants is 31,000 to 40,000 USD, and thus roughly similar to the population median of around 29,000 USD (US Census Bureau, 2012). Median income of our participants from India (equivalent to 180 USD based on purchasing power parity) is tremendously higher than the median population income of 2 USD (World Bank, 2012). This reflects above all the lack of internet access of India's poorer social strata. This means that our results reflects the opinion of upper and middle class members in the case of India. We do not regard this as a disadvantage because these parts of society are more likely to be the opinion leaders in the country and thus influence political decisions.

Third, people who are active in an online labor-market might be more computer-literate and more educated than the general population. There are considerably more respondents with college degrees or higher in our samples than in the population of both the US and India. Higher education is likely to lead to more sophisticated political views in general, and climate policy in particular. In our robustness tests in section 4.4.1 (main text) we split our sample according to respondents' knowledge of the climate policy debate – arguably the most directly relevant individual variable that is likely to be influenced by education. We found that treatment effects on respondents with higher knowledge of climate policy issues were not different from those on the full sample.

Whether the predominance of respondents from the largest and second-largest democracy in the world introduces a bias towards more favorable views on civil society is hard to judge. One could as well argue that citizens of authoritarian states are more concerned about the low responsiveness of their governments to public demands and perceive a greater need for civil society involvement. Hence we might expect a stronger impact of more civil society involvement in non-democracies. Absent empirical evidence on this issue (we are in fact planning to conduct a survey on this issue in China next year), when interpreting our results it should be stressed that they reflect above all individual preferences in *democratic* countries.

### ***Estimation of treatment effect sizes***

To estimate the magnitude of average treatment effects we use the Clarify package in Stata (King et al., 2000; Tomz et al., 2003). We reduce the original 5-point scale of the response items to a 3-point scale. We then estimate ordered logistic regressions with our four response items as dependent variables, a dichotomous treatment indicator as the independent variable, and a set of control variables (which are discussed in main text).

Using the posterior regression parameters for a Monte Carlo simulation, we estimate first differences for the probability of responding “agree” or “strongly agree” to each item between the mixed and government-only treatment. We run 1000 simulations for each regression and set control variables to their medians or means, respectively. The estimated first differences represent the average treatment effect of the mixed treatment.

### ***References***

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### ***Supplementary Tables and Figures***

*Table S.1*

*Table S.2*

*Table S.3*

*Figure S.1*

*Figure S.2*

*Figure S.3*

*Figure S.4*

### ***Supplementary Table legends S.1 – S.3***

Table S.1: Estimates of average treatment effects at different levels of government trust, and at different levels of preferences for environmental protection vs economic growth. Each cell shows the estimated average treatment effect (first difference for prob(“agree/strongly agree”) between mixed and government-only treatment) and 95% confidence intervals.

Table S.2: Results for pooled data for the first and second part of experiment 2. T=1: mixed condition; T=0: government-only condition.

Table S.3: Different forms of civil society involvement: between-group differences. Each cell shows the value of the rank-sum test z-statistic and the corresponding p-value.

***Supplementary Figure legends S.1-S.4:***

Fig. S.1: Example of graphical stimuli used in experiment 2. Panel A was shown in the “mixed” condition; panel B in the “government-only” condition.

Fig. S.2: Experiment 2 (dichotomous design): Overall distribution of responses to each item across both treatment conditions (mixed and government-only).

Fig. S.3: Experiment 2 (follow-up part): Distribution of responses by treatment group. Panel A compares business and government-only conditions; panel B compares business and mixed conditions. Reported on the right are z-statistics of rank-sum tests for differences between groups and corresponding p-values.

Fig. S.4: Experiment 2 (follow-up part): Estimated average treatment effects of the “business” treatment compared to “government-only” (Panel A) and “mixed” (Panel B) treatment conditions. Points denote mean first differences between the “business” and “government-only” (respectively, “mixed”) groups in the probability to respond “agree” or “strongly agree”. Lines with whiskers denote 95% confidence intervals of the estimated first differences. At the dotted line the effect the probability to agree is zero. Effects are mostly different from zero and negative.