

Simple re-framing unlikely to boost public support for climate policy

Ambitious policies for limiting climate change require strong public support^{1,3,12,15,16,19,20,29}. But the public's appetite for such policies, as currently observed in most countries, is rather limited^{3,27}. One possibility for enhancing public support could be to shift the main justification in the public policy discourse on greenhouse gas (GHG) mitigation from benefits of reducing climate change risks (the conventional justification) to other types of benefits. Technological innovation and green jobs, community building, and health benefits are widely discussed candidates^{2,5,9,10,11,14,17,21,26}. The intuition is that re-framing GHG mitigation efforts and their benefits in such terms could make them more personally relevant and more emotionally engaging and appealing to citizens^{28,25}. However, based on results from two survey embedded experiments (combined N=1664), and in contrast to some earlier studies, we conclude that simple re-framing of climate policy is unlikely to increase public support, and outline reasons for this finding. As the added value of other justifications remains unclear at best and potentially nil, sticking to climate risk reduction as the dominant justification seems worthwhile.

In many if not most countries, rapid progress towards a low carbon economy appears technically feasible, but *politically* impossible. Strong worries among elites and citizens about negative effects on economic growth and lifestyles, discounting of future benefits of greenhouse gas (GHG) emissions mitigation, and concerns about freeriding by other countries spoil the public's appetite for ambitious mitigation measures³. For instance, as observed in a recent survey, concern in the United States (the largest per capita GHG emitter globally) regarding climate change and its impact is the lowest among 40 countries in the study²⁷. However, without strong public support, ambitious climate policy is infeasible since mitigation measures are bound to have important and manifest implications for nearly every citizen. Therefore, democratic policy-makers face strong incentives to adopt policies preferred by the majority of voters^{3,29}.

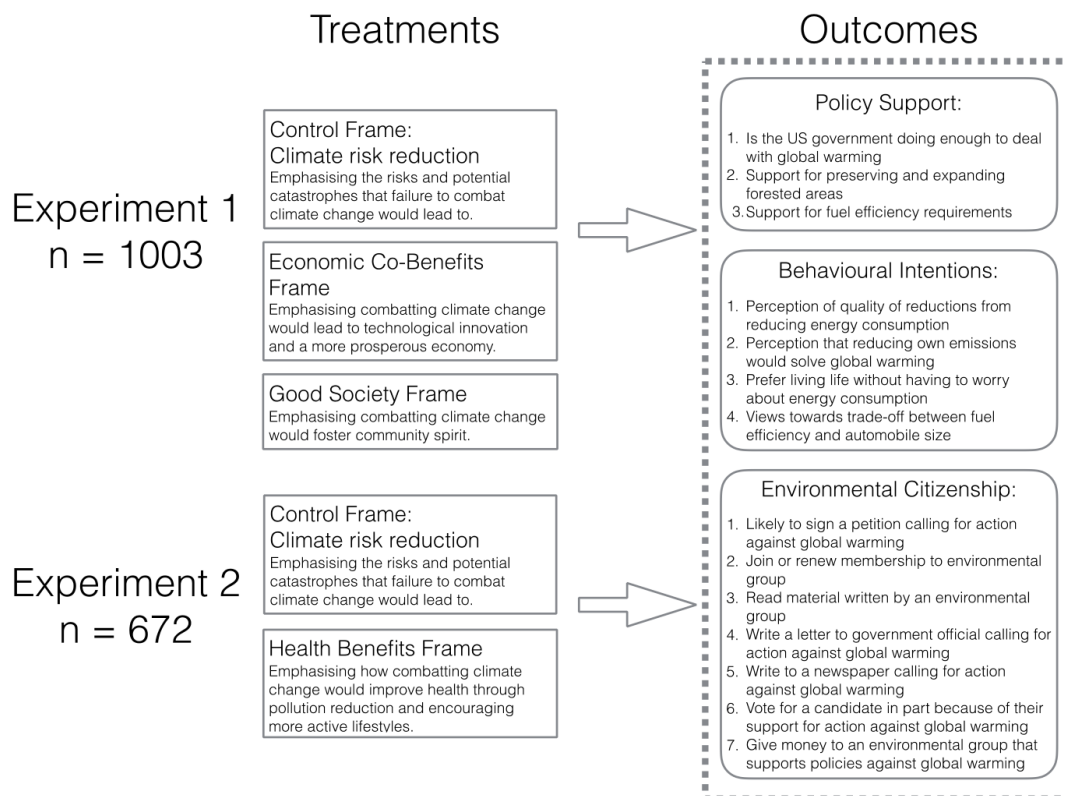
Current efforts to conceptualize climate policy in terms of preventing a tragedy of the commons (dangerous global warming) and focusing on fair burden sharing among nations to produce a global public good does not seem to win people's hearts and minds. The implications of modest to low domestic public support are obvious at the international level too: governments are locked into cumbersome distributional bargaining over lowest common denominator mitigation targets, and the enthusiasm in frontrunner countries (above all in Western Europe) also appears to wane.

How could public support and thus political feasibility at domestic and international levels be increased? Various scientists and commentators have suggested re-framing climate policy from an effort to reduce or avoid climate change risks to either an effort to accelerate a major technological transition that will foster innovation and create green jobs, or to an effort to protect the public

from climate change-induced health hazards. Could such re-framing increase the public’s appetite for ambitious climate policy?

Existing research has produced some evidence for such “emphasis framing effects”⁶, that is, effects on public opinion of highlighting particular purposes and benefits of reducing GHG emissions^{5,14}. Building on this research (most notably^{2,9,10,11,17,21,26}) we carried out two experiments (combined N=1664) with participants from the United States (Figure 1).

Figure 1: Emphasis-Framing Experiments

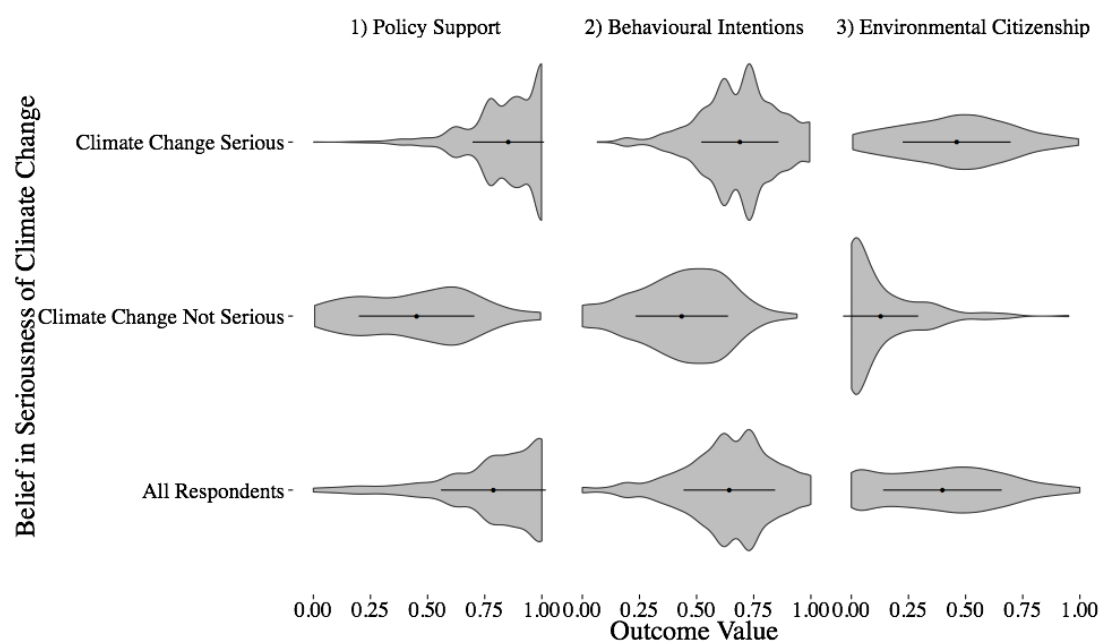


As illustrated in Figure 1, participants were randomly assigned to texts that justified (framed) climate policy in terms of having different types of benefits: climate risk reduction, economic co-benefits, community building, and health benefits respectively. Support (or opposition) to climate policy was measured based on three composite variables, each of which was constructed based on a set of survey items (see section 1 in the SI for full details).

The data shown in Figure 2 suggests interesting variation when the three measures are compared. Top-down efforts to mitigate climate change, as captured by the policy support measure, receive stronger support than requirements for citizens to become more actively engaged in mitigating GHG emissions, as captured by the behavioral intentions and environmental citizenship measures. Also, we find that those who do not believe climate change is a serious problem are overwhelmingly against active personal engagement. Nevertheless, a considerable share of these respondents support active climate policy by the government, suggesting some maneuvering room even amongst

those who do not consider climate change to be a serious problem. Similarly, although respondents who believe climate change is a serious problem are strongly in favor of emissions mitigation policy, the responses for environmental citizenship are much more dispersed. This suggests that many respondents aware of the climate change problem would nevertheless prefer to be passive actors in climate policy. These trends are similar for other measures of climate skepticism and awareness (see section 6 of the SI).

Figure 2: Climate Policy Support: Distribution of three climate policy support measures in both experiments, conditional upon whether respondents believe climate change is a serious problem or not. The overall distribution is also shown for comparison.



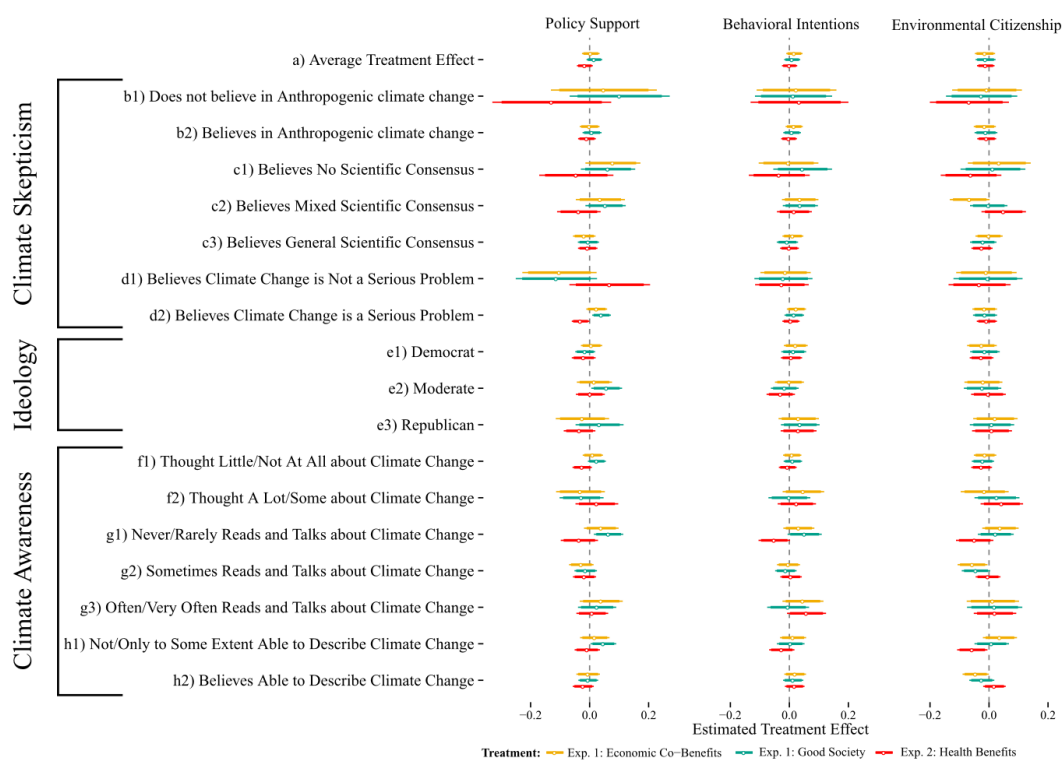
Could emphasizing economic, community, and public health benefits engender more policy support for and active personal engagement in GHG mitigation, as measured by our three composite variables? Can such (re-)framing generate more support amongst those who are skeptical about whether climate change is a serious problem?

Previous research suggests that the effect of emphasis frames, as conceptualized in our study, could be stronger in the case of climate change skeptics². Hence we use a range of survey items to identify individuals in terms of climate skepticism, climate awareness, and political ideology and examine conditional treatment effects (for details of the statistical analysis see section 5 of the SI).

As Figure 3 illustrates, there is very little difference across the treatment conditions in climate policy preferences overall. For each of the three experimental conditions, and each of the three outcome measures, there are no consistent patterns in treatment effects. The average treatment (framing) effects

are very weak, and not statistically significant at conventional levels. Even when exploring potential subgroup effects, such as the differences between climate skeptics and non-skeptics, the treatment effects do not change significantly. Although there are some potentially large treatment effects in the case of policy support – for example amongst people who do not believe climate change is serious in the first experiment – these effects are negative. This result runs counter to the idea that these changes in framing can stimulate support for climate change mitigation amongst those predisposed against it. Even so, these effects are not statistically significant at conventional levels.

Figure 3: Framing Effects: Estimated average treatment effects and sub-group treatment effects based upon respondents' level of climate change skepticism, climate awareness, and party affiliation. Points indicate the estimated effect, lines indicate 95% confidence intervals with the 90% confidence interval in bold.



In summary, we do not find any robust empirical evidence for alternative framing (justification) of climate policy being able to increase public support for GHG mitigation – whether in the sample as a whole or amongst particular groups of participants (such as climate skeptics). This means that our findings do not support earlier results from what in our view is the most relevant prior study of a similar nature². Framing effects are largely insignificant in those parts of our experiments that were deliberately designed to be very similar to the Bain et al. study (frame wording for climate risk, community building, economic co-benefits; environmental citizenship intentions, see Figure 1). The same result obtains when using different response measures that capture climate policy

attitudes and preferences more directly, and adding an additional frame (health benefits).

Where does this leave us? Critics might argue that we simply failed to detect a treatment effect that does exist (often called “type II error”). One could of course modify the frame wordings (treatments) we used – we chose them because we found them quite compelling and they were partly used in a previously published article in this journal. And one could add visually more powerful graphical treatment conditions. Also, using a different sample from the United States or another country could potentially change the results. Although we cannot exclude this possibility, we think that our results reflect conditions that render it difficult, generally, to effectively shift public opinion on climate policy (and probably any environmental policy) through simple re-framing of policy justifications or benefits.

In reality, citizens are exposed to many competing claims (frames and counter-frames) about costs and benefits of different climate policy measures and the need to act against climate change^{4,8,18,23,24}. Depending on prior attitudes, knowledge and interest in climate issues (among other factors) individuals tend to select particular types of information on climate policy issues, as provided by the media, friends, and other sources. This information abundance means that, to varying degrees, survey participants are already “pre-treated” once they enter into a framing experiment. This makes identification of significant framing effects less likely, perhaps with the exception of people who know little about climate change and/or hold weak or ambivalent attitudes on the issue⁷. Hence it is not surprising that framing effects observed in other studies tend to be rather weak and inconsistent, probably with a tendency of many “non-findings” not getting published, and that in our own research such effects are largely absent.

Moreover, a large amount of research shows that climate policy preferences are strongly shaped by factors that cannot be affected or offset through climate change communication per se (e.g. political ideology, income, gender, general social norms, weather or climatic conditions, economic conditions of the respective country^{1,12,15,16,19,20}). And it is precisely those factors that are likely to also influence (self-selected or involuntary) exposure to particular types of climate change information. Existing research shows that people usually select information lining up with prior beliefs and attitudes to preserve their existing worldviews, self-concept, and self-worth²², or to sustain beliefs that are in line with prevailing values, ideologies, and beliefs in their social network¹³.

In brief, there is sufficient evidence to presume that individuals’ climate policy attitudes are strongly shaped by the pre-treatment environment and various personal predispositions, and that this tends to “immunize” experimental participants against simple information treatments.

So, what are the odds that shifting the main justification for greenhouse gas (GHG) mitigation from benefits of reducing climate change risks to other types of benefits would increase political support for and thus the political feasibility of ambitious GHG mitigation measures? Our findings point to major uncertainty in this regard, and to a need for more research based on more elaborate experimental designs. Such experiments would have to pitch particular frames and counter-frames against each other. They would have to focus on how

different combinations of frames (rather than receiving a single frame as a treatment) affect public support. They would have to control for individuals' self-selection of information. Such experiments could also include visual frames, which might have a stronger effect than text messages.

Pending that, and based on what we know to date, policy-makers should keep a strong focus on climate risk reduction as the dominant justification. The reason is that time, money, political capital, and public attention, all of which are needed for re-framing the justification for climate policy in effective ways, are very much limited. This implies a considerable risk that much increased emphasis of other benefits, the public support increasing effect of which remains unclear, could come at the expense of the climate risk-based justification, into which the IPCC, the scientific community as a whole, and most governments and civil society have invested very heavily over the past decades.

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