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Behavioral Economics and Climate Policies

Valentina Stöhr

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"As the reality of climate chaos pounds communities around the world – with ever fiercer floods, fires and droughts – the chasm between need and action is more menacing than ever. Inch by inch progress will not do. It is time for a climate ambition supernova in every country, city, and sector."

UN Secretary-General, António Guterres (November 2023)

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Introduction

The drastic consequences of climate change cannot be denied anymore and the way action on climate protection is taken has to change fast and in a comprehensive manner. The basic requirement for such adjustments in climate action on every level - economically, politically or in the private sector - is that the population accepts the consequences these necessary changes come with. Especially, the approval of sustainable policy changes is crucial, as only a supported national as well as supranational government can realize long term transformations. Contributing to this attainment of the populations' willingness to accept climate change-related (policy) changes is the goal of this thesis. More specifically, the following three questions should be answered: i) what is the impact of the stances on climate policy by the German parliamentary parties on the public opinion on climate protection, ii) how does information on the EU *Green Deal* affect support for its climate policies and iii) what impact do regional compared to national social norms have on public support for EU climate policies?

1.1 Consequences of and action against climate change

The consequences of climate change are no longer questions of if and when and how much - they are already visible around the world today. According to the sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2023), it is undeniable that antrophogenic climate change is causing extreme weather and climate events on a global scale. Currently, around 3.3 to 3.6 billion people are exposed to high risks due to climate change. Especially the countries and regions of the word that historically contributed the least to human-made climate change are suffering the most under its consequences (Birkmann et al., 2022; Althor et al., 2016; Levy and Patz, 2015). But even in the more industrialised countries like the US or the EU member states, climate extremes have visible effects like an increase in heat-waves, precipitation, floods and droughts (Tabari, 2020; Perkins-Kirkpatrick and Lewis, 2020; IPCC, 2023).

These observable effects of climate change impressively show that action has to be taken urgently and in a comprehensive manner. But how can actual change really be accomplished? The basic requirement for such change on every level - economically, politically or in the private sector - is that the population accepts the consequences these necessary changes come with. Without such acceptance, companies have no incentive to make their products more eco-friendly, as no one will buy them. Governments do not change their policies as they worry about not being re-elected and people do not change their daily habits as it might be inconvenient to do so.

An important factor in gaining this acceptance is the employment of behavioral sciences as noted in a special report of the IPCC (De Coninck et al., 2018). According to the report, the success of newly implemented policies depends strongly on psycho-social factors and the context these policies are presented in - which also means different approaches for different regions. Additionally, the importance of a government's united stance on climate change and the harm, anti-climate action statements by political

elites can do, is pointed out. Furthermore, the report mentions the importance of social support and acceptance for people to adapt their beliefs and behavior.

What this report clearly shows is that while most governments are themselves relying on the support of the population, they are also the ones that have huge leverage in accelerating the increase in this support. Not only do they affect the public and thus every citizen as well as the economy directly via their polices but they can also indirectly change the way people and companies think about the problem of climate change by reshaping the information they provide.

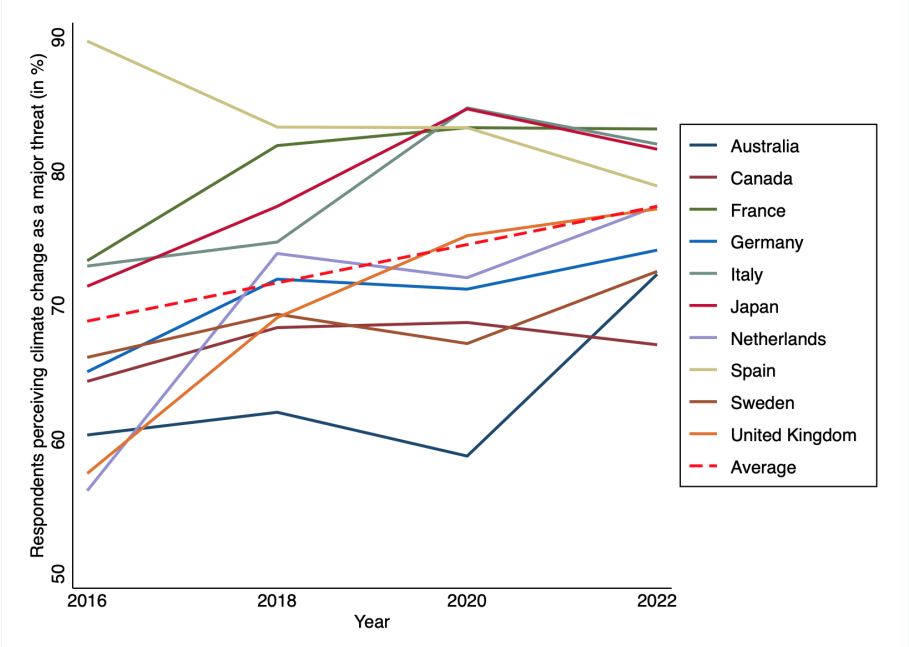
This information shaping can also be called nudging. Nudging happens when a person's set of choices is altered in a way that does not forbid any option or significantly change this person's economic incentives (Thaler and Sunstein, 2008). Due to the lack of necessity for prohibitions and large financial investments, nudging became a more and more popular tool for governments around the world (Benartzi et al., 2017). Countries like the Netherlands, the US, Singapore or Germany implemented so called "nudge units". These are made up by experts in behavioral sciences trying to design behavioral interventions. According to Benartzi et al. (2017), they prove valuable as these interventions are often more cost-effective than traditional tools that typically rely on financial incentives. Yet, the authors point out that while the implementation of nudge units is a huge step forward, more work on nudging should still be done. Additionally, considering that these units mostly focus on changing people's direct behavior and choices, the question still remains: how can governments implement their policies in a way that increases public support for them?

1.2 Politics, policies and the public

Just like the consequences of climate change are a global phenomenon, the discussion about it's existence, consequences and actions to be taken against it is lead in almost every country of the world. However, the point this ongoing

discussion is currently revolving around varies substantially from one country or region to the next. An extensive comparison of the situation in 134 countries around the globe came to the conclusion that the debate on climate change in every country is almost as unique as the country itself (Levi, 2021a). While, for example, in the USA the public is still debating whether we have to do something about CO_2 emissions, in Germany the discussion moved on to the efficiency of certain measures that could be taken (Tschötschel et al., 2020). Yet, in China there hardly is any discussion since there is less controversy about the topic. The problem here is that people seem to misunderstand the concept of climate change as a whole (Yang et al., 2021). Thus, while the trend over the last few years has moved towards a higher threat perception, whether climate change is perceived as a threat still varies strongly between countries, as can be seen in Figure 1.1.

Figure 1.1: Public opinion on threat level of climate change



Notes. The figure is based on the answers of at least 989 respondents per country and year. Source: Pew Research Center Survey Data 2016, 2018, 2020 and 2022 (Pew Research Center, 2016, 2018, 2020, 2022).

Especially when it comes to such complex topics as the one of climate change, people are often looking for leadership (Kousser and Tranter, 2018). Thus, in these national debates on climate change politicians and governments play a crucial role. On the one hand, because people have a tendency to follow their political leaders in their opinions. The literature shows that, at least in Western democracies, individual belief in climate change is strongly driven by political orientation (Levi, 2021a; Hornsey et al., 2016; Lewis et al., 2019). On the other hand, because political elites are, at least partly, responsible for how climate change is perceived in their country. Levi (2021a) finds strong regional effects in belief in antrophogenic climate change for East Asia. The author explains this effect by referring to several studies that show that East Asian governments are rather proactively communicating about climate change (Aoyagi, 2017; Ho and Chuah, 2017; Kim et al., 2017). Additionally, Sohlberg (2017) shows that in countries where political parties have a higher consensus on supporting environmental issues, climate change is seen as a higher threat than in countries where parties are more divided on the issue.

These examples show that, firstly, the public's perception of climate change differs greatly from country to country and from region to region. Secondly, they also indicate that there is a strong interrelation between the perception of climate change and a countries political leaders. Yet, most of the research in this area has been done in Western English-speaking countries and more specifically the USA (Stoeckel and Kuhn, 2018; Levi, 2021a). While this shows the enormous lack of knowledge on countries in the Global South, it also shows that there is still potential for new information about non-English speaking countries in other parts of the world. Especially the interrelation between politics and climate change in Europe - or more specifically the European Union (EU) - is important to be examined in more detail. After China, the USA and India being a close call, in 2019 the EU had the fourth biggest greenhouse gas (GHG) emissions in the world with a share of 7.3 percent of worldwide emissions (European Commission, 2023b). Yet, the political system in the Western English-speaking world is quite different to the systems in most EU countries. The USA, the United Kingdom and Australia

are basically two-party systems with the Democrats and the Republicans in the US, the Labor Party and the Conservative Party in the UK and the Labor Party and the Coalition in Australia. In the EU however not only the member states themselves but also the European Parliament are made up of multiple parties ranging from far left to far right (Zulianello, 2020). Thus, considering that multi-party systems work differently and political orientation is far more complicated in such systems (Nordø, 2021), the knowledge gained from the US, the UK and Australia is hardly sufficient to analyse the situation in Europe. Additionally, the EU is a special case given that the European Parliament represents a supranational institution. Especially in the case of climate change with its global consequences, international cooperation gained more and more importance. From the IPCC which was founded in 1988 over the United Nations Climate Change Conferences (COPs) starting in 1995 to the Paris Agreement from 2015: action against climate change is international. Thus, peoples' perception of this supranational work and improving public support for intergovernmental policies is a topic worth of more research.

The EU is currently made up of 27 member states. Thus, in order to get a detailed picture of the mechanisms behind the interrelation of politics, policies and the public this thesis focuses on only one member state, namely Germany. Within the EU, Germany is by far the biggest GHG emitter with a share of almost 20 percent of the EU's emissions in 2019. For comparison, France being the second biggest emitter only had a share of 11 percent.[1] At the same time, Germany also is the biggest economic contributor to the EU making up one quarter of the EU's GDP in 2020.[2] Therefore, Germany is an interesting case to find out more about citizens' perspective on their national as well as supranational governments and how these governments deal with the topic of

[1] More information on GHG emissions by country within the EU can be found on the website of the European Parliament: `https://www.europarl.europa.eu/news/en/headlines/society/20180301STO98928/greenhouse-gas-emissions-by-country-and-sector-infographic`; last visited 09/12/2023.

[2] More information on the GDP by country within the EU can be found on the website of eurostat: `https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211220-1`; last visited 09/12/2023.

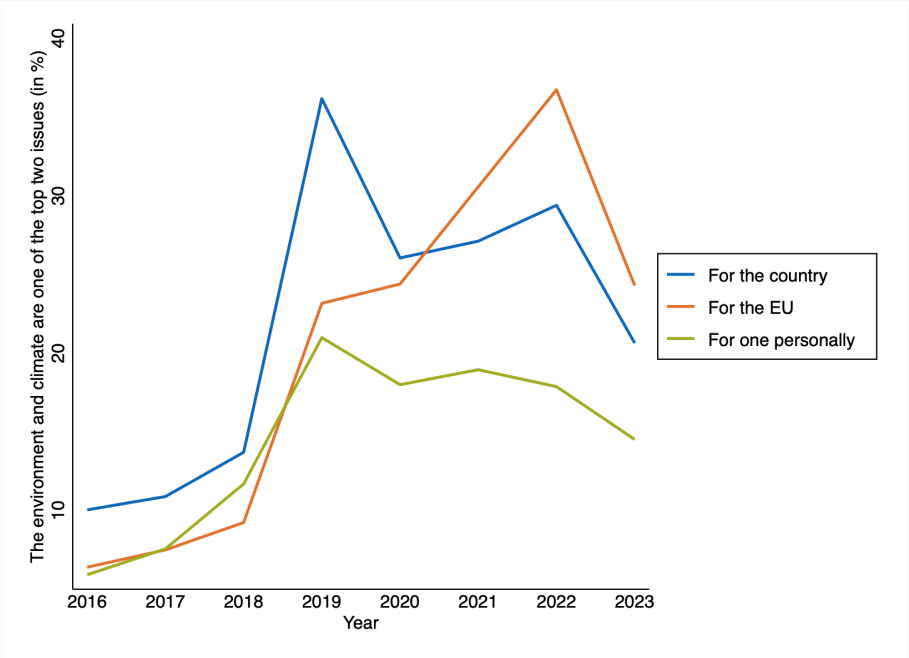
climate change.

1.3 The perception of climate change and climate policies in Germany

As pointed out in the sixth Assessment Report of the IPCC, governmental action on the sub-national, national as well as international level is fundamental to transform our society into one that is sustainable and future-proof (IPCC, 2023). Asking the German population reveals that they agree with this assessment, with about 60 percent considering action against climate change most efficient when it comes from both the EU as well as the German government (European Commission, 2022a). In line with this support for national as well as international measures to be taken for climate protection, Figure 1.2 shows that the share of people perceiving the environment and climate as one of the top two issues for both Germany and the EU has increased by 10 to 20 percentage points within the last decade and is now at an almost equal share of 25 percent for both governmental institutions.

Asking respondents how they feel about climate change specifically, a clear picture emerges. According to the *Politbarometer* of 2021, 86 percent of respondents perceive climate change as a big or very big problem for Germany, 67 percent say that not enough measures against climate change are being taken and 87 percent claim that climate change is important or very important for their voting decision (Forschungsgruppe Wahlen, 2022). These numbers are in line with the results of the experiments within this thesis: from the 15,000 respondents interviewed in 2021, 80 percent think that the risks of climate change are rather high or very high and 74 percent completely agree or rather agree with the statement that climate change worries them. Furthermore, an *Eurobarometer* survey of 2022 reveals that 77 percent of respondents find it very or fairly important that Europe becomes the first climate-neutral continent by 2050 (European Commission, 2022b).

Figure 1.2: Public opinion on the priority of the environment and climate



Notes. The figure is based on the weighted answers of at least 1,487 respondents per year. Source: Eurobarometer 2016 to 2023 (European Commission, 2016a, 2017, 2018, 2019, 2020, 2021, 2022a, 2023a).

At first glance, these findings suggest that research on increasing support for climate policies and climate protection might be futile. Yet, going into more detail, two major problems with this inference occur. Firstly, other issues consistently seem to be more important than climate protection. Looking again at Figure 1.2 reveals that in recent years with the COVID-19 pandemic beginning in 2020 and especially the war in Ukraine starting in 2022, the priority of environmental and climate change related topics not just stagnated but even declined. In 2023, the environment and climate was overall ranked as the fourth most important issue for Germany after rising prices and inflation, energy supply and the international situation. For the EU, respondents listed this issue in third place, again after rising prices and inflation and energy supply (European Commission, 2023a). Thus, in times of multiple crises climate protection has increasingly been shifting out of the public focus.

Secondly, once the questions turn towards actual changes affecting peoples' expenses, support decreases rapidly. According to the *Public Trust in Expertise in the Context of Climate Change and COVID-19 (PERITIA)* survey of 2022 only 29 percent agree or tend to agree with the statement that they would give part of their income in taxes to help prevent climate change and just 26 percent state that they always or sometimes donate time or money to climate charities while one third of respondents says that they would never do this (Duffy et al., 2023). Looking at the results of the experiments within this thesis a similar picture emerges: 26 percent of the 7,512 respondents asked stated that they would not give any monthly amount to support EU climate policies and 45 percent would only give less than 10 Euro, while support for more ambitious climate policies in the sample of 15,000 respondents decreases by 12 percent on average. At the same time, trust in governmental climate protection is rather low. The *PERITIA* survey reveals that more than half of the respondents believe that the German government is rather incompetent and dishonest when it comes to dealing with climate change and mostly acts in their own interests instead of doing the right thing. For the European Commission about 40 percent of respondents believe that.

Especially, the approval of sustainable policy changes is crucial, as only a supported national as well as supranational government can realize long term changes. Contributing to this attainment of the populations' willingness to accept climate change-related (policy) changes is the goal of this thesis. More specifically, my work attempts to answer the following three questions: i) what is the impact of the stances on climate policy by the German parliamentary parties on the public opinion on climate protection, ii) how does information on the EU *Green Deal* affect support for its climate policies and iii) what impact do regional compared to national social norms have on public support for EU climate policies?

1.4 Information provision experiments

The method of choice used to obtain the results presented in this thesis is the so called information provision experiment. The goal of experiments in the behavioral sciences is typically to change some features of the choice environment to causally study how participants form beliefs and make choices. Information experiments achieve this by varying the information set available to participants. Compared to other experimental methods frequently employed in the behavioral sciences such as defaults or goals and feedback, information provision experiments have the advantage that they are able to generate exogenous variation in the perception of real world environments making it possible to evaluate potential policy support (Haaland et al., 2023). Due to this possibility the number of information provision experiments published in economic journals steadily increased in recent years and according to Haaland et al. (2023) their popularity is going to grow even further.

Information provision experiments have been used in a large variety of fields related to economics (Haaland et al., 2023) and they also seem to be a fitting method to study the interrelation between climate policies and public support as the growing literature on the topic suggests. However, most works also emphasize the significance of well thought out information sets and stress the importance of future research in this area. One of the earliest works concerned with this interrelation already points out the relevance of the type of information provided to the respondents in shaping their policy support. In their experiment, Shwom et al. (2008) provide respondents either with climate change information on the state or national level. While they find a moderate effect of the respondent's resident state, no significant difference between the state and national level information can be found. They point out that these findings contradict conventional thinking, underlining once more the importance of information experiments. Finally, they call for more research on the impact of regional compared to national information provision due to their inconclusive results. This thesis aims to address this problem by implementing an experiment with a large enough number of respondents to

provide conclusive results on the regional level.

Another aspect of climate policy support that has been studied employing information provision experiments is the perception of different types of policies. Rhodes et al. (2017) show that support varies greatly between different types of policies. Yet, they point out that they did not clearly define the methods and actions implied by a certain policy nor its expected emission reductions and call for more research investigating this problem. The experiments presented in this thesis thus include detailed policy descriptions. The authors results also suggest that individual characteristics play a crucial role in policy support. Related insights can be found in more recent work by Huber et al. (2019). In this study, the authors compare support for seven different types of policy measures. They find that polices that are perceived as more effective, intrusive and fair are more highly supported. They emphasise that while they were able to compare a large number of different policies, they could not at the same time look at the calibration of specific policies which they think might influence citizens' support. Additionally, they call for research on policies that are not country specific, in their case Switzerland, but are discussed or implemented in several countries. Thus, some of the experiments within this thesis not only look at the impact of the measures proposed by the EU for all countries within the EU but also look at the effect different levels of carbon pricing have on public support.

Two topics where information experiments prove especially useful are the employment of social norms and the effect of party cues. While there are studies suggesting the influential power of social norms (Cole et al., 2022), information provision experiments also reveal the downsides of such nudging techniques and their potential for backfiring (Rinscheid et al., 2021). Looking at the interrelation of policy support and political cues, a similar picture can be observed. While some results show that statements from political leaders are powerful in changing respondents' opinions in accordance with the cue up to a point that they affect the divisiveness or unity of the population (Kousser and Tranter, 2018), other findings suggest that cues do not work and it is in fact the policy

or ideology that affects respondents' believes (Lelkes, 2021). The results of two of the studies within this thesis, focusing on party cues and social norms respectively, reveal the same paradoxes showing once again that actual human behavior might not be in line with conventional expectations and thus has to be examined with the help of such experiments.

1.5 Contributions

The main body of this thesis is made up of three papers. This section provides an overview of the contribution, methodology and results of each of them. They are discussed in Chapters 2 to 4, respectively. The versions presented in this thesis might differ slightly from the ones submitted to respective journals. This is due to journal-specific guidelines as well as peer-review related changes to the script. However, the relevance, contribution and key results of each paper remain unchanged.

1.5.1 Climate protection in Germany: party cues in a multi-party system

Contribution This paper provides insight into the impact of party cues on the public's desire for climate protection during the COVID-19 pandemic. The mechanisms behind such cues have extensively been debated in the literature. Yet, no clear picture could be derived. One reason for this is that the major explanatory theories and concepts in this field come from political science and psychology while the field of behavioral economics has largely been ignored, even though it promises valuable insights (Wilson, 2011; DellaVigna and Gentzkow, 2010). Another reason is that the literature on party cue effects up until now is mostly based on two-party systems such as the USA (Stoeckel and Kuhn, 2018). Yet, the issue seems to become even more complicated when looking at multi-party systems (Nordø, 2021).

Methodology This work consists of two experimental vignette studies with a sample of 3,000 respondents collected in 2021 and representative of the

German population. The first one elicits the effect of a single party cue on respondents' desire for action to protect the environment and climate during the ongoing COVID-19 pandemic. Respondents first answer nine questions on their perception of environmental and climate protection which are summed up to a score called "desire for action". Then they get to read a statement either labeled to be from a specific party or not and either being in favor of or against more environmental and climate protection during the pandemic. Finally, they answer the aforementioned nine questions again. The second study examines the effect of a pro or a con consensus on climate protection as well as a scenario in which all parliamentary parties disagree on the best policy. Respondents in this study get to read seven different statements, one per party, which are either all in favor of, all against or of mixed opinion on environmental and climate protection during the pandemic.

Results Results suggest that a party statement in favor of more climate protection, especially when all parties can agree on such a massage, is effective in changing participants' opinions. Furthermore, unexpected party cues are more likely to lead to a change in opinion and cause respondents to rely on their knowledge and beliefs about politics and climate change. Yet, participants' knowledge and beliefs only play a tangential role once they receive statements from all political parties. Being uninterested in or denying climate change also means being more impressionable and thus more easily persuaded of the opposing direction.

1.5.2 Public support for more ambitious climate policies

Contribution Within this study, we investigate how a change from existing climate policies to more ambitious policies drives public support. The existing literature on the topic focuses on the support of specific already implemented policies, instead of more ambitious future policies, and finds for example that the public strongly rejects the instrument of carbon pricing (Maestre-Andrés et al., 2019; Rhodes et al., 2017). However, the effect of a potential increase

in prices is unknown Huber et al. (2019). Additionally, empirical evidence that analyzes national public support for supranational emission reduction goals in international emission trading systems is also still missing. Finally, previous studies find that economic preferences such as time and risk preferences or prosociality are correlated with a set of specific pro-environmental behaviors (Newell and Siikamäki, 2015; Schleich et al., 2019). Yet, no evidence on the magnitude of these factors in comparison with other important factors such as hazard experience, belief in climate change or trust in national and international institutions can be found.

Methodology The survey includes a sample of 15,000 respondents collected in 2021 that is nationally and regionally representative of Germany. Within the survey, participants are presented information on current EU climate policies and hypothetical climate goals the EU is supposed to have based on the actual *Fit for 55* plan. After they state their support for these EU climate policies, a change in these goals is introduced. Thereafter, support is asked again, making it possible to examine the change in respondents' opinions as well as their final opinion on the matter. Regarding the nature of the presented climate policies, it is either the case that information on various EU policies is given or the carbon price is introduced as a policy on its own.

Results The results reveal that information about more ambitious climate policies – as for example proposed by *Fit-for-55* – decreases public support. This decrease is stronger if increasing carbon prices are emphasized compared to a policy mix with a focus on the reduction of greenhouse gases. Furthermore, our results show that policy support is substantially associated with economic preferences and other individual characteristics. In addition, we show correlations between regional characteristics and public support for ambitious climate policies.

1.5.3 Regional variation in social norm nudges

Contribution This work contributes to the vast literature in psychology, sociology, and economics that documents the influence of social norms on behavior and preferences (Bicchieri, 2016; Dimant and Gesche, 2023; Fehr and Schurtenberger, 2018). Previous studies have documented the wide variation in social norms across traditional societies and modern societies (Pelto, 1968; Ensminger and Henrich, 2014; Gelfand et al., 2011). The effect of norms on behavior is likely to depend on the cultural and economic context (Triandis, 2018; Inglehart, 2020; Welzel, 2013). Yet, empirical evidence on the interplay between supranational climate policies and regional social norms is missing. This raises questions about the universal applicability of the existing social norm interventions aimed at changing behavior and beliefs. Furthermore, tapping into the regional diversity of social norms allows advancing our understanding of interventions that influence climate policy support and climate change action.

Methodology The first study is the same as the one analysed in the second contribution but with a different focus. As we only look at the treatment group receiving information on various climate polices here, the underlying sample includes 7,191 respondents collected in 2021 and is nationally and regionally representative of Germany. Additionally to the actual support for the EU measures we investigate in the second contribution, in this paper, we also analyse estimated support, i.e. how much respondents think other people support these measures. The second study, conducted in 2022, includes a nationally representative sample of 4,727 respondents. Same as in the first study, all respondents initially receive basic information on climate change and EU climate policies. In a next step, respondents in the national norm treatment see a visual presentation of the national norm of support for these policies. Respondents in the regional norm treatment see the same presentation however containing the regional norm of the respective region they are living in. Respondents in the control group do not see any visual representation nor any indication about a norm. Afterwards, respondents are asked to state their

support.

Results This paper makes three contributions to the literature on social norms and climate policy support. First, we find increasing misperceptions of social norms, i.e., people underestimate others' support of EU climate policies, even more so when these policies become more ambitious. Second, we document substantial regional variation in misperceived social norms. Third, we demonstrate that norm interventions informing about the actual support in society at the national level are more effective in increasing individual support than interventions informing about support at the regional level.

2

Climate protection in Germany: party cues in a multi-party system

Valentina Stöhr[1]

Abstract This paper provides insight into the impact of party cues on the public's desire for climate protection during the COVID-19 pandemic. In particular, the effects of cues from one or multiple parties as well as the mechanisms behind these effects are analyzed. Utilizing the case of Germany's multi-party system, two online survey experiments with a representative sample of the German voting population are conducted. Despite finding rather small effect sizes overall, results show that a party statement in favor of more climate protection is effective in changing participants' opinions towards the same direction. People appear to be even more impressionable when they receive unexpected cues or are lead to believe that all parties work together to fight climate change during the pandemic. Finally, respondents that do not care about or oppose climate protection are more easily persuaded.

[1]The working paper this chapter is based on can be found here: `http://dx.doi.org/10.2139/ssrn.4330958`.

2.1 INTRODUCTION

In 1990 the Intergovernmental Panel on Climate Change (IPCC) published their First Assessment Report concluding that anthropogenic climate change exists. Since then thousands of contributors from all related scientific areas repeated this conclusion in the following five reports and provided concrete advice on how to counteract the consequences. Yet, until today the existence of human-made climate change and if and how it should be approached is still up for public and especially political debate all around the world (Tschötschel et al., 2020).

While the debate about climate change is problematic by itself, it becomes even more complicated once additional crises are added as it is currently the case with the COVID-19 pandemic and the war in Ukraine. Tackling this issue, this paper shows that a statement by a political party when it is in favor of more climate protection during the pandemic is effective in changing the public's' opinion on this topic. This effect even increases once more than one party agrees on such a statement. Additionally, unexpected party cues and being uninterested in or denying climate change means being more impressionable and more easily persuaded.

One reason for the supposed contradiction between scientific evidence and human perception is that politically charged topics like climate change, the pandemic or the war are not simply evaluated based on scientific results and factual information but based on one's own biased beliefs (Kahan et al., 2013; Meffert et al., 2006; Ditto et al., 2019). While especially outside the US and specifically in Europe the existence of climate change is largely accepted as fact, the discussion moved on to the best measures to be taken tackling climate change. Concerning such measures, the problem of biased information processing becomes even more persistent as a recent experiment by Douenne and Fabre (2022) reveals. According to them, pointing out factual information like the broad scientific consensus on the existence of anthropogenic climate change hardly improves respondents' support for a carbon tax. As a

conclusion, they advocate for climate policies that are actually accepted by the public. But how can such policy support and behavior change be achieved?

One's own political stance is an important factor in the information evaluation process, as can be seen from countless examples from all around the world where public opinion on climate change is strongly polarized through party cues (Kousser and Tranter, 2018). The mechanisms behind such cues have extensively been debated in the literature. Yet, no clear picture could be derived. One reason for this is that the major explanatory theories and concepts in this field come from political science and psychology while the field of behavioral economics has largely been ignored, even though it promises valuable insights (Wilson, 2011; DellaVigna and Gentzkow, 2010). Especially when it comes to the credibility of cues and the issue of status quo bias, the typical literature in these fields lacks explanations although both problems are persistently visible in the data (DellaVigna and Gentzkow, 2010; Goodman and Murray, 2007; Mullinix, 2016). Another reason is that the literature up until now is mostly based on two-party systems such as the USA (Stoeckel and Kuhn, 2018). Yet, the issue seems to become even more complicated when looking at multi-party systems (Nordø, 2021). Since many of the biggest industrial nations and at the same time biggest historical polluters are multi-party systems, it is crucial to gain more insight into the interrelation of policy and party in such systems which is why the studies presented in this paper are conducted in Germany. The German parliament has a long history of being a multi-party system. It currently consists of seven parties with vote shares between 5 and 26 percent according to the federal election of 2021.[2]

This paper consists of two experimental vignette studies. The first one elicits the effect of a single party cue on respondents' desire for action to protect the environment and climate during the ongoing COVID-19 pandemic. Respondents first answer nine questions on their perception of environmental and climate protection which are summed up to a score called "desire for action".

[2]More detailed information on the current composition and history of the German parliament can be found on its website: `https://www.bundestag.de/`.

Then they get to read a statement either labeled to be from a specific party or not and either being in favor of or against more environmental and climate protection during the pandemic. Finally, they answer the aforementioned nine questions again. Results suggest that especially a party statement in favor of more climate protection is effective in changing participants' opinions. Furthermore, unexpected party cues are more likely to lead to a change in opinion and cause respondents to rely on their knowledge and beliefs about politics and climate change. Being uninterested in or denying climate change also means being more impressionable and thus more easily persuaded of the opposing direction. The second study examines the effect of a pro or a con consensus on climate protection as well as a scenario in which all parliamentary parties disagree on the best policy. Respondents in this study get to read seven different statements, one per party, which are either all in favor of, all against or of mixed opinion on environmental and climate protection during the pandemic. In this case, again the pro consensus turns out to haven the strongest significant effect while participants' knowledge and beliefs and environmental concern only play a tangential role. In both studies, respondents are additionally asked to decide on a donation in favor of or against more climate protection. However, in both cases hardly any or no significant effect of a change in this donation decision can be found. Yet, considering the persistent opinions people have on the topic of climate change finding even small significant effects is remarkable and a reason to reconsider the way this matter is conveyed by the majority of the German parliamentary parties that do believe that a change in climate policy is imperative.

Tschötschel et al. (2021) also noticed the impact of party cues and employed cues from German politicians into their experiments without finding significantly stronger effects than when only providing factual information on anthropogenic climate change. Yet, this work differs in several accounts. Firstly, the presented experiments include cues from parties instead of single politicians deeming personal sympathies or antipathies for certain politicians irrelevant. Secondly, for each party identical statements are used, making it possible to compare hypothetical scenarios, an approach that is generally

novel for the case of multi-party systems such as Germany. Lastly, this paper includes two consensus treatments looking at the hypothetical scenario of all parliamentary parties agreeing on the best way to tackle climate change.

2.2 Party vs. Policy

The literature on party cues revolves around the conflict of interest between party stances and people's own political opinions, also known as the problem of party versus policy. In other words, this means whether a person rather follows the cue of a supported party or politician or their own beliefs if they do not align. Apparently, the answer to this question is not easily provided as studies on the topic come to rather opposing results (Nordø, 2021).

On the one hand, there is evidence that parties' and politicians' cues are more convincing than one's own convictions (Van Boven et al., 2018; Druckman et al., 2013; Cohen, 2003; Barber and Pope, 2019; Grewenig et al., 2020). On the other hand, some work provides evidence for the impact of policy over party (Lelkes, 2021; Bougher, 2017; Webster and Abramowitz, 2017; Nordø, 2021). This conclusion is based on the assumption that voters rather choose their party according to their own ideology instead of the other way round. Thus, due to the currently increasingly extreme points of view of parties and politicians, the rejection of opposing parties and therefore their ideologies increases (Lelkes, 2021). Finally, Dewan et al. (2014) suggest that both the provided information on a political issue that shapes one's own beliefs as well as statements from politicians are equally important. They even call them substitutes.

These diverse findings can be explained by different theories from the fields of psychology, political sciences and economics. The party over policy thesis often relies upon social identity theory (Van Bavel and Pereira, 2018; Iyengar et al., 2019, 2012; Russell, 2014; Shayo, 2009) which states that people view themselves as part of certain social groups. Once a person belongs to a

specific group, they view said group as their in-group while other groups turn into out-groups. Humans tend to perceive their own in-group as positive and rather believe members of this group while out-groups are seen as negative and something that should be opposed (Russell, 2014). An individual's political orientation can be interpreted as a source of social identity, meaning that once a person relates to a specific political party, they will interpret this party's convictions as more positive and adopt them while opposing other party's stances (Iyengar et al., 2019). Yet, in the environmental context one could also perceive themselves as part of the group of believers or deniers of climate change, making this their respective in-group.

A closely related concept is motivated reasoning (Ditto and Lopez, 1992; Kunda, 1990). Following this theory, new information is either completely ignored or interpreted in a way that the result fits into existing convictions. Accordingly, members of a specific party would be more skeptical of statements from other parties while new information from their own party is more easily accepted (Van Boven et al., 2018; Kahan et al., 2013). However, yet again, the same concept can be true for the issue of climate change as one can have strong prior convictions on this topic as well (Kahan et al., 2012).

Another frequently employed theory in this literature is dual processing. Here, evaluating information either happens heuristically or systematically. While the easier and therefore more commonly used heuristic processing employs party cues as guidelines, systematic processing relies upon the actual content of a political topic (Arceneaux, 2008; Bullock, 2011). Only if a person is motivated enough to accept such an increased mental effort they evaluate information in such a systematic way. This is more likely the case for topics one is personally affected by such as climate change (Boudreau and MacKenzie, 2014).

Finally some important insights on this debate can be found in the field of behavioral economics. While this field has largely been ignored in the context of party cues so far, Schnellenbach and Schubert (2015) argue that political and market behavior should rely on the same assumptions. The first economic

concept that needs to be mentioned is Bayesian updating which is closely related to motivated reasoning. According to this theory, given prior knowledge about a topic new information is considered true with a certain probability. One's own beliefs are then updated correspondingly (Harris et al., 2022). Bayesian processing is used in the belief based models from the literature on persuasion and marketing (DellaVigna and Gentzkow, 2010). Two main propositions of these models are that a message is especially convincing if the recipient is uncertain about the truth and if the the sender is perceived to be credible to the extend that unexpected claims are more informative than typical ones as they make the sender appear more credible (Chiang and Knight, 2011; DellaVigna and Gentzkow, 2010). A second important field of economic literature in this context is on decision making or more precisely decision avoidance (Goodman and Murray, 2007). According to this literature, once the available alternatives lack justification (Anderson, 2003), are too similar (Dhar, 1997) or are perceived as equally valuable (Tversky and Shafir, 1992), people are uncertain about making a decision and stick to the status quo (Goodman and Murray, 2007). In the case of party cues this could for example translate people caring about both a specific party and politics equally but the party they support and the stance they have on a political issue do not match. This would thus lead to them not changing their opinion even though they want to follow their party's cue.

2.3 Study 1: Effect of a single party cue

2.3.1 Research questions

Some of the biggest economies worldwide constitute multi-party systems, such as Germany, France or Italy. This study investigates the effect party cues in such systems have on the public opinion as well as the mechanisms behind them during multiple crises employing the example of climate change and the COVID-19 pandemic.

How do party cues affect peoples' desire for action on environmental and climate protection?

Respondents that do not receive a cue from a party can be assumed to be less influenced by cues than those that are informed about a party stance. This hypothesis is consistent with the literature (Samuels and Zucco Jr, 2014; Boudreau and MacKenzie, 2014). In this study, I not only compare party with no-party cues but additionally the directions of the statement which is novel especially in the multi-party case.

This hypothesis however has to expanded due to the aforementioned evidence on status quo bias (Goodman and Murray, 2007). In my experiment, such bias would translate to participants not changing their opinion if they neither care about climate change nor politics or care a lot about both but the alleged party stance and their own opinion do not align.

How do people change their opinion if the party cue they get contradicts the typical stance they expect this party to have?

So far the sparse literature on party cues in multi-party systems only looked at the effect of factual party stances on the public opinion. However, parties can change their opinion especially on such important topics as climate change as the example of the Republican party in the US shows which only became skeptical of climate change once this topic started to be associated with the Democrats (Van Boven et al., 2018). Thus, in this study it should be examined what happens in the hypothetical scenario of a contradicting party cue. Based on the aforementioned belief based models stating that surprising claims are more informative than typical ones (DellaVigna and Gentzkow, 2010), I derive the supposition that unexpected cues have a larger effect in changing respondents' opinions than expected ones.

What are mechanisms through which party cues influence peoples' opinions on environmental and climate protection?

The first hypothesis regarding this question is again in line with the literature on (Samuels and Zucco Jr, 2014; Carlson, 2016; Barber and Pope, 2019), namely that the more respondents prefer a party, the more effect party cues have on them. While this means that people follow a cue from a preferred party more, the opposite case does not necessarily have to be true. This supposition is best explained employing social identity theory. Albeit the difference between the own in-group, i.e. supported party, and out-group, i.e. opposed party, is easily figured out in a two-party context such as the US, in multi-party systems the out-group is more difficult to determine (Samuels and Zucco Jr, 2014). Thus, when confronted with a cue from another party, one's own or the position of the supported party comes into focus since this other party is not perceived as a clear out-group that can be distinctly opposed.

Finally, according to the literature new information is especially convincing once uncertainty about the truth exists (DellaVigna and Gentzkow, 2010). Thus, participants can be assumed to be influenced by their knowledge and beliefs in such a way that the more convinced they are to know the truth, the less effect political cues will have on them. More specifically, this conviction expresses itself through being politically aware (Kam, 2005; Barber and Pope, 2019), highly educated (Barber and Pope, 2019; Kinder and Kalmoe, 2017), well informed about climate change (Lelkes, 2021) or having strong opinions on the topic of climate change (Barber and Pope, 2019; Bougher, 2017; Webster and Abramowitz, 2017).

2.3.2 Data collection and survey design

The data was collected from the 8th to the 20th of April 2021 and is nationally representative regarding the 16 German federal states, as well as the German age and gender distribution. The 16 minute questionnaire was answered by 2,526 respondents who were recruited by respondi using the surveying platform Qualtrics. As it turned out that some participants filled out the survey

twice, five responses had to be excluded from the analysis. An additional 18 respondents had to be dropped as they stated nonexistent postal codes.[3] For the main results, another 499 people, or 19.9% of the remaining sample, are excluded from the analysis as they indicated that they did not understand the statements in the intended way, i.e. the pro statement was not understood as being pro environmental and climate protection and vice versa. However, including these respondents does not change much about the results. Lastly, only one person in this final dataset stated to be of diverse gender, thus this person was also excluded as this would be too small of a subgroup for the gender variable. This results in a final sample of 2,003 respondents. The summary statistics by treatment group can be found in Table A.1 in the Appendix.

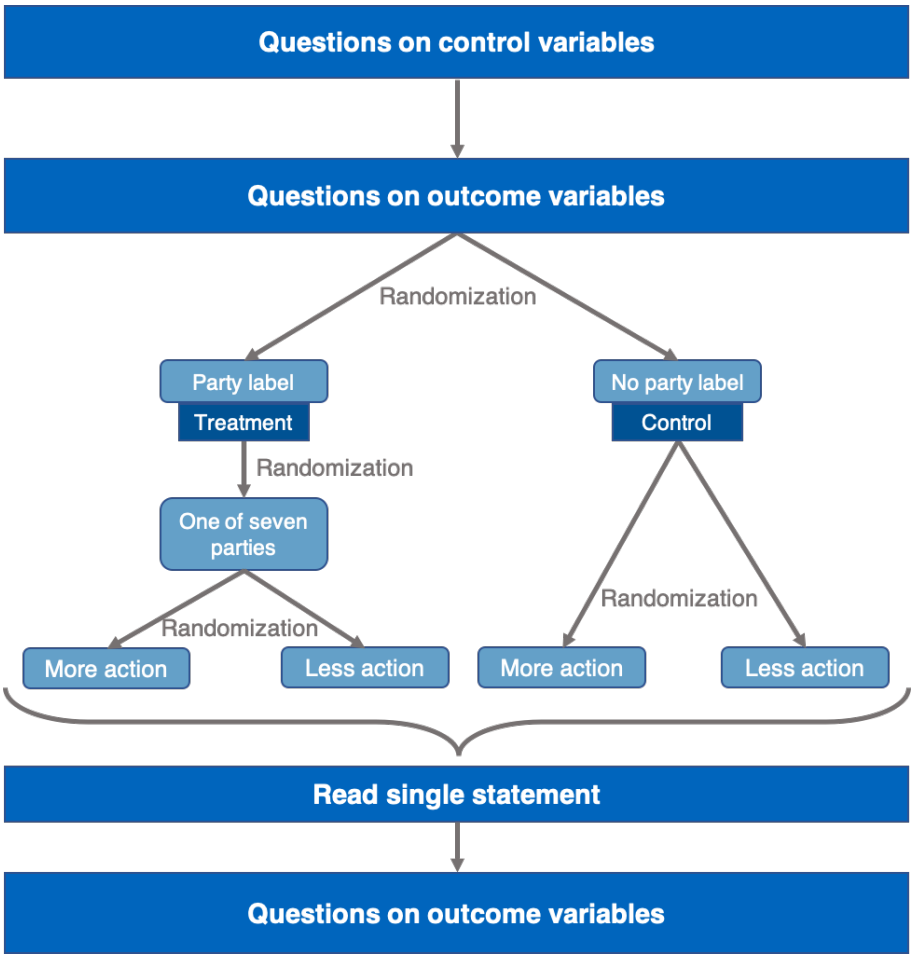
The survey is designed as an experimental vignette study where each respondent is shown one specific statement on the need for environmental and climate protection during the COVID-19 pandemic. The survey flow is shown in Figure 2.1. The questionnaire is structured as follows. All respondents first have to answer a set of questions on their personal data, political orientation and knowledge, pro-environmental behavior, climate change knowledge, and environmental concern.

This is followed by a block of nine questions on respondents' opinions about taking action to protect the environment and climate which are all answered using 7-point Likert scales. More specifically, there are three different questions asked for three different types of agents. For the first question, participants should state how adequate they consider the actions currently taken by themselves, the German government or the world which they can answer on a scale from 1 (very exaggerated) to 7 (much too low).[4] The second question asks how urgent respondents think it is that action is taken by themselves, the German government or the world which is answered on a

[3] Postal codes are used to determine the respondent's district which in turn is employed to cluster standard errors.

[4] In the questionnaire itself, this scale was reversed, however for easier comparison it is referred to in the order presented here.

Figure 2.1: Survey Flow



scale from 1 (not at all urgent) to 7 (very urgent). Finally, for the third question participants should answer how important they think it is in the long term that action is taken by themselves, the German government or the world with the answer provided again via a scale from 1 (not at all important) to 7 (very important). These nine questions are later on used to construct the main dependent variables for the analysis.

Furthermore, all respondents are asked to specify how they would like to split a donation of 200 Euro. The money is provided to them specifically for the purpose of donating it, they cannot keep it for themselves and cannot decide

not to donate. They have the choice between two organizations that are in favor of more climate protection (Fridays for Future, BUND) and two organizations that are against more climate protection (EIKE, CFACT)[5] or they can decide to donate to another cause that will be randomly chosen afterwards, thus respondents do not have an incentive to donate to a specific cause other than climate protection. They can choose to split the money freely, i.e. give all the money to one organization or to some or all of them. After the survey was conducted, one of the donation decision was randomly chosen and carried out.

Next, the experimental vignette is introduced. Each respondent is provided with a single statement. There are either two or three randomization steps that lead to the specific statement each respondent gets. First, it is determined whether the statement is to be labeled as being the prevailing opinion of one specific party or not labeled, i.e. the respondent gets the information that it is just an assessment of the urgency to take action protecting the environment and climate during the COVID-19 crisis. Next, if the statement is supposed to be labeled as a party statement, it is randomly determined which party out of the seven parties in the German parliament should appear. Finally, in both cases, i.e. if there was a party label assigned or not, it is randomly specified what the statement is supposed to say. There are two possible statements, one that is in favor of more action to be taken protecting the environment and climate during the current pandemic, i.e. the pro statement, and one that is against this, i.e. the con statement.[6] Thus, there are in total 16 different possibilities for the statement and framing text the respondent can be provided with.[7] In a last step, the respondent again has to answer the nine questions on taking action and the donation decision mentioned above.

[5] More information on these four organizations can be found in section A.1.1 of the Appendix.

[6] The English translation of the original German statements can be found in section A.1.2 of the Appendix.

[7] The credibility and intelligibility of the pro and con statements in connection with all seven parties was tested successfully in a prior online survey. More information on this survey can be found in section A.1.4 of the Appendix.

2.3.3 EMPIRICAL STRATEGY

The dependent variable for the main analysis is generated by taking the mean response to the nine aforementioned questions on taking action to protect the environment and climate. This variable is hereafter called desire for action. Looking into the questions in more detail, additional dependent variables are generated by taking the mean score for each type of question (adequacy, urgency, long term importance) and each type of agent (oneself, the German government, the world) separately, i.e. three questions per score, which amounts to six additional dependent variables. Thus, this results in seven new variables with overall high scale reliabilities (Cronbach's alpha: desire fore action (all 9 questions) α = 0.92; $Adequacy$ α = 0.71; $Urgency$ α = 0.86; $LongTerm$ α = 0.89; $Self$ α = 0.72; Gov α = 0.88; $World$ α = 0.85). Additionally, the donation decision is turned into another new variable by subtracting the amount of money given to the two organizations that are against more climate protection from the amount given to the two organizations that are in favor of more climate protection. Thus this variable has a range from -100 (all of the money is given to one or both of the con climate protection organizations) to 100 (all of the money is given to one or both of the pro climate protection organizations).

After looking at the overall treatment effects on desire for action via non-parametric tests, the effects on the six different action scores is examined. Thus, I regress these dependent variables on the the treatment dummies. The statistical model underlying Table A.3 is:

$$\Delta Y_{id} = \alpha + \eta \times pro_{id} + \lambda \times label_{id} + \delta \times pro_{id} \times label_{id} + \gamma' x_{id} + \epsilon_{id} \qquad (2.1)$$

where ΔY_{id} is the change in one of the six action scores, i.e. $Adequacy$, $Urgency$, $LongTerm$, $Self$, Gov and $World$, or the donation decision of individual i living in district d from before to after reading the cue. pro_i is a dummy variable that is equal to 1 if the respondent got to read a pro statement and 0 otherwise. $label_i$ is a dummy variable that is equal to 1 if the respondent got to read a party labeled statement and 0 otherwise. x_i is a vector of

the control variables listed in section A.2.1 of the Appendix. All explanatory variables except for dummies are standardized meaning they have a mean of zero and a standard deviation of one (z-score). Thus, their coefficients can be interpreted as the change in desire for action associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at district level, i.e. the German "Kreis".

Next, the effect of an unexpected cue is examined. An unexpected cue is a cue that contradicts the typical stance the respondent expects from this party. To do so I regress the absolute change in desire for action on an unexpected cue dummy. The statistical model underlying the results in Figure 2.3 is:

$$|\Delta DesireForAction|_{id} = \alpha + \beta \times UnexpectedCue_{id} + \gamma' x_{id}^{tp} + \epsilon_{id} \tag{2.2}$$

where $|\Delta DesireForAction|_{id}$ is the absolute value of the change in desire for action of individual i living in district d from before to after reading the cue. $UnexpectedCue_{id}$ is a dummy variable that is equal to 0 if the cue is anticipated and 1 otherwise. A cue is considered anticipated if it is in line with how important the respondent expected climate change to be for the treatment party, i.e. if the cue is pro and the party is expected to care about climate change or vice versa. x_i is defined as before, however x_{id}^{tp} now also includes support for the treatment party which could not be included beforehand since the unlabeled cues do not have a treatment party. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run three times: once for all respondents that received a labeled cue, once for all that support their treatment party and once for all that oppose it. Support is measured on a thermometer scale from -5 to +5 and a treatment party is considered supported when support is larger than zero and opposed when support is smaller than zero.

Looking at the actual direction of change in opinion, I examine the effect of an unexpected cue on post-treatment desire for action. Thus, the model underly-

ing Table 2.1 is:

$$\begin{aligned} DesireForAction^{a}{}_{id} =& \alpha + \beta \times UnexpectedCue_{id} + \\ & \zeta \times DesireForAction^{b}{}_{id} + \gamma' x_{id}^{tp} + \epsilon_{id} \end{aligned} \tag{2.3}$$

where $DesireForAction^{a}{}_{id}$ is the desire for action score of individual i living in district d after reading the cue. $DesireForAction^{b}{}_{id}$ is the desire for action score of individual i before reading the cue. $UnexpectedCue_{id}$ and x_{id}^{tp} are defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run four times: for the respondents that support their treatment party and respectively received a con or a pro cue and for the ones that oppose their treatment party and respectively received a con or a pro cue.

In a next step, I examine the mechanisms behind the effects of the party cue treatments. To do so, I regress post-treatment desire for action on various variables about respondents' knowledge and beliefs. The underlying model for Table A.10 is:

$$DesireForAction^{a}{}_{id} = \alpha + \zeta \times DesireForAction^{b}{}_{id} + \gamma' x_{id}^{tp} + \epsilon_{id} \tag{2.4}$$

where $DesireForAction^{a}{}_{id}$ is the desire for action score of individual i living in district d after reading the cue. $DesireForAction^{b}{}_{id}$ is the desire for action score of individual i before reading the cue. x_{id}^{tp} is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run six times: for all respondents that respectively received a con or a pro cue (here, support for the treatment party is excluded from the controls as not all respondents received a cue from a party), for the respondents that support their treatment party and respectively received a con or a pro cue and for the ones that oppose their treatment party and respectively received a con or a pro cue.

Finally, I focus on the effect the respondents' score on the New Ecological

Paradigm (NEP) scale has on their desire for action. Thus, the model underlying Table 2.2 is:

$$DesireForAction^{d}{}_{id} = \alpha + \theta \times NEPscore_{id} + \gamma' z_{id} + \epsilon_{id} \tag{2.5}$$

where $DesireForAction^{d}{}_{id}$ is a dummy variable that is equal to 1 if the respondent changed their desire for action from before to after reading the cue and 0 otherwise. $NEPscore_{id}$ is the NEP score of respondent i. A high NEP score means high concern for the environment and climate while a low score means that the respondent does not believe in or does not care about climate change. z_{id} is a vector of the remaining control variables listed in section A.2.1 of the Appendix and support for the treatment party. Whether the respondent votes or not has to be excluded due to multicollinarity. All explanatory variables except for dummies are standardized meaning they have a mean of zero and a standard deviation of one (z-score). Thus, their coefficients can be interpreted as the change in desire for action associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run six times: for all respondents that respectively received a con or a pro cue (here, support for the treatment party is excluded from the controls as not all respondents received a cue from a party), for the respondents that support their treatment party and respectively received a con or a pro cue and for the ones that oppose their treatment party and respectively received a con or a pro cue.

2.3.4 RESULTS

The first question focuses on how different party cues affect peoples' opinions on the need to take action to protect the environment and climate. Comparing the average change in desire for action in the labeled groups with the unlabeled ones, desire for action in absolute terms is slightly higher in the former one. Figure 2.2 shows an average change of -0.033 vs. -0.026 for the con and 0.038 vs. 0.018 for the pro statements, respectively. This suggests

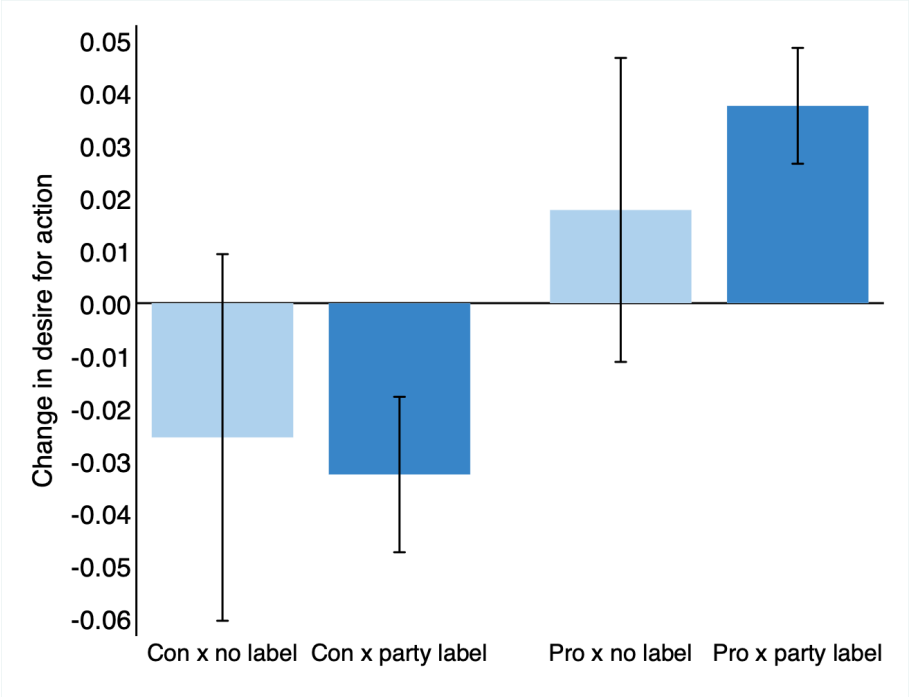
that respondents generally follow the direction of the cue, i.e. decrease their desire for action if they got a con cue and increase it in case of a pro cue. However, the difference between the labeled vs. unlabeled groups is not statistically significant (con: MD = 0.01, Wilcoxon rank-sum test, z = -0.38, P = 0.70, n = 961; pro: MD = -0.02, Wilcoxon rank-sum test, z = -0.45, P = 0.65, n = 1,042). When comparing the average desire for action for the con and pro cues, the average for the con statement in absolute terms appears to be lower than for the pro statement i.e. 0.032 vs. 0.035. Yet again, the difference in absolute value desire for action, i.e. the magnitude of change, is not statistically significant (con vs. pro: MD = 0.03, Wilcoxon rank-sum test, z = 0.57, P = 0.57, n = 2,003). Finally, in line with these results, when looking at the effect of each treatment on its own, only the labeled pro statements appear to be significant (M = 0.04, Wilcoxon matched-pairs signed-rank test, z = 4.76, P < 0.000, n = 923) which is robust to including the respondents that did not understand the statements' intention correctly (see Table A.2 in the Appendix).[8] It should be mentioned that the sample appears to have a generally high desire for action prior to the treatment (see Figure A.1 in the Appendix).

To further examine these effects for the six different action scores, OLS regressions based on equation (2.1) are run. The results can be found in Table A.3 in the Appendix.[9] The marginal effects (see Table A.5 in the Appendix) for the different treatment groups show that the effect on the adequacy and long term score is highly significant for almost all treatments while for the urgency, self and world scores only the labeled cues have significant effects. However, although for the later the cues are followed in the expected directions, i.e. negative for the con and positive for the pro cue, for adequacy the effect is always positive irrespective of the direction of the cue and for the long term score the opposite is the case. These results are robust when including all respondents

[8]For the two-sided t-test both the labeled con and pro cues have a significant effect with P = 0.028 and P = 0.001 respectively, while the unlabeled cues are insignificant. For more information on both parametric and non-parametric tests see section A.2.2 of the Appendix.

[9]For the results of the OLS regressions and Wilcoxon tests for the nine separate desire for action questions as described in the pre-analysis plan see section A.2.4 of the Appendix.

Figure 2.2: Average change in desire for action



Notes. The figure shows the change in the mean desire for action for the labeled and unlabeled con and pro statements, respectively. Bars indicate standard error of the mean. Observations: con x no label = 113; con x party label = 848; pro x no label = 119; pro x party label = 923.

and, except for the con labeled cues which become partly insignificant, also in Wilcoxon signed-rank tests (see Tables A.6 and A.7 in the Appendix). Interestingly, none of the seven parties in the German parliament seems to have a predominant overall effect as no clear pattern of significant results or bigger effect sizes emerges once the marginal effects are split up for every party separately (see Table A.8 in the Appendix). In summary, this suggests that, while the differences are not huge, labeled cues seem to work better than unlabeled ones in changing respondents' desire for action especially if they are in favor of more environmental and climate protection rather than against it.

For the donation decision, only weakly significant effects for the labeled con cues in a two-sided Wilcoxon signed-rank test (M = 1.154, Wilcoxon matched-

pairs signed-rank test, z = 2.010, P = 0.044, n = 848) and the labeled pro cues for the marginal effects of the OLS regression (P = 0.054) can be found (see Table A.6 in the Appendix). Other than that, results are insignificant which is why the donation decision will not be examined further in the remainder of this analysis.

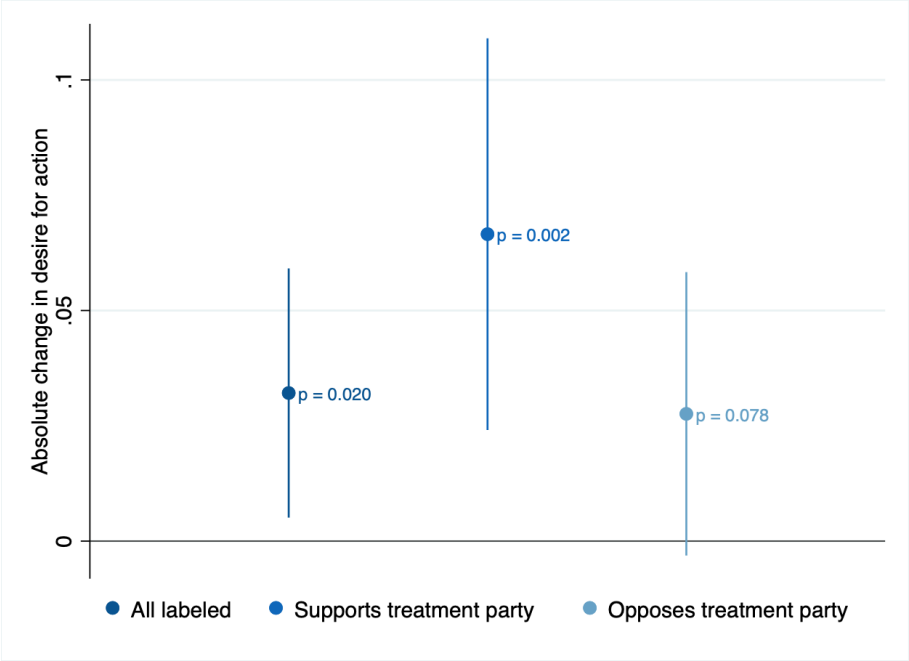
While according to these results some respondents indeed significantly change their desire for action after reading the statements, it has to be noted that about 70 to 80 percent of respondents for the nine questions on taking action and even 86 percent for the donation decision did not change their opinion. Also the correlation between the intensity of own environmental concern and political interest is higher in the group of respondents that stick to their initial answer (0.24) than the group that changes their opinion (0.07).These results suggests that participants generally maintain the status quo, even more so if they have strong opinions on climate change and politics alike.[10]

For the reminder of the analysis, the sample will additionally be split by treatment party support. Support is measured on a thermometer scale from -5 to +5 and a treatment party is considered supported when support is larger than zero and opposed when support is smaller than zero. While no differences could be found for the general effects of party cues that were considered up until this point (all Wilcoxon tests are insignificant), the impact of party support plays a role once more detailed analysis is conducted.

Next, I examine how people change their opinion if the party cue received contradicts the typical stance they expect from this party. Since the unlabeled

[10]As announced in the pre-analysis plan, it would have been interesting to compare the groups that are considered least likely to deviate in this situation, i.e. the respondents that are neither concerned with politics nor climate change and the respondents that are politically and environmentally interested while at the same time strongly supporting their treatment party that has a different stance on climate change than these respondents themselves have. However, only 50 people matched the criteria of the second group and thus, taking into account that there are seven different treatment parties, the results can not be considered reliable. Nevertheless, the results for the Wilcoxon tests can be found in Table S1.A.21 in the Appendix.

Figure 2.3: Effect of unexpected cue on absolute change in desire for action



Notes. The figure shows the coefficients and 95% confidence intervals for the OLS regressions of the absolute change in desire for action on an "unexpected cue" dummy and additional controls. Specifications include all control variables listed in section A.2.1 of the Appendix as well as support for treatment party. The "unexpected cue" dummy is equal to 0 if the cue is anticipated and 1 otherwise. A cue is considered anticipated if it is in line with how important the respondent expected climate change to be for the treatment party, i.e. if the cue is pro and the party is expected to care about climate change or vice versa. Observations: all labeled: 1,771; supports treatment party: 667; opposes treatment party: 835.

cues cannot be (un)expected as this attribute is tied to a party label, they are not considered in this part of the analysis. I analyze the effect of an unexpected cue on the absolute value of change in desire for action employing an OLS regression based on equation (2.2). From the results depicted in Figure 2.3, it becomes apparent that an unexpected cue generally leads to a stronger change in opinion even if the party is opposed by the respondent but especially so if the cue comes from a supported party.

Considering the actual direction of change in opinion, the results become more diverse. As depicted in column (1) of Table 2.1 which is based on

Table 2.1: OLS regression analyses: Effect of unexpected cue

	Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)
Desire for action (post-treatment)	con x label	pro x label	con x label	pro x label
Unexpected cue (D)	0.147*	-0.007	-0.005	0.088**
	(0.066)	(0.042)	(0.039)	(0.031)
Controls	Yes	Yes	Yes	Yes
Observations	314	353	410	425
R^2	0.824	0.866	0.910	0.908

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses. Specifications include all control variables listed in section A.2.1 of the Appendix as well as support for treatment party and pre-treatment desire for action. The "unexpected cue" dummy is equal to 0 if the cue is anticipated and 1 otherwise. A cue is considered anticipated if it is in line with how important the respondent expected climate change to be for the treatment party, i.e. if the cue is pro and the party is expected to care about climate change or vice versa.

equation (2.3), receiving an unexpected con cue from a supported party leads to significant increase in desire for action meaning the respondent opposes the supported party's alleged stance. At the same time, as can be seen in column (4), an unexpected pro cue from an opposed party results in stronger support of the party's alleged opinion. The second result still holds when looking at the delta for desire for action as dependent variable (see Table A.9 in the Appendix). Thus, provided that respondents generally support parties they expect to have a similar opinion as themselves,[11] one could say that an unexpected cue from an opposed party is more convincing when it is in line with one's own beliefs while an unexpected cue from a supported party might make respondents rather question the party's stance than their belief. Since the results are only significant for opposed parties that give an unexpected pro statement, i.e. are initially perceived as opposing climate protection, and supported parties that give an unexpected con statement, it can be concluded that these effects are only visible for respondents that generally support parties they consider pro climate protection which is in fact true for the majority

[11] Considering a maximum difference of one point on the 5-point Likert scale for the supported parties opinion on climate change and the respondent's 5-point NEP score, 89.82 percent of respondents support parties that they expect to have a similar opinion on climate change as themselves.

of the sample.[12]

Finally, the mechanisms through which party cues influence peoples' opinions on environmental and climate protection are examined. For this purpose the OLS regressions with the split sample are repeated with post-treatment desire for action as dependent variable now focusing on respondents' knowledge and beliefs about the environment and politics. The detailed results which are based on equation (2.4) can be found in Table A.10 in the Appendix. From these regressions it becomes apparent that respondents hardly seem to take their knowledge and beliefs into account for unlabeled cues while relying on them for con cues from supported and pro cues from opposed parties. As established before, the majority of the sample would not anticipate such cues,[13] thus it can be concluded that participants rather rely on knowledge and beliefs once they face an unexpected party cue.

Looking at the results in more detail, it can be noted that respondents supporting their treatment party follow con cues more, the less they support their favorite party and the more they support the treatment party. Since the favorite party is generally perceived as in favor of climate protection, these results suggest that respondents either follow their favorite party or another supported party, i.e. the treatment party, depending on how big the difference in support for the two parties is. For a pro cue from an opposed party the effect seems to be more unambiguous namely that the more participants support their favorite party, the more they follow a pro cue even though it originates from an opposed party. Thus, party cues appear to have a stronger effect the more participants are in favor of some party.

Additionally, respondents that get a con cue from a supported party follow this cue more, the less politically interested, distrusting towards people and

[12]Only 6.14 percent of respondents think that their favorite party considers climate change as not at all or not so important while 66.79 percent consider this topic to be important or very important for their preferred party.

[13]Two thirds of the sample consider climate change to be important or very important for their preferred party.

trusting towards parties they are. A pro cue from an opposed party however seems to be more convincing, the more they trust people in general, the less they know about politics and if they do not vote. All these results speak towards the fact that respondents appear to follow cues more the less they are convinced to know about the truth themselves. Overall, these results are robust to adjusting for multiple hypothesis testing, in regression models with the delta as dependent variable and when including all respondents (see Tables A.11, A.12 and A.13 in the Appendix).

Table 2.2: Probit regression analyses: Marginal effects for NEP score

Dependent variable:	No label		Supports treatment party		Opposes treatment party	
Desire for action	(1)	(2)	(3)	(4)	(5)	(6)
(change dummy)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
NEP score	-0.067	-0.151**	-0.010	-0.060*	-0.094***	-0.043+
	(0.044)	(0.054)	(0.024)	(0.026)	(0.020)	(0.026)
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	113	115	314	353	410	425

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Except for the respondent's voting decision, all controls listed in section A.2.1 of the Appendix are included. The "change dummy" is 1 if the respondent changed their answer to one of the desire for action questions from before to after the treatment and 0 otherwise. The NEP score is standardized.

The revised New Ecological Paradigm (NEP) scale, one of the most commonly used measures of pro-environmental attitudes (Dunlap et al., 2000), however seems to be the most important factor for respondents when considering changing their desire for action. For all labeled statements a higher NEP score leads to a higher desire for action after treatments, suggesting that respondents' own concern for the environment has a considerable impact on their support for climate protection. Looking further into the effect of one's own pro-environmental beliefs reveals that respondents overall change their opinion significantly less often the more they are concerned about climate change even when receiving unlabeled pro cues as can be seen in Table 2.2 which is based on equation (2.5).[14] Conversely, this means that the less

[14]for the results of these probit regressions for all additional variables see Table A.14 in the Appendix.

participants care about climate change, the more impressionable they are. These results generally remain the same when including all respondents (see Table A.15 in the Appendix).

2.4 Study 2: Effect of an all-party consensus

2.4.1 Research questions

The first study shows that while party cues do have a significant effect on respondents' opinions, especially so if they are in favor of more environmental and climate protection, in the case of unexpected cues participants rather rely on their own knowledge and beliefs. Since these unexpected cues only originate from one party at a time, it is easy to disregard them and fall back on own convictions. Furthermore, in reality parties try to set themselves apart from each other by adopting opposing stances on important topics and even though the existence of antrophogenic climate change itself is hardly denied in Germany and many other countries, the urgency and manner in which this crisis should be dealt with is largely discussed (Tschötschel et al., 2020). Thus, the following study should answer the questions of what effect a scenario would have in which all parties agree on the best policy regarding environmental and climate protection as well as what happens in terms of mechanisms once more than one party cue is not in line with respondents' expectations.

While a few works exist that include a scenario with multiple or all parties agreeing on a certain decision in party cue related experiments (Towfigh et al., 2016; Stoeckel and Kuhn, 2018; Bolsen et al., 2014), a consensus as it is presented within this study has never been examined before. For the hypothesis concerning the second question one can only assume similar impacts as in the first study, i.e. respondents that are confident in their own convictions are less likely to follow party cues. However, this effect should be less severe as multiple cues can be expected to have a stronger influence than a single cue. Regarding the impact of a consensus compared to a situation in

which the parties disagree on the best policy, it can be assumed that the novel situation of a consensus is more effective in changing particiants' opinions than a dissent as the former includes new and surprising information which according to the aforementioned belief based models exerts more influence (Chiang and Knight, 2011; DellaVigna and Gentzkow, 2010). This hypothesis is in accordance with a related experiement by Stoeckel and Kuhn (2018) where they find that informing participants about a consensus of all German parties on international redistribution in economic crises is more convincing than telling them that a new party, the AfD, is against such a policy. Taking the results of the first survey into account, it can furthermore be assumed that respondents rather follow a consensus on more environmental and climate protection than an opposing one.

2.4.2 Data collection and survey design

The data was collected at the same time and in the same manner as for the first study, i.e. from the 8th to the 20th of April 2021 and nationally representative. From the initial 474 respondents for this study, three had to be dropped due to stating nonexistent postal codes. Another 81 people, or 17.2% of the remaining sample, are excluded from the main analysis as they indicated that they did not understand the statements in the intended way, i.e. the pro consensus was not understood as being pro environmental and climate protection and vice versa. However, similar to the first study including these respondents does not change much about the results. Finally, two people were dropped for indicating to be of diverse gender as this is again too small of a subgroup. The summary statistics by treatment group for the final sample of 388 respondents, can be found in Table A.24 in the Appendix.

This second study is supposed to answer the question of what effect a hypothetical consensus of all parties in the parliament would have. Thus, it is again designed as an experimental vignette study where each respondent gets to read seven different statements - one from each party - that are either

in favor of or against more environmental and climate protection during the COVID-19 pandemic depending on the treatment group the respondent is assigned to. The structure of the questionnaire is identical to the one of the first study, hence the respondents first have to answer the same questions on personal data, political orientation and knowledge, pro-environmental behavior, climate change knowledge and environmental concern. After this, again the nine questions on respondents' opinion about taking action to protect the environment and climate as well as the donation decision follow.

Next, the respondent is provided with the experimental vignette, i.e. an overview of seven statements one from each of the seven parties in the German parliament, respectively. For each party two different statements could potentially be shown in the overview. Similar to the first study, the pro statement is in favor of more action to be taken protecting the environment and climate during the current pandemic and the con statement is against this.[15] There is one single randomization step that determines for all parties whether their pro or con statement is shown to the respondent. In this randomization step one of three possible treatments is selected. The first one would be an all party consensus to take less action during the COVID-19 crisis meaning that for every party the con statement is shown to the respondent, i.e. the respondent gets to read seven different con statements. The second and opposite case would be the all party consensus to take more action, i.e. the pro statement is shown for all parties. Finally, in the party disagreement treatment, four parties are shown with the pro and three with the con statement. The state of the statements is predetermined taking into account the actual opinion each party would most likely have at the moment and always stays the same for this treatment. In a last step, the respondent again has to answer the nine questions on taking action and the donation decision mentioned before.

[15]The English translation of the original German statements can be found in section A.1.2 of the Appendix. Same as for the statements in the first study, the credibility and intelligibility of the pro and con statements for all seven parties was tested successfully in the aforementioned prior online survey. More information can be found in section A.1.4 of the Appendix.

2.4.3 EMPIRICAL STRATEGY

The dependent variables are constructed in the exact same way as for the first study which again results in seven new variables with almost the same scale reliabilities as before (Cronbach's alpha: desire for action α = 0.91; $Adequacy$ α = 0.72; $Urgency$ α = 0.83; $LongTerm$ α = 0.85; $Self$ α = 0.73; Gov α = 0.87; $World$ α = 0.84) and the same new variable for the donation decision.

After looking at the overall treatment effects on desire for action via non-parametric tests, the effects on the six different action scores is examined. Thus, I regress these dependent variables on the the treatment dummies. The statistical model underlying Table A.26 is:

$$Y_{id}^{a} = \alpha + \eta \times ConConsensus_{id} + \lambda \times ProConsensus_{id} + \delta Y_{id}^{b} + \gamma' x_{id} + \epsilon_{id} \quad (2.6)$$

where Y_{id}^{a} is one of the six action scores, i.e. $Adequacy$, $Urgency$, $LongTerm$, $Self$, Gov and $World$, or the donation decision of individual i living in district d after reading the cues. Y_{id}^{b} is the same action score, respectively the donation decision, of individual i before reading the cues. $ConConsensus_{id}$ is a dummy variable that is equal to 1 if the respondent got to read the con consensus, i.e. only statements against environmental and climate protection, and 0 otherwise. $ProConsensus_{id}$ is a dummy variable that is equal to 1 if the respondent got to read the pro consensus, i.e. only statements in favor of environmental and climate protection, and 0 otherwise. x_{id} is a vector of the control variables listed in section A.3.1 of the Appendix. All explanatory variables except for dummies are standardized meaning they have a mean of zero and a standard deviation of one (z-score). Thus, their coefficients can be interpreted as the change in desire for action associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at district level, i.e. the German "Kreis".

In a next step, I examine the mechanisms behind the effects of the treatments. To do so, I regress post-treatment desire for action on various variables about

respondents' knowledge and beliefs. The underlying model for Table A.32 is:

$$DesireForAction^{a}{}_{id} = \alpha + \zeta \times DesireForAction^{b}{}_{id} + \gamma' x_{id} + \epsilon_{id} \tag{2.7}$$

where $DesireForAction^{a}{}_{id}$ is the desire for action score of individual i living in district d after reading the cues. $DesireForAction^{b}{}_{id}$ is the desire for action score of individual i before reading the cues. x_{id} is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run three times: once for the con consensus, once for the pro consensus and once for the disagreement treatment.

Finally, I analyse the effects respondents' knowledge and beliefs have on their decision to change their desire for action from before to after the treatment. Thus, the model underlying Table A.36 is:

$$DesireForAction^{d}{}_{id} = \alpha + \gamma' x_{id} + \epsilon_{id} \tag{2.8}$$

where $DesireForAction^{d}{}_{id}$ is a dummy variable that is equal to 1 if the respondent changed their desire for action from before to after reading the cues and 0 otherwise. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run three times: once for the con consensus, once for the pro consensus and once for the disagreement treatment.

2.4.4 RESULTS

In order to answer the question of what effect a scenario would have in which all parties agree on the best policy regarding environmental and climate protection, average desire for action in the consensus treatment groups and the disagreement group are compared. With mean deltas of -0.097 for the con and 0.141 for the pro consensus respondents seem to follow the direction of the cues again. The mean delta for the disagreement treatment amounts to 0.0349 and is thus slightly positive, however not statistically significant (M = 0.035, Wilcoxon matched-pairs signed-rank test, z = 1.364, P = 0.173, n =

156). The pro consensus treatment unlike the con consensus treatment not only appears to have a significant effect in changing people's opinion (M = 0.141, Wilcoxon matched-pairs signed-rank test, z = 4.427, P > 0.000, n = 119), but also seems to be significant compared to the disagreement treatment (MD = 0.106, Wilcoxon rank-sum test, z = 2.379, P = 0.017, n = 275).[16] Both of these results still hold when including all respondents (see Table A.25 in the Appendix). Thus, it can be concluded that especially a pro consensus of all parties is effective in changing people's opinion on environmental and climate protection towards a more pro-environmental attitude. Again, it should be mentioned, that, same as in the first study, respondents seem to have a generally high desire for action prior to the treatment already (see Figure A.2 in the Appendix). For the donation decision, none of the treatments has a significant effect which is why it is again not further discussed in the main analysis (results can be found in Tables A.25 and A.26 in the Appendix).

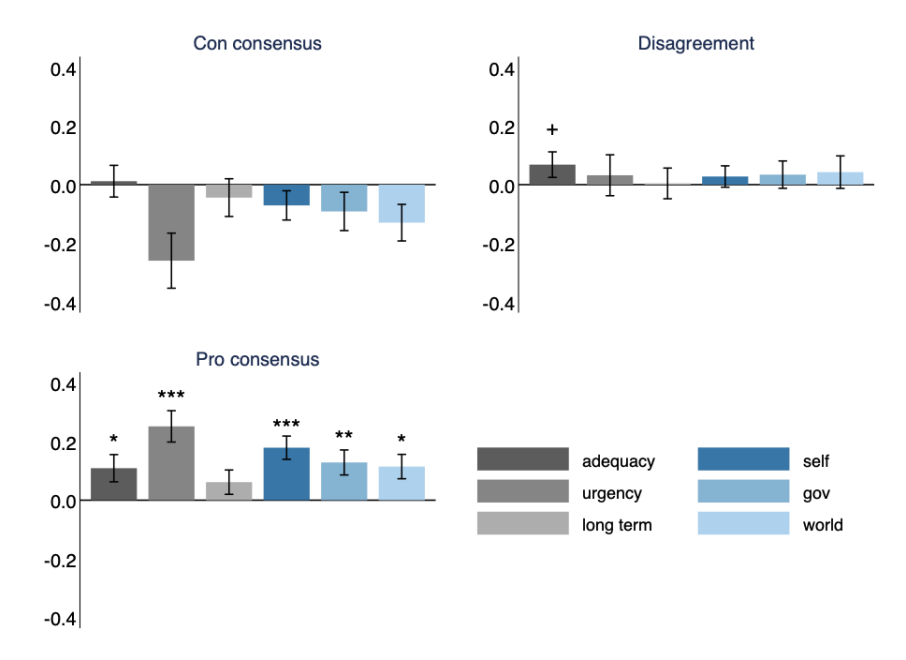
Focusing again on the six different sets of action scores, OLS regressions with clustered standard errors at district level and post-treatment desire for action as dependent variable are estimated which are based on equation (2.6) (see Table A.26 in the Appendix).[17] The results of these regressions show that the change in desire for action seems to predominantly stem from the urgency type questions with significant effect sizes of 0.290 for the pro and -0.258 for the con consensus in comparison to the disagreement treatment ($p<0.01$ and $p<0.05$, respectively). These results are robust to adjusting for multiple hypothesis testing, in regression models with the deltas as dependent variables and Wilcoxon rank-sum tests and, at least for the pro consensus, when including all respondents (see Tables A.28 to A.31 in the Appendix). In line with the aforementioned Wilcoxon test results, especially the pro consensus treatment seems to be effective in changing respondents' opinion on almost all sets of questions, as can be seen in Figure 2.4 where the mean

[16] For the t-test both the con and pro consensus have a significant effect compared to the disagreement treatment with P = 0.034 and P = 0.041 respectively. For more information on both parametric and non-parametric tests see section A.3.2 of the Appendix.

[17] For the results of the OLS regressions and Wilcoxon tests for the nine separate desire for action questions as described in the pre-analysis plan see section A.3.4 of the Appendix.

deltas for the different action scores and the significance stars for the Wilcoxon matched-pairs signed-rank tests for each score are depicted.[18] It can be concluded that while both, the con and pro consensus, seem to influence people's desire for action significantly more than all parties disagreeing on the issue, an all party consensus that more environmental and climate protection is needed appears to have a stronger cuing effect than a consensus on the opposite case. Especially participants' assessment of how pressing it is to take such action is affected by consenting party cues.

Figure 2.4: Mean change in action scores and Wilcoxon test p-values



Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. The figure shows the mean change in the action scores for the con and pro consensus and the disagreement treatment, respectively, from before to after the treatment. The stars indicate the p-value for the Wilcoxon matched-pairs signed-rank tests of the mean being different from zero. Observations: con consensus: 113; disagreement treatment: 156; pro consensus: 119.

Finally, again the mechanisms through which multiple party cues influence peoples' opinions on environmental and climate protection is examined.

[18] For more information on both parametric and non-parametric tests see section A.3.2 of the Appendix.

Therefore, OLS regressions based on equation (2.7) are run separately for each treatment group (see Table A.32 in the Appendix). Apparently, once there are several cues from different parties instead of just one, respondents do not rely on their knowledge and beliefs so much anymore as hardly any of these seem to have a significant effect on participant's change in opinion. The only strongly significant effect that is also robust in the regressions with the delta as dependent variable, when adjusting for multiple hypothesis testing and including all respondents (see Tables A.33, A.34 and A.35 in the Appendix) is that the more politically interested respondents are, the less they follow the pro consensus which might be due to politically interested respondents questioning the authenticity of the consensus.

Even the NEP score plays a less relevant role since a higher score only has a positive effect on post-treatment desire for action in the pro consensus case and a negative effect on whether the respondent changes their opinion in the con consensus case (for the probit regressions which are based on equation (2.8) see Table A.36 in the Appendix). Yet, this shows that participants that are already quite concerned about climate change demand even more climate protection once all parties are agreeing on this to be important while not being so easily persuaded if all parties concur that climate protection is not as relevant. These results are robust to adjusting for multiple hypothesis testing and including all respondents (see Tables A.37 and A.38 in the Appendix).

2.5 Discussion and conclusion

In this paper, two studies investigate the public's desire for action on environmental and climate protection due to party cues. In the first study, respondents receive a single statement either labeled as a party cue or general assessment being in favor of or against more environmental and climate protection. In the second study, participants are also confronted with information on parties' stances on this issue however in this case they receive one statement per party. Results show that a pro statement by a single party is effective in

changing the public's' opinion on this topic. This effect even increases once more than one party agrees on such a statement. Additionally, unexpected party cues and being uninterested in or denying climate change means being more impressionable and more easily persuaded.

The results of the first study suggest that the party labeled cues tend to be more effective in changing respondents' desire for action with the pro statement overall being the only one that appears to have a significant effect. Only marginally significant effects can be found for the donation decision. Analyzing the desire for action in more detail reveals interesting effects for the sets on adequacy and long term importance of taking action. First of all, in contrast to the other types of questions, both of these scores are significantly impacted regardless of the treatment. Secondly, in the adequacy case the direction of change is always positive, translating to more desire for action, and always negative for the long term score. For adequacy, this might be due to respondents contemplating the current state of action taken to protect the environment and climate regardless of the content of the statement and thus being reminded that more action is generally needed to fight climate change. For the long term importance, participants might interpret these questions as a trade-off between taking action now and taking action long term. Since they are apparently in favor of more action to be taken currently, as the adequacy score suggests, they are lead to think that long term action is thus less important in comparison.

Results also suggest that respondents generally maintain the status quo, especially so if they have strong opinions on climate change and politics alike. This is in line with the literature on status quo bias (Goodman and Murray, 2007; Tversky and Shafir, 1992).

Looking at the effect of contradicting party cues, i.e. cues that are suggesting the opposite opinion than what the respondent expected this party to have, shows that such an unexpected statement leads to a stronger change in desire for action, even more so if said statement is uttered by a supported

rather than an opposed party. Examining these effects in more detail prompts that receiving a contradicting cue from an opposed party - which for most participants means that it is in line with their own beliefs - makes said cue even more convincing. However, such an unexpected statement from a supported party leads respondents to rather question said party instead of their own convictions and therefore not follow the cue. Thus, for a contradicting stance the effect might be stronger than for an anticipated one as suggested by the literature (DellaVigna and Gentzkow, 2010). Yet, the change in opinion might not follow the intended direction but rather the opposing one.

Unexpected cues also lead to respondents rather relying on their knowledge and beliefs in a way that is mostly in line with the literature. Firstly, results speak towards the fact that the more participants support some party, the more they are influenced by part cues (Samuels and Zucco Jr, 2014; Carlson, 2016; Barber and Pope, 2019). Secondly, they follow cues more the less they are convinced to know about the truth themselves, because they know less about politics or do not care about it, do not vote or have more trust in parties (Kam, 2005; Barber and Pope, 2019). For trust in people, results are a bit more diverse. Respondents follow con cues from supported parties less and pro cues from opposed parties more, the more they trust people in general. According to Matthes (2013), an explanation for this could be that being more trusting towards people means expecting less negative reactions from others when uttering a deviating opinion and thus rather participating in discussions on political matters. Therefore, such individuals might be more prone to sticking to their opinion, i.e. following the reasoning mentioned for the unexpected cues above.

Finally, especially respondents' environmental concern appears to play a role in their desire for action as it significantly influences whether a change in opinion is made or not. This is even the case for unlabeled cues which is again in line with the literature (Barber and Pope, 2019; Bougher, 2017; Webster and Abramowitz, 2017). Thus, highly concerned individuals are less impressionable than the ones that do not care about or even oppose climate

protection.

For the second study, results are in line with the first study meaning that only the pro consensus appears to have a significant effect on desire for action. However, in this case no significant effect can be found for the donation decision. Both consensus treatments significantly affect the opinion on the urgency to take action. Furthermore, the effect sizes for desire for action are bigger in this study than in the first one with 0.2 standard deviations overall for the con and 0.3 for the pro consensus. While this range of effect sizes still appears small, it is in line with similar experiments (Merkley and Stecula, 2021). Furthermore, following the argument of Merkley and Stecula (2021), considering that respondents only got to read three sentences about a widely known and broadly discussed topic they potentially already have a quite consolidated opinion on, finding significant effects is quite remarkable.

Regarding mechanisms behind the change in desire for action, it can be said that respondents appear to rely less on their knowledge and beliefs in these treatments. Being environmentally concerned is also less important than in the first study, yet it leads to respondents demanding even more climate protection once all parties are agreeing on more environmental and climate protection while not being so easily persuaded if all parties concur that this topic is not as relevant.

In conclusion, the fact that people appear to be more impressionable when they receive unexpected cues or are lead to believe that all parties work together to fight climate change, could be used to change the public opinion on climate protection by encouraging a united stance from all parties that care about protecting the environment and climate. This becomes even more important, when considering that people that do not care about or oppose climate protection are most easily persuaded. Despite effect sizes being rather small, finding significant results is still formidable considering the strong and persistent opinions people have on the topic of climate change after years of public discussion and strong polarization as the work by Tschötschel

et al. (2021) demonstrates. Additionally, the effect of party cues tends to be rather persistent, making them an important tool in shaping the public opinion (Tappin and Hewitt, 2021).

3

Public support for more ambitious climate policies

Sebastian J. Goerg, Andreas Pondorfer and Valentina Stöhr[1]

Abstract To reach the goals of the Paris agreement more ambitious climate policies need to be implemented. In an experimental survey that is representative for the population at the sub-national level in Germany, we investigate how a change from existing climate policies to more ambitious policies drives public support. Using different descriptions of policies, we demonstrate that in general, more ambitious policies reduce public support. This effect is stronger if the focus is on an increase of carbon prices compared to a focus on a policy mix to reduce the emission of greenhouse gases. Economic preferences and other individual characteristics as well as regional characteristics are substantially correlated with public support. This demonstrates challenges for the communication of tighter climate policies and underlines the need to address an audience with heterogeneous preferences and diverse regional backgrounds.

[1]The working paper this chapter is based on can be found here: `https://www.mgt.tum.de/faculty-research/munich-papers`. Own contributions to the chapter: conceptualization of the design, data collection and curation, empirical analyses and paper writing.

3.1 INTRODUCTION

Global warming and human-caused climate change are significant threats our world is facing today. To mitigate the worst environmental, economic, and social consequences of climate change, numerous international agreements have been established. However, global greenhouse gas (GHG) emissions have yet to reach their peak. To meet the goals set forth in the Paris Agreement, it is essential that more ambitious climate policies be implemented on a global scale (McCollum et al., 2018; Robiou du Pont et al., 2017). One example of more ambitious policies is the *Fit-for-55* plan proposed by the Commission of the European Union (EU) in July 2021. It is part of the *Green Deal* that mandates to drastically reducing GHG emissions by at least 55% by 2030, compared to 1990 levels. These ambitious climate policies will influence how we consume, drive, built, produce goods and services, and manage forests and land. However, one important factor for the successful implementation of ambitious climate policies is the level of public support (Leiserowitz, 2006; McCright et al., 2016; McCright and Dunlap, 2011; Bernauer, 2013; Stehr, 2015).

Previous empirical research identified the perception of climate policy and its attributes such as benefits, costs, effectiveness, fairness and potential revenues as important factors of public support (Drews and Van den Bergh, 2016). Studies found that the public strongly rejects the instruments of carbon taxes and carbon pricing (Cantner and Rolvering, 2022; Rhodes et al., 2017; Stadelmann-Steffen and Dermont, 2018; Levi, 2021b; Mildenberger et al., 2022; Carattini et al., 2018; Klenert et al., 2018; Maestre-Andrés et al., 2019; Douenne and Fabre, 2020). Nevertheless, the EU and countries like Germany pursue carbon pricing but the the lack of acceptability results so far in relatively low-price levels and only partial coverage of emissions. While prices will have to increase, a significant aspect has been neglected: how do people change their support when supranational entities such as the EU change their climate policies towards more ambitious goals?

Using a large-scale online survey experiment representative of the German population at the sub-national level, this study shows how the exposure to information about more ambitious policies causally affects public support for these policies. The results reveal that information about more ambitious climate policies – as for example proposed by *Fit-for-55* – decreases public support. This decrease is stronger if increasing carbon prices are emphasized compared to a policy mix with a focus on the reduction of greenhouse gases. Furthermore, our results show that policy support is substantially associated with economic preferences (i.e., reciprocity, trust, risk and patience) and other individual characteristics (e.g., experience of recent hazards, belief in climate change). In addition, we show correlations between regional characteristics (i.e., Eastern Germany, macro-economic indicators, cohesion policies, and climate change) and public support for ambitious climate policies.

3.2 Related literature

Meta-studies and reviews have shown that an individual's climate change assessments, such as their level of concern, risk perception, belief in the seriousness of the issue, and knowledge about the topic, play a crucial role in determining public acceptance for climate change policies (Drews and Van den Bergh, 2016; Houser et al., 2022; Bergquist et al., 2022). According to various theories in the social sciences, these assessments form the basis of behavioral intentions and resulting behaviors. For example, the value-belief-norm theory postulates that values influence behavior mostly indirectly trough more specific beliefs, attitudes, and norms (e.g., Stern et al., 1999; Stern, 2000). The theory of planned behavior asserts that attitudes, subjective norms and perceived behavioral control shape intentions to perform an action (Ajzen, 1991). Other theories, especially prevalent in economics, center around individual preferences as the driver of behavior. These preferences are not only applied for the comparisons between goods, but also exist in the form of time preferences, risk preferences, and social preferences (Barsky et al., 1997; Dohmen et al., 2009, 2011; Falk et al., 2018; Figlio et al., 2019). Yet,

systematic empirical comparisons between the impact of economic preferences and the impact of previously identified factors on the public support for climate change policies is missing.

Addressing environmental problems entails a trade-off between immediate and longer-term interests (Van Lange et al., 2013). When making inter-temporal trade-offs, future impacts are often considered distant and discounted in present decision-making and policy design. Thus, an individual's discount rate is an important factor of individual support for climate policies. A meta-analysis shows that future time perspective has a stronger influence on pro-environmental attitudes and behaviors than a combined score of past-present perspective (Milfont et al., 2012). Studies found that temporal focus also largely explains the political gap between liberals and conservatives in attitudes towards and behaviors regarding climate change (Rickard et al., 2016; Baldwin and Lammers, 2016). In addition, many climate policies include outcomes that involve a large degree of uncertainty. For example, individuals have to make investment decisions while future carbon prices are uncertain or insurance decisions related to increasing numbers of natural climate disasters. Previous experimental research shows that communicating increasing levels of uncertainty about future climate change events undermines pro-environmental behavior (e.g., Barrett and Dannenberg, 2014; Morton et al., 2011). Finally, results from a recent experiment in Germany suggest that respondents are generally in favor of an earlier coal-phase out, especially so when it entails a higher number of new jobs. However, with increasing costs and an increasing amount of jobs lost, support for the phase-out decreases (Rinscheid and Wüstenhagen, 2019). Consideration of risk and time preferences must therefore be an important component in the design of effective environmental policy.

Social preferences, including trust, altruism, and positive and negative reciprocity, are important factors that influence social interactions and cooperation. Reciprocity can be seen as an evolutionary stable strategy (e.g., Gintis et al., 2003) with positive reciprocity capturing the predisposition to cooperate con-

ditionally on other's cooperation and negative reciprocity as the willingness to punish violations of cooperative norms, even if costly (Fehr and Gintis, 2007). Both positive reciprocity (Fehr and Fischbacher, 2003) as well as altruistic punishments and sanctioning institutions (Fehr and Gächter, 2002; Gurerk et al., 2006) promote cooperative behavior. Similarly, trust has been linked to cooperation (Glaeser et al., 2000), and although this view is contested (Bauer et al., 2019), social trust is held to be *"an important lubricant of a social system"* (Arrow, 1974) and a crucial component of social capital (Putnam et al., 2001). These foundations of human cooperation must be considered in solutions to the collective action problem of climate change. We contribute to this literature by examining how social preferences are connected to the support for climate policies.

In addition to measures of economic preferences, we also included other individual factors that have been previously identified in the academic literature as influencing support for climate change policies. Civic engagement and political orientation belong to the most important factors. Civic engagement incorporates various forms of interaction with people, from informing and listening through dialogue, debate, and analysis to implementing jointly agreed solutions (Hügel and Davies, 2020). Previous studies showed that civic engagement is positively associated with values, attitudes and behaviors (e.g., Corner et al., 2014; Andre et al., 2021; Nisbet, 2009). Lee et al. (2015) provide empirical evidence that civic engagement is one of the most important predictors of climate change awareness in the USA, Sweden and Sierra Leone. Engels et al. (2013) showed that climate change skepticism correlates negatively with political participation in Germany. Regarding political orientation, McCright et al. (2016) showed that left-orientated citizens reported stronger belief in climate change and support for action than right orientated citizen in Western European countries. Studies conducted in the USA found growing partisan and ideological polarization within the US population and that liberals and Democrats are more likely to express concerns about climate change compared to conservatives and Republicans (McCright and Dunlap, 2011).

While trust as an economic preference is measured as general trust towards strangers, trust can also be directed towards specific institutions. Previous meta-analysis showed that trust in scientists predicts climate change beliefs (Hornsey et al., 2016) and trust in governments predicts adaptation behavior (Van Valkengoed and Steg, 2019). Finally, Cologna and Siegrist (2020) find correlations for trust in scientists, environmental groups, and institutions with adaptation strategies. Our design allows us to investigate whether economic preferences influence individual support for climate policies in addition to these important individual factors of public support.

Climate-related events are regularly impacting people and in the future these incidences will most likely increase. Being personally harmed by or exposed to floodings, heat waves or droughts influences people's perception of climate change (Lujala et al., 2015; Capstick et al., 2015) and support for policies (Owen et al., 2012). Similar to climate hazards, the COVID-19 pandemic might influence policy support. Besides direct health consequences, the pandemic lead to income losses (Almeida et al., 2021; Josephson et al., 2021) and increased mental stress of citizens (Daly et al., 2022; Ravens-Sieberer et al., 2022). We investigate the impact of these recent disaster experiences on public support for ambitious climate policies.

Finally, our sample, which is representative of the German population at the sub-national level allows us to investigate regional correlates of individual support for climate change policies. Studies measuring public support for climate policies are typically conducted at the country-level with nationally representative samples (Bechtel and Scheve, 2013; Bechtel et al., 2021; Capstick et al., 2015; Lee et al., 2015; Lorenzoni and Pidgeon, 2006; Poortinga et al., 2019). Only few studies investigate regional differences in public support at the sub-national level. Using Bayesian approaches to compile data from national surveys, it can be shown that public opinion in the US about climate change varies across and within states (Howe et al., 2015). Similarly, data from the Cooperative Election Study demonstrates that public support for

renewable energy policies varies in the US with state-level energy policies (Stokes and Warshaw, 2017). We add to this literature, by investigating how regional economic, policy, and climate indicators influence public support for supranational climate policies.

3.3 Method and data collection

3.3.1 Data collection and survey design

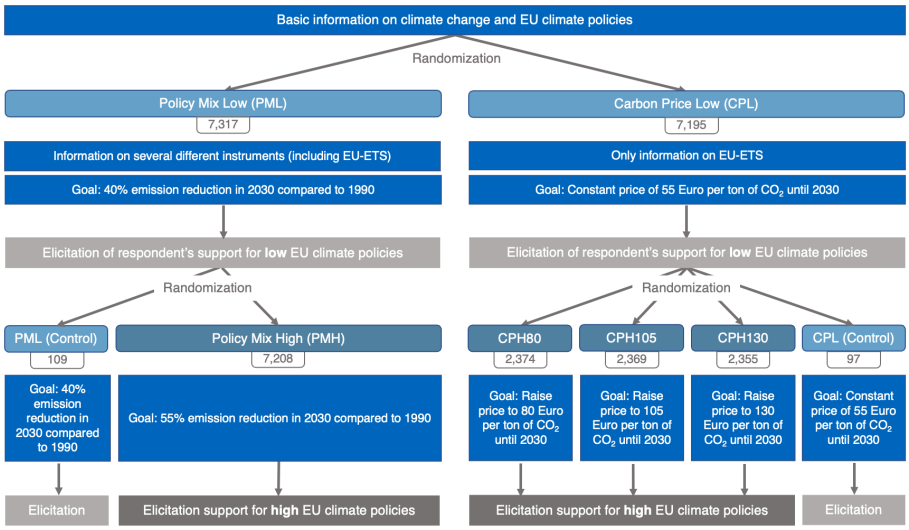
The effect of information provision about ambitious climate policies on public support is measured with a pre-registered online survey experiment in Germany. The data for the survey was collected from the 24th of August to the 23rd of October 2021. All information and survey questions were presented in the German language. Our sample is regionally representative of the resident population aged 18 and older. In particular, respondents are representative for gender and three different income groups (less than 1,500 Euro, 1,500 - 4,000 Euro, more than 4,000 Euro) across 38 NUTS2 regions.[2] National quotas deviate by less than 0.5 %. Quotas on NUTS2 level deviate by a maximum of 11.8 % with a median deviation of less than 1.8 %.[3] The survey was answered by a total of 15,007 respondents who were recruited by the market research institute respondi using the online surveying platform Qualtrics. One person had to be excluded because she did not finish the questionnaire. Another six participants were dropped due to unreasonable age specifications of more than 100 years. This leaves a total of 15,000 respondents.

In our experiment, we use vignettes in which respondents were asked to state their support for EU climate policies under different (hypothetical) scenarios. Figure 3.1 provides a summary of the survey experiment. Respondents were

[2]The NUTS classification (Nomenclature of territorial units for statistics) is a hierarchical system for dividing up the economic territory of the EU. NUTS2 represents basic regions for the application of regional policies.

[3]National and NUTS2 quotas for gender and population are based on data from eurostat, the statistical office of the European Union, from 2020. National and NUTS2 quotas for income are based on data from the German General Social Survey (ALLBUS) from 2018.

Figure 3.1: Survey Flow



randomly allocated between the Policy-Mix (PM) treatment and Carbon Price (CP) treatment (see Table B.1 in the Appendix for a randomization check across treatments). For each vignette, we elicit the respondent's support twice: First, under a scenario of low emission reduction goals (L), second, under an ambitious scenario of high emission reduction goals (H). In PML (PMH), respondents receive information about several different instruments (i.e., expansion of renewable energy, investment in energy efficiency and the EU Emissions Trading System (EU-ETS)[4]) that aim to reduce GHG emissions by 40 % (55 %) in 2030 compared to 1990. In CPL (CPH), respondents receive only information about the ETS and the price for $COCO_2$ of 55 Euro per ton which will be held constant (increase to 80/105/130 Euro) until 2030.[5] By taking the differences in support between PML (CPL) and PMH (CPH), we measure the effect of more ambitious EU climate policies on respondent's support. Analyzing the difference between PM and CP allows us to compare the effects of a mix of instruments and the carbon price instrument on public

[4]The EU-ETS is the EU's GHG emissions trading scheme. It works on the "cap and trade" principle meaning that a total amount of emittable GHGs is determined and emission allowances are traded within this cap resulting in a price for GHG emissions such as CO_2.

[5]see section 1.1 and 1.2 in the supplementary information (SI) for more details about the information presented to the respondents.

support. Having different carbon prices (80/105/130 Euro) in CPH allows us to estimate the responsiveness to increased carbon prices. In addition, for each treatment arm we introduced a control group. In the control group the low emission reduction goal (PML and CPL) was repeated to the respondents. The control treatment allows us to rule out that changes in public support are driven by the repeated elicitation and not by the changes in the described policy.[6]

3.3.2 INDIVIDUAL LEVEL DATA

The dependent variable in this study is individual support for EU climate policies. We asked participants whether they rejected or supported the measures taken by the European Union under the presented scenario. Responses were measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). To measure time, risk and social preferences (positive reciprocity, negative reciprocity, altruism and trust), we used experimentally validated measures of the Global Preference Survey (GPS) (Falk et al., 2018, 2023; Falk and Hermle, 2018). The items of the GPS are based on a validation procedure which involved conducting multiple incentivized choice experiments for each preference and testing the relative abilities of a wide range of different question wordings and formats to predict behavior in these choice experiments (Falk et al., 2023). For ease of interpretation, we follow Falk et al. (2018) and standardize (z-score) each preference measure at the individual level (see section B.1.3 of the Appendix for more details). Recent hazard experience was measured by asking respondents about financial losses related to the COVID-19 pandemic (5-point-scale) and whether they were directly or indirectly affected by the flood disaster in Germany in July 2021 (5-point-scale).[7] Left-right political orientation was measured on

[6] Since we do not analyze individual correlates in the control treatment, a smaller sample size is sufficient.

[7] In the period between 12th and 19th July 2021, several floods and flash floods occurred in Europe. Total losses are estimated as 54 billion dollars, making it the second most expensive natural disaster in 2021 after Hurricane Ida in the US (Munich Re NatCatSERVICE, 2022). At least 243 people died including 196 in Germany. The biggest impact of the flood disaster

a 10-point scale. The scale is frequently used in political and social surveys such as the German General Social Survey or the Eurobarometer. For the other individual-level measures, we computed the following summary indices: To measure beliefs in climate change, we construct an index from responses (4-point-scale) to 12 statements about climate change. Engagement in climate change action is a summary index consisting of seven questions measuring personal actions to protect the climate (5-point-scale). Both indices are based on statements that are taken from the detailed politics module developed as part of the Climate Change in the American Mind Project (Leiserowitz et al., 2013). Attitudes towards EU climate policies is a summary index consisting of four questions (4-point-scale) taken from the Special Report on Climate Change of the Eurobarometer. The summary index for trust in international (national) institutions is based on two (three) general trust questions related to the EU and United Nations (UN), respectively (city, state and national government). Institutionalized trust questions are frequently asked in the German General Social Survey as well as in the Eurobarometer. We provide summary statistics, reliability scores and more details about the construction of the variables in section B.3 of the Appendix.

3.3.3 Regional level data

We collected the following variables on the sub-national (NUTS2) level. The information on average GDP (per capita) over the years 2015 to 2019 is taken from the Eurostat database (Eurostat, 2022). The variables on the percentage of people employed in agriculture, fishing and mining, manufacturing, and services is based on values from 2016 and taken from the Quality of Governance (QoG) dataset from the University of Gothenburg (QoG, 2016). EU cohesion policies in EUR (per capita) is a summary index over four EU structural funds (Fund for European Aid to the Most Deprived (FEAD), European regional development fund (ERDF), European social fund (ESF), European agricultural fund for rural development (EAFRD)) for the programming period of 2014 to

occurred in the regions of North Rhine-Westphalia and Rhineland-Palatinate in the west of Germany.

2020. The data is taken from the website of the European Commission (European Commission, 2016b). The climate variables measure the differences in the mean precipitation and temperature between the periods 1985-1994 and 2005-2014, respectively. The climate data is taken from the website of the EU's Copernicus Project (EU Copernicus, 2022). We provide summary statistics and more details about the construction of the variables in section B.1.3 of the Appendix.

3.3.4 EMPIRICAL STRATEGY

First, we investigate treatment effects of our information provision experiment by applying parametric tests (t-tests) and regression analysis. Our within-subject design allows us to model the data as a panel. Using panel estimations for experimental data with multiple observations per individual is a common approach in experimental studies (Burlig et al., 2020; Charness et al., 2012). The statistical model underlying the results in Table 3.2 is

$$Support_{irt} = \alpha + \beta \times ClimatePolicyScenario_{rt} + \gamma' x_{irt} + \epsilon_{irt} \tag{3.1}$$

where $Support_{irt}$ is the support for climate policies of individual i living in region r receiving information t. $ClimatePolicyScenario_{rt}$ is a dummy variable which takes on the value 0 for information about low emission reduction goals (L) and 1 for information about ambitious emission reduction goals (H). Thus, the coefficient β represents the treatment effect of information about more ambitious climate policies (H) on individual support. The constant α represents the mean support for the low emission reduction goal scenario (L). x_{irt} is a vector of control variables. It includes socio-demographic characteristics (gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median values), income (indicator variable for above-median values), education level (indicator variable for tertiary education)), NUTS2 regional fixed effects, survey week fixed effects, and dummies for different levels of carbon prices (when applicable). Regional fixed effects and survey week fixed effects control for

omitted variable bias that is specific to regions or the interview time.[8] Standard errors are clustered at the regional NUTS2 level.[9] We run equation (3.1) for the pooled data (PM + CP), PM treatment, CP treatment and the control group (see Table 3.2).

Next, we investigate the association of individual factors with support for climate policies. We focus our analysis on more ambitious climate policies (H) as the goal of these policies is to reach the Paris agreement of keeping global warming to a minimum of 1.5 degrees. For the individual-level analysis, we regress the dependent variable on our individual-level measures. The statistical model underlying the results in Figure 3.3 is

$$\begin{aligned} Support_{ir} =& \alpha + \beta' EconPreferences_{ir} + \delta' RecentHazards_{ir} \\ &+ \zeta' OtherFactors_{ir} + \lambda \times InitialSupport_{ir} + \gamma' x_{ir} + \epsilon_{ir} \end{aligned} \tag{3.2}$$

where $Support_{ir}$ is the support for ambitious climate policies (PMH or CPH) of individual i living in region r. $EconPreferences_{ir}$, $RecentHazards_{ir}$ and $OtherFactors_{ir}$ are vectors of the measures listed in Figure 3.3. In addition, $InitialSupport_{ir}$ is the initial individual support for low emission reduction goals (L) to control for pre-beliefs about EU climate policies. Thus, estimated coefficients represent the estimated change in support as a result of more ambitious climate policies (H). x_{ir} is a vector that includes the following control variables: gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median values), income (indicator variable for above-median values), education level (indicator variable for tertiary education), NUTS2 regional fixed effects, survey week fixed effects, and dummies for different levels of carbon prices (when

[8] The fixed effects approach is an alternative to the multi-level model. A multilevel model assumes that there is neither unit-specific nor group-specific unobserved heterogeneity. Although we have randomized experimental data at the regional level, we can not rule out that unobserved factors such as migration patterns may violate the assumptions of the multilevel model. Table B.14 in the Appendix compares estimates of the fixed effects model and the multilevel model. Results remain qualitatively the same.

[9] We also applied clustered standard errors at the individual level. Results remain essentially unchanged.

applicable). Futhermore, we standardized all explanatory variables except for the indicator variables, i.e. to have a mean of zero and a standard deviation of one (z-score), so the coefficients of standardized variables can be interpreted as the change in supporting rates associated with a one standard deviation change in the explanatory variable.[10] Standard errors are clustered at the regional NUTS2 level.[11] The regression is run twice, once for the PM and once for the CP treatment. We run separate regressions to analyze the heterogeneity of individual factors across the two treatments.[12]

Finally, we explore possible explanations for cross-regional differences in individual support for EU climate policies. We conducted a series of OLS regressions in which a given regional-level variable was regressed onto individual support for ambitious climate policies (H). Previous experimental studies that investigated cross-country differences in behavior and beliefs followed a similar approach (e.g., Cohn et al., 2019; Gächter and Schulz, 2016). The statistical model underlying the results in Figure 3.4 is

$$Support_{ir} = \alpha + \beta \times RegionalFactor_r + \lambda \times InitialSupport_{ir} + \gamma' x_{ir} + \epsilon_{ir} \quad (3.3)$$

where $Support_{ir}$ is the support for ambitious climate policies (PMH or CPH) of individual i living in region r. $RegionalFactor_r$ is one of the average regional factors of region r (NUTS2 level) as shown in Figure 3.4. Again $InitialSupport_{ir}$ includes initial individual support for low emission reduction goals (L) as a control.[13] x_{ir} is a vector that includes the following control variables: gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median

[10] Qualitative interpretation of our results remain the same if we follow Gelman (2008) and re-scale with two standard deviations, see Figure B.2 in the Appendix.

[11] We also applied clustered standard errors at the individual level. Results remain essentially unchanged, see Table B.9 in the Appendix.

[12] We also run a pooled regression and interacted each individual factor with a treatment indicator. Results remain essentially the same (see Table B.13 in the Appendix). However, in terms of simplicity and visualization of results we present the results as described above and outlined in Figure 3.3.

[13] Results remain consistent when we exclude initial support (see Figure B.4 in the Appendix).

values), income (indicator variable for above-median values), education level (indicator variable for tertiary education), survey week fixed effects, and dummies for different levels of carbon prices (when applicable). We excluded NUTS2 fixed effects in equation (3.3) to explore the variation of different regional factors. Again, we standardized the non-binary explanatory variables to have a mean of zero and a standard deviation of one, so the coefficients can be interpreted as the difference in supporting rates associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at the NUTS2 regional level. The regressions are repeated separately for the PM and the CP treatment.[14] We also run regressions where we adjust the p-values for multiple hypothesis testing (see Figure B.7 in the Appendix).

3.4 Results

More ambitious EU climate policies decrease public support

Table 3.1: Pre-post differences in support for climate policies across treatments

	Observations	Policy Scenario L mean support		Policy Scenario H mean support		Difference		T-test p-value
Control group (overall)	206	3.539	(1.137)	3.519	(1.167)	0.019	(0.407)	0.494
Control group (PM)	109	3.817	(1.029)	3.789	(1.089)	0.028	(0.253)	0.259
Control group (CP)	97	3.227	(1.177)	3.216	(1.183)	0.010	(0.530)	0.849
Treatment group (overall)	14306	3.521	(1.137)	3.119	(1.305)	0.401	(1.136)	0.000
Treatment group (PM)	7208	3.825	(1.050)	3.579	(1.173)	0.246	(0.792)	0.000
Treatment group (CP)	7098	3.212	(1.139)	2.653	(1.266)	0.559	(1.384)	0.000

Notes. Standard deviations are in parentheses. P-values are based on one sample two-sided t-tests. 95 % Confidence Interval. Note that the low emission policy scenario was repeated in the control group. CP policy scenario H reports mean over all higher prices of 80/105/130 Euro per ton.

Table 3.1 reports descriptive statistics on the mean support and within-subject differences in mean support for EU climate policies (measured on a 5-point scale). As expected, no meaningful pre-post change in individual support was

[14] We also run a pooled regression and interacted the regional factors with a treatment indicator. Results remain essentially the same (see Table B.5 in the Appendix).

observed in the control group. These results rule out potential effects related to repetition. All treatment groups show significant pre-post differences.[15] This holds when we pool the treatments and for each treatment separately.[16] Moreover, the mean support in the low emission reduction goal treatments (L) is statistically not different from the control group means (overall: 3.521 vs. 3.539, mean difference (MD) = -0.018, 95% confidence interval (CI) (-0.175, 0.138), two sample two-sided t-test = -0.228, P = 0.819; PM: 3.825 vs. 3.817 , MD = 0.008, 95% CI (-0.190, 0.207), two sample two-sided t-test = 0.082, P = 0.935; CP: 3.212 vs. 3.227; , mean MD = -0.015, 95% CI (-.243, 0.213), two sample two-sided t-test = -0.129, P = 0.897). This indicates that participants were successfully randomized across treatments.

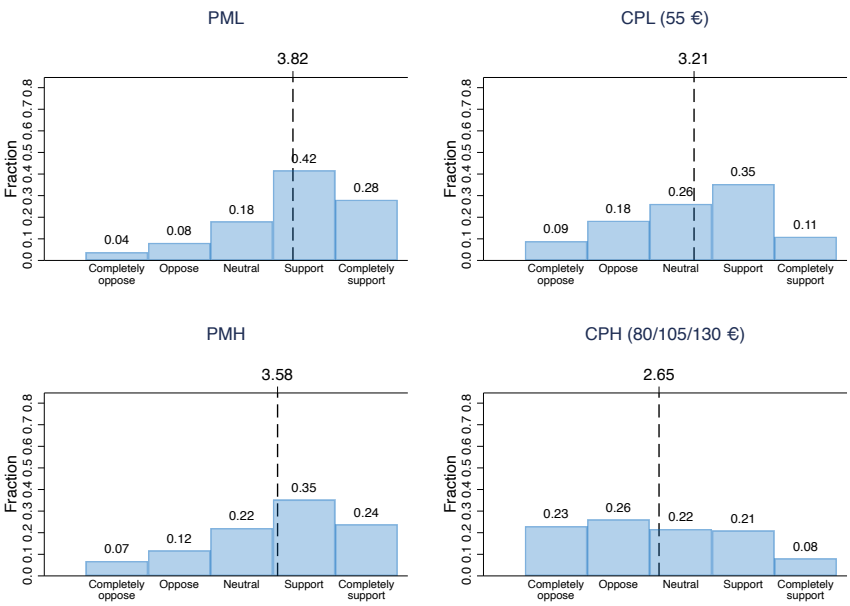
Figure 3.2 shows the distribution of individual support for EU climate policies before (PML, CPL) and after the information provision (PMH, CPH).[17] The mean support in PML is 3.82 and 3.58 in PMH (MD = 0.25, 95% CI (0.23, 0.26), one sample two-sided t-test = 26.37, P < 0.0001). The mean support in CPL is 3.21 and 2.65 in CPH (MD = 0.56, 95% CI (0.53, 0.59), one sample two-sided t-test = 34.02, P < 0.0001). Responses in the support and completely support category drop from 70% (46%) to 59% (29%) in the PM (CP) treatment. Thus, information provision about ambitious policies leads to a decline in public support. Turning to the comparison between treatments, public support is lower for the policy instrument of carbon pricing compared to general emission reduction goals as proposed by a mix of different policy measures (CPL vs. PML: MD = -0.61, 95% CI (-0.65, -0.57), two sample two-sided t-test = -33.50, P < 0.0001; CPH vs. PMH: MD = -0.92, 95% CI (-0.96, -0.86), two sample two-sided t-test = -45.67, P < 0.0001).

[15] It is worth pointing out that our results would also be significant with a much smaller sample size. Post-hoc power analyses reveal necessary sample sizes of $N = 85$ for PML vs PMH and $N = 51$ for CPL vs CPH (both with $\alpha = 0.05$ and $1 - \beta = 0.8$).

[16] All results reported based on t-tests are robust to using non-parametric Wilcoxon tests (for more details see section B.2.2 of the Appendix) Pre-post differences are also significant for the different carbon prices see (Table B.4 in the Appendix).

[17] For the distribution of individual support across the 5-point scale in the control group see Figure SB.1).

Figure 3.2: Support for climate policies across treatments



Notes. The figure shows the distribution of public support in the PML (PMH) treatment and CPL (CPH) treatment (average across different carbon prices). Support is measured on a 5-point scale (completely oppose to completely support with neutral option). Each panel indicates the average support as vertical lines (dashed).

Table 3.2: The impact of ambitious climate policies on support

	(1) Control	(2) Pooled	(3) PM	(4) CP
Constant (Policy Scenario L)	3.358***	3.549***	3.868***	3.173***
	(0.163)	(0.044)	(0.052)	(0.060)
Policy Scenario H	-0.019	-0.401***	-0.246***	
	(0.027)	(0.010)	(0.010)	
Policy Scenario H: CPH80				-0.465***
				(0.023)
Policy Scenario H: CPH105				-0.567***
				(0.028)
Policy Scenario H: CPH130				-0.644***
				(0.025)
Female	-0.084	0.112***	0.111***	0.093***
	(0.162)	(0.019)	(0.027)	(0.025)
Diverse		0.012	0.463	-0.329+
		(0.237)	(0.328)	(0.175)
Age (median)	0.039	-0.041+	-0.019	-0.068*
	(0.155)	(0.023)	(0.036)	(0.025)
Income (median)	0.007	0.029	0.037	0.041
	(0.174)	(0.018)	(0.024)	(0.027)
Tertiary education	0.171	0.237***	0.204***	0.251***
	(0.204)	(0.020)	(0.027)	(0.030)
Test of equality of coefficients				
CPH80 vs. CPH105				0.103
				(0.032)
				[0.003]
CPH80 vs. CPH130				0.179
				(0.032)
				[0.000]
CPH105 vs. CPH130				0.077
				(0.039)
				[0.060]
Survey week FE	Yes	Yes	Yes	Yes
Nuts2 FE	Yes	Yes	Yes	Yes
R^2	0.242	0.047	0.039	0.075
Observations	412	28594	14410	14184

Notes. * p<0.05, ** p<0.01, *** p<0.001. The coefficients are based on OLS regressions. The specification is based on equation (3.1). The dependent variable is individual support for climate policies (5 point scale). Note that the low emission policy scenario was repeated in the control group. The Wald tests reported at the bottom of the table are run on the null hypothesis that pairs of dummy coefficients identifying a treatment are equal to each other. Standard errors clustered at the sub-national level.

Table 3.2 provides results of an OLS regression based on equation (3.1). This exercise is done to test if our main findings are robust against potential confounders at the individual and regional level. The following main findings stand out: i) no significant effect in the control group (column 1), ii) negative and significant effect of ambitious climate policies on individual support (columns 2-4), and iii) significant decreasing support for increasing levels of carbon prices (column 4). The mean support rate decreases from -0.43 in the 80 Euro condition to -0.57 in the 105 Euro condition and -0.68 in the 130 Euro condition. On average, an increase of 25 Euro between the range of 55 Euro and 130 Euro leads to a decrease in support of about 0.22 on a 5-point scale, i.e., 4.4%. A Wald test at the bottom of Table 3.2 confirms that the coefficients of higher carbon prices are significantly different from each other.[18]

Economic preferences are substantially correlated with public support

Figure 3.3 reports the results of OLS regressions explaining public support for more ambitious climate policies through individual factors. We provide separate estimates for PMH and CPH.[19] Recall that the regressions control for the initial support of low emission reduction goals (L) and coefficients, therefore, capture the change in support as more ambitious climate change policies (H) are introduced.

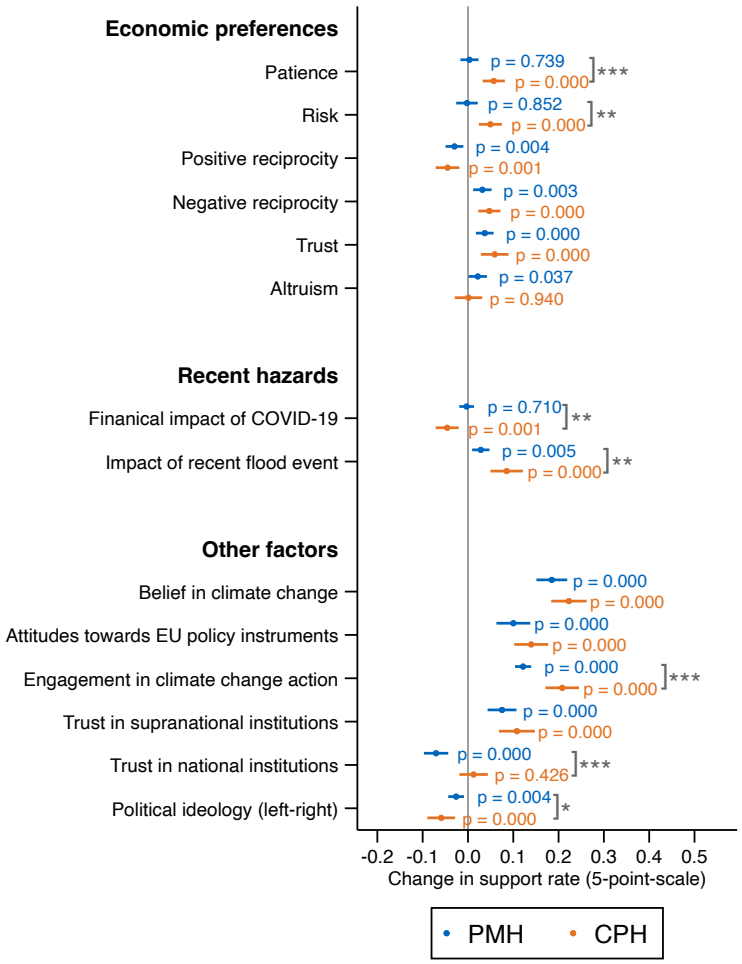
Economic preferences are related to individual support for more ambitious climate policies. Prosocial preferences - as measured by their levels of positive reciprocity, altruism and trust - are significantly correlated with individual support.[20] However, the coefficient of altruism is only statistically significant in the PMH treatment. Negative reciprocity, capturing different types of norm

[18] The difference between CPH105 and CPH130 is at the boderline of significance (P=0.060).

[19] Results are robust to OLS and ordered logistic regression models using different specifications regarding regional and experimental control variables (see Tables B.9 and B.11 in the Appendix).

[20] We follow previous studies and refer to prosocial preferences as positive other-regarding behaviors and beliefs, see (Fehr and Fischbacher, 2002; Kosse et al., 2020; Kosse and Tincani, 2020)

Figure 3.3: Association between individual factors and support for ambitious climate policies



Notes. The figure plots coefficients based on an OLS regression. The specification is based on equation (3.2). The dependent variable is individual support for climate policies (5 point scale). The coefficients of the non-binary explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Error bars indicate 95% confidence intervals obtained from standard errors that are clustered at the sub-national level. Stars indicate statistically significant differences between coefficients of PMH and CPH (* p<0.05, ** p<0.01, *** p<0.001.). Observations: PMH = 7,007; CPH = 6,919.

enforcement, is positively correlated with individual support for ambitious climate policies. Patience and risk-taking are positively correlated with individual support, but patience is only statistically significant in the CPH treatment. We only observe treatment heterogeneity in preferences for altruism and patience.

Recent experiences with hazards related to the COVID-19 pandemic and the flood disaster in Westphalia are significantly correlated with public support. Financial stress related to the COVID-19 pandemic significantly decreases support in CPH but is not significant for PMH. The direct and indirect experience of the flood event is positively correlated with individual support across both treatments, but significantly more in the carbon price treatment. These patterns confirm the important role of experience-based perception of hazards in explaining public support for climate policies (Demski et al., 2017).

Finally, and in line with previous empirical studies (Drews and Van den Bergh, 2016), factors such as belief in climate change, attitudes towards EU policy instruments, engagement in climate change action, and political ideology are significantly correlated with public support for climate policies. Interestingly, trust in supranational institutions is associated with higher public support in both PMH and CPH, while trust in national institutions is associated with more negative support in PMH. The first relationship is not surprising as our vignettes are based on EU policies. The latter relationship might point to potential conflicts between the national states and the EU.

Regional factors are correlated with public support

Figure 3.4 reports the results of OLS regressions for regional correlates with individuals' support for more ambitious climate policies (PMH, CPH), while Figure B.3 in the Appendix reports regional correlates with the level of individuals' support for low emission reduction goals (PML, CPL). We briefly focus on the support for the low emission reduction goals. Support is significantly lower in East Germany compared to West Germany and generally significantly

lower in less wealthy regions measured via the GDP per capita or via the amounts received from the EU cohesion funds (i.e., the per capita sum over EU Fund Aid to Most Deprived, EU Regional Fund, EU Social Fund, and EU Agricult. Fund for Rural Dev.). Besides economic variables, climate variables are correlated with the support for low emission reduction goals in the regions. Regions that experienced a drop in rainfall are correlated with higher support, as well as regions that experienced an increase in temperatures.

The regressions in Figure 3.4 control for the initial support of the low emission reduction goals (L) and coefficients show the change in support when more ambitious climate change policies (H) are introduced. Again, we provide separate estimates for PMH and CPH.[21]

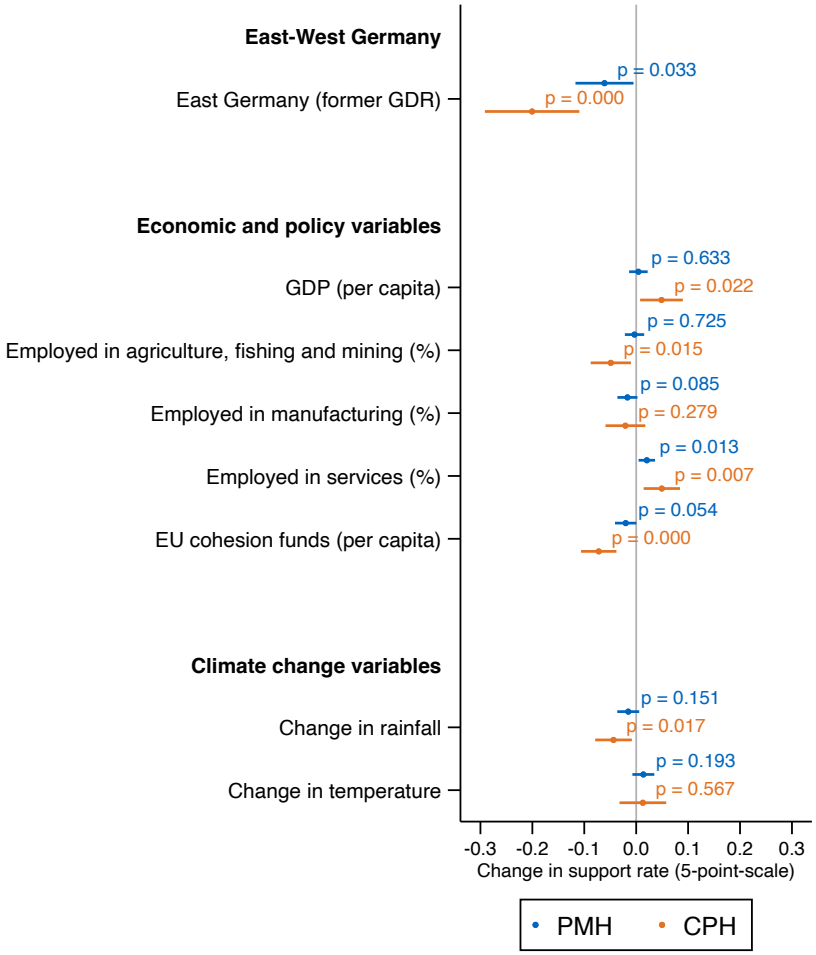
The estimates reveal that more ambitious policies amplify the differences in public support already present for the low emission reduction goals. Regions in East Germany have a stronger decline in support than regions in West Germany. Regional economic characteristics measured as GDP per capita, employment in economic sectors, and received EU cohesion funds per capita are significantly associate with changes in public support in at least one of our treatments. While the change in temperature has no additional impact beyond the already lower support for the low emission reduction goals, less rainfall (more draughts) increases support in CPH even more. These results provide empirical evidence that regional macro-economic and climate change indicators are important correlates of public support for supranational climate policies.

3.5 Discussion and conclusion

To address the impacts of climate change, various international agreements have been established and various policies have been implemented. Previous

[21] Results are robust to using ordered logistic regressions (see Figure B.6 in the Appendix) and remain essentially the same when we adjust the p-values for multiple hypothesis testing (see Figure B.7 in the Appendix).

Figure 3.4: Regional correlates of public support for ambitious climate policies



Notes. The figure plots coefficients based on an OLS regression. The specification is based on equation (3.3). The dependent variable is individual support for climate policies (5 point scale). Each coefficient has been estimated separately, non-binary explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Error bars indicate 95% confidence intervals obtained from standard errors that are clustered at the sub-national level. Observations: PMH = 7,205 (6,489 where 5 regions are missing), CPH = 7,092 (6,389 where 5 regions are missing).

research primarily focused on public support for these policies (see e.g., Drews and Van den Bergh, 2016). However, as more ambitious policies are required to meet the goals of the Paris Agreement, it is important to understand how public support changes. This study aims to fill this gap by examining how public support changes as more ambitious policies in addition to already existing policies are implemented.

In this study, more ambitious climate policies resulted in decreased support for these policies. This decline in support was more pronounced when the focus was on carbon prices rather than on a policy mix of different instruments to reduce greenhouse gases. When descriptions of more ambitious policies were provided, the share of subjects who (completely) supported the climate policies dropped from 70% to 59% for the policy mix, and from 46% to 29% for the focus on carbon prices. Our findings are consistent with previous research demonstrating the unpopularity of carbon prices (Cantner and Rolvering, 2022; Rhodes et al., 2017; Stadelmann-Steffen and Dermont, 2018; Levi, 2021b; Mildenberger et al., 2022; Carattini et al., 2018; Klenert et al., 2018; Maestre-Andrés et al., 2019), but also show that more ambitious policies are likely to further increase this unpopularity. This is particularly evident when we consider the percentage of subjects who (completely) oppose these policies. More ambitious policies increase the share from 12% to 19% when the policy mix is communicated, and dramatically from 27% to 59% if the focus is on carbon prices.

Carbon pricing is a key strategy advocated by most economists for addressing climate change, as it helps to incentivize the reduction of greenhouse gas emissions by putting a price on carbon-intensive activities (US Economists, 2019; EU Economists, 2019). However, our research suggests that an overemphasis on carbon prices in public debates, rather than emission reduction targets, could erode public support for climate policies. A description of carbon prices was present in all of our treatment arms, but the most drastic drop in support for climate change policies occurred when the emphasis was on actual prices and costs. This is in line with the results from a recent choice

experiment also conducted in Germany (Rinscheid and Wüstenhagen, 2019). The study revealed that respondents expressed a preference for an earlier coal-phase out, which might initially appear contradictory to our own results. However, the results also show that respondents' acceptance is sensitive to the costs of the energy transition. Specifically, when presented with the prospect of reducing job losses by half, people tend to support a delay in the phase-out process. Exploring preferences for redistribution of carbon tax revenues in Germany, Sommer et al. (2022) find decreasing support for increasing carbon taxes - which is in line with our results. Thus, to increase public support for ambitious emission reduction goals, policy makers may want to shift the focus of their communication from the cost side to the various co-benefits of these policies, such as technological innovation, green jobs, improved health outcomes, more affordable public transport, and reduced reliance on fossil fuel imports (Bain et al., 2016, 2012; Myers et al., 2012; Karlsson et al., 2020). Yet, carbon pricing will remain an important tool in the fight against climate change and appropriate ways of communication need to be identified. Recent evidence suggests that highlighting the efficiency argument behind carbon prices can increase public support (Cantner and Rolvering, 2022). As carbon prices are likely to increase due to more ambitious climate policies, it will be particularly important to communicate the benefits of these prices to the public. This might counteract the adverse effects on public support documented in our study and needs to be investigated in future studies.

In addition, this study is the first to systematically examine economic preferences, including time preferences, risk preferences, and pro-social preferences, as important factors in determining individual support for climate change policies. Our results suggest that individuals who are more patient, less risk averse, and more pro-social are more likely to support public policies aimed at combating climate change. These findings are particularly relevant in the context of the costs and benefits of climate change mitigation, as discussed in previous research by Stern (Stern, 2015; Stern and Stern, 2007) and Nordhaus (Nordhaus, 2007). For example, individuals with lower discount

rates, who place more value on the future, may be more willing to support ambitious climate policies that have higher immediate costs in the present but may also lead to reduced damages in the future. Therefore, cultivating economic preferences within the population through climate policies may increase the likelihood of their successful implementation and potentially improve the welfare of society as it confronts the challenges of emission reduction goals.

While we found consistent associations between economic preferences and policy support, other individual factors such as belief in climate change, personal engagement in climate action, attitudes towards the EU's climate policies and clean energy plans, and trust in supranational institutions are even more strongly associated with public support for climate policies. However, these factors may be influenced by economic preferences (see correlations in Table B.15). Previous studies have found correlations between economic preferences and various pro-environmental behaviors and attitudes (Andre et al., 2021; Schleich et al., 2019; Fischbacher et al., 2021; Lades et al., 2021). Therefore, it is important to consider these relationships and disentangle them in future research in order to better understand the drivers of public support for climate policies (Broomell et al., 2015).

Our results also show that recent experiences with hazards such as financial stress caused by the COVID-19 pandemic and the flooding in parts of Westphalia are related to public support for climate policies. The latter finding is also reflected in our analysis of regional correlates of public support. Less rainfall and higher temperatures at the sub-national level are associated with more willingness to support supranational climate policies. A recent meta-analysis of about 300 studies confirms that the experience of hazards and changes in temperature are significantly correlated with the awareness of climate change (Xia et al., 2022). These findings suggest that policy makers need to address both - personal hazard experiences and regional climate change - when communicating climate change policies. Making communications about climate change more proximal and concrete increases public perceptions

which is critical to combat climate change (Spence et al., 2012) .

Other regional factors are also correlated with public support. We observe lower support for climate policies in East Germany, which is in line with previously reported lower concerns for the consequences of climate change in these regions (Kountouris, 2021). Regions with lower economic development, either measured by the regional GDP or the received sum from EU cohesion funds are also associated with lower support. In addition, public support is associated with a region's economic activity when measured as employment in economic sectors. These findings are again stronger if an increase in carbon prices is highlighted and stress the importance of considering regional factors in the communication of supranational climate policies. For example, if broad public support across regions is necessary for the successful implementation of ambitious climate change polices a stronger focus should be put on regions with lower economic development. One potential strategy could be to emphasize the potential benefits for economic development in these specific areas. This could also include measures that combine funding from EU cohesion funds with increased support for the (re-)location of green economy businesses in these regions.

In our study, we present the findings from a German survey experiment that uses a representative sample at the regional level to examine support for more ambitious EU climate change policies. Our design allows us to investigate support for realistic policy changes. However, it is important to note that the results may not be generalizable to other countries or regions, and to policies outside of the EU. Furthermore, our dependent variable is based on self-reported support, which may not accurately reflect actual behaviors and actions taken to support these policies. These limitations call for further research to explore the generalizability of our results. Additionally, the results of our study indicate the potential challenges of communicating increasing carbon prices. Future research should investigate ways to minimize this decline in support while effectively communicating the benefits of carbon pricing.

4

Regional variation in social norm nudges

Sebastian J. Goerg, Andreas Pondorfer and Valentina Stöhr[1]

Abstract Public support is crucial for the effectiveness of ambitious climate policies, and social norm interventions have proven effective in fostering support. An open question is which norms should be communicated if support and estimated support for climate policies differ substantially between regions. In two studies, we investigate whether individuals accurately estimate the existing support and then explore the impact of national and regional norms on public support. Our results show that the norm on climate policy support is generally misperceived, i.e. the norm is higher than it is expected to be. This misperception increases with policy ambition and varies substantially between sub-national regions. Information about the national norm increases support, mostly in regions with below or above-average support. In contrast, interventions with regional norms are ineffective and even backfire in low-support regions. This demonstrates that norm nudges need to consider the regional aspects of the reference and target groups.

[1]The working paper this chapter is based on can be found here: `https://www.mgt.tum.de/faculty-research/munich-papers`. Own contributions to the chapter: conceptualization of the design, data collection and curation, empirical analyses and paper writing.

4.1 INTRODUCTION

Global climate policies are essential to solving the collective action problem related to climate change. Supranational institutions such as the European Union (EU) recently passed large programs (e.g., Fit-for-55) to drastically reduce greenhouse gas emissions by 2030. Such ambitious climate policies are urgently needed to mitigate the consequences of climate change and keep our world sustainable (McCollum et al., 2018; Robiou du Pont et al., 2017). However, strong public support for climate policies is crucial in order for them to be effective (Rhodes et al., 2017; Tjernström and Tietenberg, 2008; Geels, 2013; Drews and Van den Bergh, 2016; Stehr, 2015). A growing body of research in the behavioral and social sciences highlights the potentially productive role of social norms in changing behavior towards support for more climate change action (Bonan et al., 2020; Cialdini and Jacobson, 2021; Doherty and Webler, 2016; Jachimowicz, 2020; Van Valkengoed and Steg, 2019; Farrow et al., 2017; Goldstein et al., 2008). To date, one important aspect has been neglected: the large regional variation in behavior and beliefs between and within countries (Henrich et al., 2010; Falk et al., 2018). This becomes a vast challenge for large-scale coordinated interventions leveraging social norms to increase public support.

Previous studies have documented the wide variation in social norms across traditional societies and modern societies (Pelto, 1968; Ensminger and Henrich, 2014; Gelfand et al., 2011). The effect of norms on behavior is likely to depend on the cultural and economic context (Triandis, 2018; Schultz et al., 2007; Inglehart, 2020; Welzel, 2013; Gelfand et al., 2011). Yet, empirical evidence on the interplay between supranational climate policies and regional social norms is missing. This raises questions about the universal applicability of the existing social norm interventions aimed at changing behavior and beliefs. Furthermore, tapping into the regional diversity of social norms allows advancing our understanding of interventions that influence climate policy support and climate change action.

Using two experimental online surveys (study 1 and study 2) representative of the German population at the sub-national level, this paper makes three contributions to the literature on social norms and climate policy support. First, we find increasing misperceptions of social norms, i.e., people underestimate others' support of EU climate policies, even more so when these policies become more ambitious (study 1).[2] Second, we document substantial regional variation in misperceived social norms (study 1). Third, we demonstrate that norm interventions informing about the actual support in society at the national level are more effective in increasing individual support than interventions informing about support at the regional level (study 2). More precisely, we show that national norm interventions increase support only at the extreme ends of the sample population, i.e., where the regional average of support is either below or above the national average. In contrast, regional norm interventions backfire and decrease EU climate policy support in low-support regions.

Our paper contributes to the vast literature in psychology, sociology, and economics that documents the influence of social norms on behavior and preferences (Bicchieri, 2005, 2016; Krupka and Weber, 2013; Dimant and Gesche, 2023; Fehr and Fischbacher, 2004; Fehr and Schurtenberger, 2018). Experimental research has shown that interventions raising awareness about social norms increase pro-environmental behavior, such as recycling, energy, and water conservation or sustainable food choices (Cialdini and Jacobson, 2021; Jachimowicz et al., 2018; Wolske et al., 2020; Salazar et al., 2021). Additionally, norms are found to positively affect societal approval of climate policies concerning topics such as carbon taxes, green energy, food waste or pollution (Hurlstone et al., 2014; De Groot and Schuitema, 2012; Andre et al., 2021; Fesenfeld et al., 2022).

While most studies found a positive effect of social norms on pro-environmental behavior and policy support, recent empirical research shows that messages

[2] We refer to estimated support, i.e., the empirical belief about common behavior, as the descriptive norm.

of norm nudges might backfire (Bicchieri and Dimant, 2022). For example, when the social norm is not climate-friendly enough, pro-environmental behavior might decrease as behaving in a way that is bad for the environment is seen as socially acceptable (Blankenberg and Alhusen, 2019; De Groot and Schuitema, 2012; Agarwal et al., 2022). Thus, testing social norm nudges before implementing them on a large scale in order to prevent promoting the "wrong" social norm is essential (Bicchieri, 2023; Constantino et al., 2022; Bicchieri and Dimant, 2023). One crucial element of a norm nudge is the credibility of the reference group the norm is based on (Boon-Falleur et al., 2022; Bicchieri and Dimant, 2022). A norm from a group one feels close to might be more effective than from a larger but less familiar group (Bicchieri, 2023). Further, believes and behavior appear to be strongly linked to local social norms (House et al., 2020; Sparkman et al., 2022; Bollinger and Gillingham, 2012; Lede et al., 2019) and even arbitrary norms work better if the recipient identifies more with the group the norm is coming from (Pryor et al., 2019). Therefore, a regional norm - the regional population being closer - might have more impact than a national norm.

4.2 Study 1: Norms and misperceptions

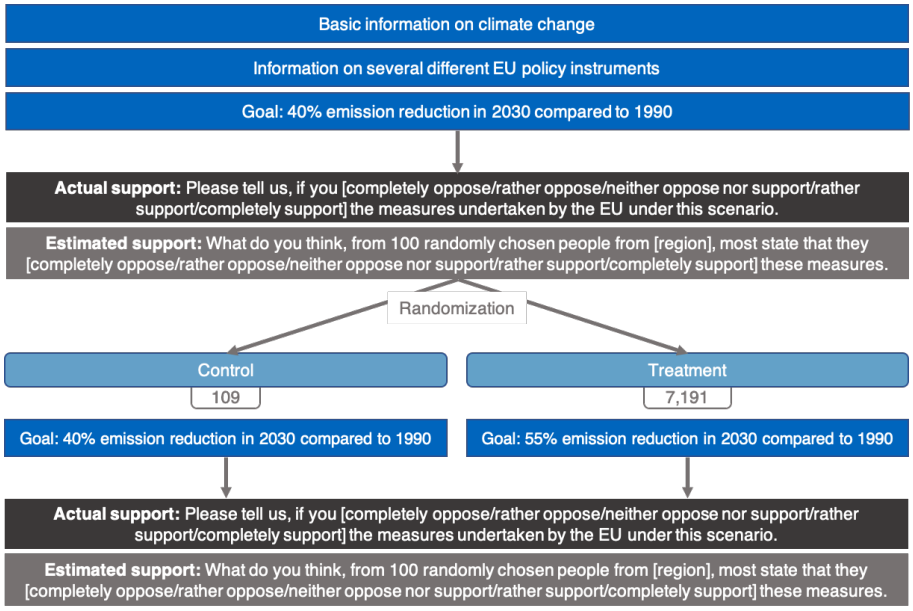
In this study, we apply an online experiment to test the impact of supranational policies on support and perceived social norms. We apply a within-subject design to study how support changes when respondents receive information about low emission reduction goals (low goals) and high emission reduction goals (high goals). Exploiting the representative nature of our dataset at the regional level, we explore regional variation of norms and investigate how accurate perceptions of norms are.

4.2.1 Data collection and survey design

The data for the pre-registered online survey experiment was collected from the 24th of August to the 23rd of October 2021. All information and survey

questions were presented in German language. Our sample is regionally representative of the resident population aged 18 and older. In particular, respondents are representative for gender and three different income groups (less than 1,500 Euro, 1,500 - 4,000 Euro, more than 4,000 Euro) across 38 NUTS2 regions. National quotas deviate by less than 0.5 %. Quotas on NUTS2 level deviate by a maximum of 11.8 % with a median deviation of less than 1.8 %.[3] Respondents were recruited by the market research institute respondi and the study was conducted using the online surveying platform Qualtrics. One person had to be excluded because she did not finish the questionnaire and four participants were dropped due to unreasonable age specifications of more than 100 years. Finally, 211 people did not give an answer to at least one of the questions on actual and estimated support. This leaves a total of 7,300 respondents, 109 of whom were part of the control group and 7,191 were in the treatment group.

Figure 4.1: Survey Flow



The experiment is set up as a hypothetical vignette study. Figure 4.1 provides

[3]National and NUTS2 quotas for gender and population in 2020 are based from the statistical office of the European Union (EUROSTAT). National and NUTS2 quotas for income are based on data from the German General Social Survey (ALLBUS) from 2018.

a summary of the survey experiment. The procedure was as follows. First, all respondents received basic information on the effect of GHG emissions, specifically CO_2, on global warming, and an average European household's CO_2 emissions. Second, several different EU policy instruments to reduce GHG emissions, i.e. the expansion of renewable energy, investment in energy efficiency and the EU-ETS were presented and participants are requested to suppose that the EU plans on reducing GHG emissions by 40% until 2030 compared to 1990. After asking individual support and their estimate of others' support for the aforementioned measures taken by the EU under this hypothetical low climate goals scenario, participants in the treatment group are requested to assume that the EU now wants to take on more ambitious, i.e. high, climate goals due to the *Green Deal* meaning that the GHG emission reduction goal is increased to 55% in 2030 compared to 1990. Afterwards, support and estimated support for the EU policy instruments under these new scenarios is elicited once again. For the control group, the initial scenario is repeated. Our control group is used to investigate whether repeatedly eliciting support and estimated support does influence the responses. No analysis at the regional level are intended for the control group and, therefore, a smaller sample was collected than in the treatment group. Table C.1 in the Appendix provides descriptive statistics for both treatment and control group.

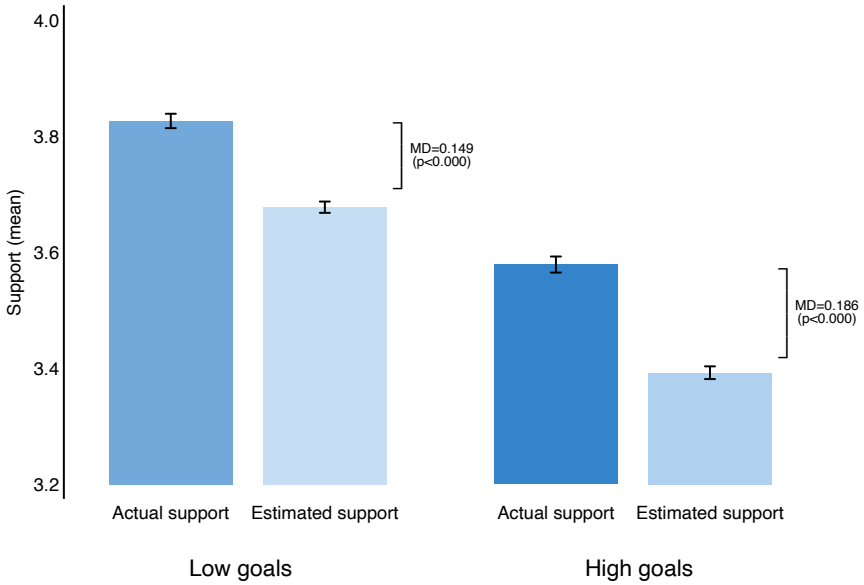
We elicited respondent's support for EU climate policies on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The same 5 point-scale was used to elicit respondent's estimate of others' support for EU climate policies. The question on estimated support was incentivized. Respondents were informed that they have a chance of winning 100 Euros if they guess the median answer on the 5 point-scale of 100 randomly drawn respondents for the question on support for EU climate policies correctly. This incentivation further motivates respondents to actually provide their best guess instead of giving a random answer and thus makes the results of this measure even more meaningful (Voslinsky and Azar, 2021). Behavioral studies used comparable elicitation methods to measure social norms (Krupka and Weber, 2013; Andre et al., 2021; Szekely et al., 2021).

Further, we collected the following control variables. Recent hazard experience was measured by asking respondents about financial losses and the personal burden they experienced due to the COVID-19 pandemic (5-point-scale) and whether they were directly or indirectly affected by the flooding (5-point-scale). To measure beliefs in climate change, we construct an index from responses (4-point-scale) to 12 statements about climate change. The implementation of climate protection in the EU, Germany and the respective NUTS2 regions was measured by asking whether climate protection was seriously pursued and implemented in the respective region (4-point scale). Trust in climate friendly companies and scientists was measured on a 4-point scale The summary index for trust in international (national) institutions is based on two (three) general trust questions related to the EU and UN, respectively (city, state and national government) also measured on a 4-point scale. See section C.1.5 in the Appendix for more details about individual-level measures.

4.2.2 Results

Figure 4.2 shows the average actual and estimated support for low and high EU climate goals (measured on a 5-point scale). For the low goals, the mean actual support is 3.83 and the mean estimated support 3.68 (mean difference (MD) = 0.149, 95% confidence interval (CI) (0.125, 0.172), two-sided t-test = 12.46, $p < 0.0001$, n = 7,191). For the high goals, mean actual support amounts to 3.58 and mean estimated support to 3.39 (MD = 0.186, 95% CI (0.163, 0.209), two-sided t-test = 15.95, $p < 0.0001$, n = 7,191). Thus, actual support is higher than estimated support for both low and high climate goals. This means that the misperception error (estimated support - actual support) is negative, i.e., respondents generally believe that society is less supportive than it actually is. This belief intensifies with higher climate goals, i.e., misperception becomes more negative with a mean of -0.15 before and -0.19 after the treatment (MD = 0.038, 95% CI (0.019, 0.056), two-sided t-test

Figure 4.2: Mean support for climate policies under low and high climate goals



Notes. The figure shows mean actual and estimated support once for the low and once for the high climate goals. Both actual and estimated support are measured on a 5-point scale (completely oppose to completely support with neutral option). Bars indicate standard error of the mean. "MD" is short for mean difference which is defined as the mean difference between the actual and estimated support for EU climate policies. The p-values refer to two-sided t-tests comparing actual and estimated support. Observations = 7,191.

= 3.96, p = 0.0001, n = 7,191).[4] In the control group, repeatedly asking for actual support (1st mean = 3.816, 2nd mean = 3.789, MD = 0.028, 95% CI (-0.021, 0.076), two-sided t-test = 1.135, p = 0.2587, n = 109) and estimated support (1st mean = 3.844, 2nd mean = 3.807, MD = 0.037, 95% CI (-0.045, 0.118), two-sided t-test = 0.894, p = 0.3735, n = 109) for the low policy goals does not significantly influence responses. All reported findings are robust with Wilcoxon tests and in OLS regressions with additional controls (see Table C.2 in the Appendix). Further, believe in climate change and positive attitudes towards EU climate policies significantly decrease the gap in the misperception error between treatments (see Figure C.2 in the Appendix).

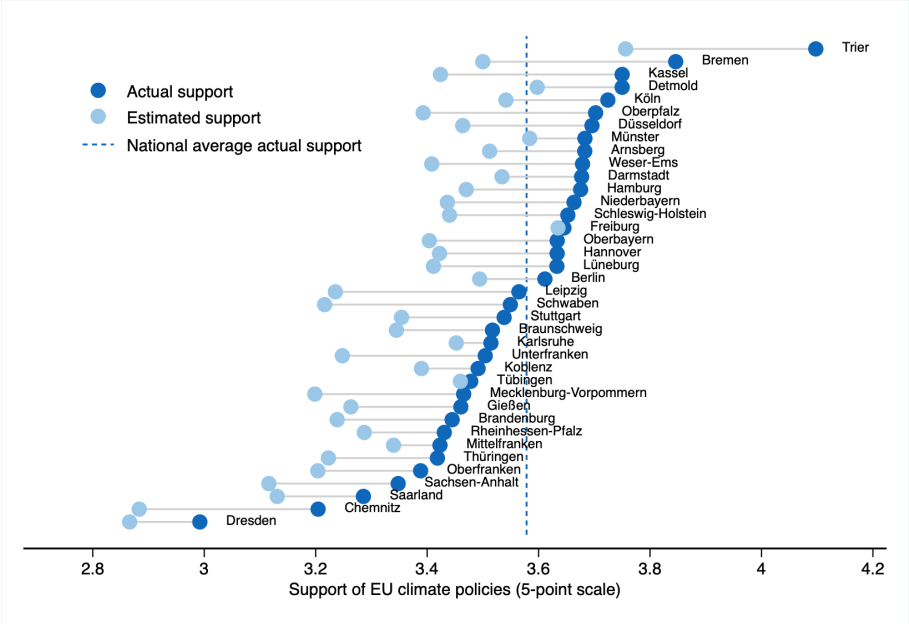
Figure 4.3 shows the regional variation in norm misperception for more ambitious EU climate policies (high climate goals), i.e., the difference between mean actual and estimated support across the 38 NUTS2 regions (see Figure C.3 in the Appendix for a comparison of the mean misperception error between low and high climate goals). Both actual and estimated support vary substantially between the different regions. Misperception ranges from a mean of -0.01 in Freiburg to a mean of -0.35 in Bremen.

Sorting the regions from lowest to highest regional misperception and testing the quartiles against each other substantiates this finding (1st vs. 2nd quartile: MD = -0.08, 95% CI (-0.148, -0.015), two-sided t-test = -2.39, p = 0.0168, n = 3,310; 2nd vs. 3rd quartile: MD = -0.05, 95% CI (-.011, -.001), two-sided t-test = -1.91, p = 0.0562, n = 4,528; 3rd vs. 4th quartile: MD = -0.09, 95% CI (-

[4]Within this paper we focus on the descriptive norm, i.e. the norm based on peoples' actual behavior, instead of the injunctive norm, i.e. the norm based on peoples' perception of peoples' actual behavior. We exclude the results for the injunctive norm from the main part of this paper for several reasons: Firstly, injunctive norms are more difficult to understand and are therefore likely less cost-efficient in actual campaigns. Secondly, results for the injunctive norm prove to be qualitatively the same, only the average magnitude of support is slightly higher. Thirdly, the change in misperception error from the low to the high climate goals is larger in the descriptive than the injunctive norm (injunctive norm mean error change = 0.014, descriptive norm mean error change = 0.038, MD = -0.025, 95% CI (-0.044, -0.006), two-sided t-test = -2.53, p =0.012,n = 7,173). Thus, the descriptive norm apparently leads to a stronger underestimation of society once more ambitious policies are involved. The results for the injunctive norm can be found in Figure C.1 in the Appendix. From the sample of 7,191 respondents, 18 did not answer the questions concerning the injunctive norm.

0.148, -0.032), two-sided t-test = -3.02, p = 0.0025, n = 3,881). These findings are robust in Wilcoxon tests except for the difference between the second and third quartile.

Figure 4.3: Regional heterogeneity in misperception error for high climate goals



Notes. The figure shows mean actual and estimated support for each of the 38 NUTS regions. Both actual and estimated support are measured on a 5-point scale (completely oppose to completely support with neutral option). Here, the misperception error is defined as the difference between mean actual and estimated support for EU climate policies within each respective NUTS2 region. The dashed line represents the national mean of actual support. Observations = 7,191.

4.3 Study 2: Norm interventions

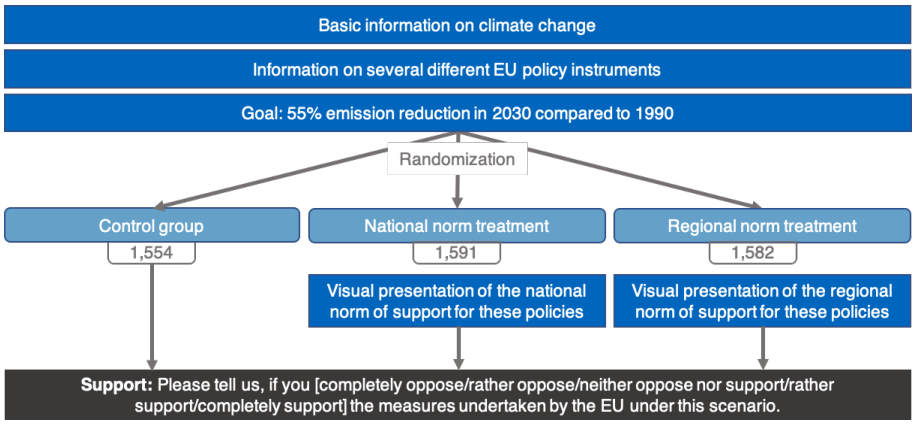
The first study shows that the social norm of support for climate policies in Germany is misperceived and that the misperception increases with policy ambition. Results also show that support levels and perceived support varies substantially between regions. In this second study, we apply a between-subject design and explore the effect of norm interventions on public support. We investigate whether the effectiveness depends on national or regional

norms being communicated in the interventions.

4.3.1 Data collection and experimental design

To elicit the effect of national and regional social norms we conducted a pre-registered online survey experiment in Germany. Data collection took place from the 19th of July to the 4th of August 2022. All information and survey questions were presented in the German language. The survey was conducted in eight different NUTS2 regions for which the sample is respectively representative of the resident population aged 18 and older. More specifically, respondents are representative for gender and three different age groups (18-40, 41-60, older than 60).[5] A total of 4,800 respondents were recruited by the market research institute bilendi and the study was conducted using the online platform Qualtrics. These 4,800 respondents are made up of the 600 respondents per each of the eight NUTS2 regions the survey was conducted in. Four people had to be dropped since they participated in the survey twice. 69 people opted not to answer the question on support. This leaves a total of 4,727 respondents.

Figure 4.4: Survey Flow



In this experiment, we use vignettes in which respondents were asked to state

[5] Quotas for gender and age are based on data from eurostat, the statistical office of the European Union, from 2021.

their support for EU climate policies employing different national and regional social norms. We specifically selected the three regions with the highest support[6] (Arnsberg, Detmold, Darmstadt) the two with average support (Lüneburg, Brandenburg) and the three with the lowest support (Dresden, Chemnitz, Saarland) from our first study[7] to conduct this second study in. Within each of these regions, respondents are randomly allocated between the national norm treatment, the regional norm treatment and the control group (see Table C.3 in the Appendix for a randomization check across treatments). Figure 4.4 provides a summary of the survey experiment. Same as in the first study, all respondents initially receive basic information on the effect of GHG emissions, on global warming, and an average European household's CO_2 emissions, as well as information on several different EU policy instruments to reduce GHG emissions. Participants are requested to suppose that the EU plans on reducing GHG emissions by 55% until 2030 compared to 1990, i.e. the ambitious climate policies scenario of the first study. In a next step, respondents in the national norm treatment see a visual presentation of the national norm of support for these policies which was measured in our first study. Respondents in the regional norm treatment see the same presentation however containing the regional norm of the respective NUTS2 region they are living in. Respondents in the control group do not see any visual representation nor any indication about a norm. Afterwards, respondents are asked to state their support for the aforementioned measures taken by the EU under this hypothetical scenario.

We elicited respondent's support for EU climate policies on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). We measure respondent's individual-level characteristics in the same way as in the first study.

[6]The highest support in Study 1 was actually measured in Trier, however this region is too small to retrieve a sample of 600 respondents and we excluded it from this survey.

[7]For this purpose support was turned into a dummy variable coded 1 for "rather support" or "completely support" and 0 otherwise. Based on this dummy, the national and regional norms were presented as percentages.

4.3.2 RESULTS

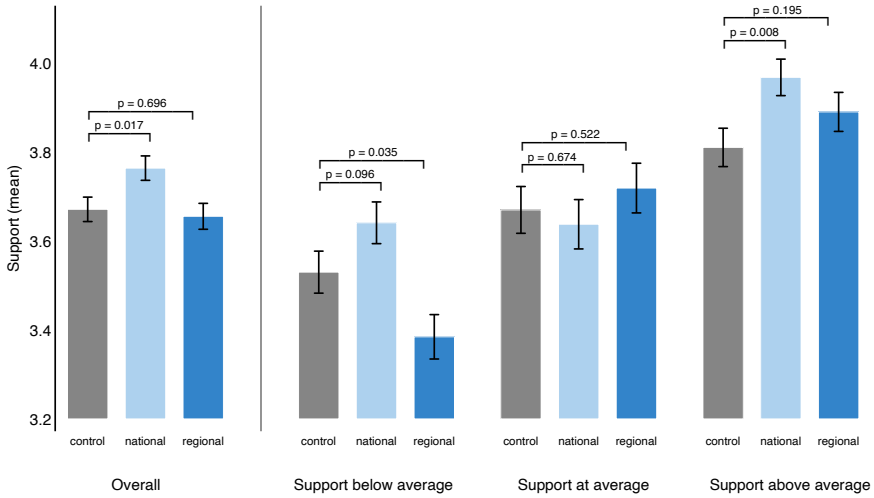
Figure 4.5 shows the mean support in the control and treatment groups split by regions with support below, at or above the national average. Confirming the results of study one, support substantially differs across regions.[8] The control group displays a mean support of 3.53 in the regions below the national average, 3.67 in the regions at the national average, and 3.81 in the regions above the national average (below vs. at national average: MD = -0.14, 95% CI (-0.281, 0.001), two-sided t-test = -1.95, p = 0.0520, n = 966; at vs. above national average: MD = -0.14, 95% CI (-0.273, -0.007), two-sided t-test = -2.06, p = 0.0394, n = 978). These findings are robust in Wilcoxon tests.

Looking at the overall effect, the national norm intervention is significantly increasing support compared to the control group (MD = -0.093, 95% CI (-0.016, -0.169), two-sided t-test = -2.39, p = 0.0171, n = 3,145), while the regional norm intervention has no impact (MD = 0.016, 95% CI (-0.063, 0.1094), two-sided t-test = 0.39, p =0.696, n = 3,136).[9] However, looking at the three regional groups in more detail the following pattern emerges: i) regional norm interventions significantly decrease support in regions where support is below the national average (MD = -0.15, 95% CI (-0.280, -0.010), two-sided t-test = -2.11, p = 0.0350, n = 1,177), ii) both - national and regional norm interventions - have no impact on support in regions where support is at the national average, and iii) national norm interventions have a significant positive effect on support in regions where support is above the national average (MD = 0.16, 95% CI (0.041, 0.274), two-sided t-test = 2.65, p = 0.0082, n = 1,190) and a weakly significant positive effect in regions where support is below the national average (MD = -0.161, 95% CI (-0.241, 0.020), two-sided t-test = -1.67, p = 0.096, n = 1,171). Thus, the overall positive effect of national norm

[8] A Spearman correlation shows a significant correlation between mean support within each of the eight NUTS2 regions from this survey's control group and mean support within each of the eight regions in the first survey (Spearman's rho = 0.786, p = 0.0208, n = 8). This implies that the regional ranking with regard to support is comparable between both studies.

[9] Support is also significantly higher in the national norm intervention than in the regional norm intervention (MD = 0.11, 95% CI (0.030, 0.187), two-sided t-test = 2.71, p = 0.0068, n = 3,173)

Figure 4.5: Support across treatments and levels of support in regions



Notes. The figure shows results for each of the two treatment groups and the control group. The national treatment group received information on a social norm based on the national average support of EU climate policies while the regional treatment group received this information based on respective regional average support. The control group did not receive any information on a social norm. The experiment was conducted in three regions that had a mean support below the national average, two regions with mean support at the national average and three regions with support above the national average. Error bars indicate standard errors of the mean. The p-values are based on two-sided t-tests comparing the control group to the national or regional treatment group, respectively. Observations: overall = 4,727 ; control = 1,554; national = 1,591; regional = 1,582.

interventions is mainly driven by behavioral responses to interventions at the extreme ends of the population. These findings are robust in Wilcoxon tests and OLS regressions with additional controls (see Table C.4 in the Appendix).

4.4 Discussion and conclusion

Effective implementation of ambitious climate policies relies on robust public support (Rhodes et al., 2017; Tjernström and Tietenberg, 2008; Geels, 2013; Drews and Van den Bergh, 2016; Stehr, 2015). Social norm interventions provide a powerful tool to increase climate friendly behavior and support for climate policies (Andre et al., 2021; Constantino et al., 2022; Cialdini and Jacobson, 2021). However, the utilization of norms to drive behavioral change requires careful consideration of various caveats, notably the regional dynamics of the reference and target groups, and the potential for norm messages to backfire (Bicchieri, 2023; House et al., 2020; Sparkman et al., 2022; Blankenberg and Alhusen, 2019). This paper sets out to address these caveats by looking into the variation in people's perception of others' support and the effect of national and regional norm interventions on support.

This chapter shows that respondents' estimation of other's support is generally lower than the actual average support. This misperception of social norms is in line with recent experiments conduced in the US finding similar results (Andre et al., 2021; Sparkman et al., 2022). Introducing more ambitious climate policies not only results in lower support but reduces the estimated support of others even further. Previous studies showed that policy can support social changes (Nyborg et al., 2016) and provide reasons for people to change their expectations (Young, 2015) to solve the collective action problem of climate change. The results of this study suggest that the current design of EU climate policies lead to changes in perceived social norms that may have the opposite effect: lack of support and decreasing climate change action.

Further, we show that these perceived social norms vary substantially across

sub-national regions in Germany. This indicates that regional norms may deviate strongly from national norms. Keeping in mind that local norms appear to be strongly correlated with peoples' believes and behavior (House et al., 2020; Sparkman et al., 2022; Bollinger and Gillingham, 2012; Lede et al., 2019) such a difference in underlying norms might play a considerable role in the formation of varying believes and behavior within a society. To this end, we conducted a second experiment to test the effectiveness of interventions using either national social norms or regional social norms as manipulation. The results reveal that - on average - national norm interventions are superior to regional norm interventions in increasing support for EU climate policies. However, the effect rests mainly on the positive effect of national norm interventions in regions where support is already higher compared to the national average. Regional norm interventions backfire in low support regions and decrease support even further. These findings are in line with Rinscheid et al. (2021) who claim that social norms may not work in the case of ambitious policies.

The results of this study have value for policy makers as national norm interventions may on average seem effective and cost-efficient but do not change attitudes and behavior among large fractions of the population. Nevertheless, the question of whether our results extend beyond Germany and the context of support for EU policies requires further investigation. Finally, this paper aligns with the literature's plea to explore the efficacy of social norm nudges (Bicchieri, 2023; Constantino et al., 2022; Bicchieri and Dimant, 2023) and establishes the importance to account for regional variations in social norms.

5

Conclusion and outlook

The goal of this doctoral thesis is to contribute to the attainment of the populations' willingness to accept climate change related policy changes. Specifically, it analyses the effect of political cues, different focal points in policy information provision and geographical variation in climate policy related social norms on the public's support for climate action. Each individual contribution, presented in Chapters 2 to 4, concludes with a summary of the methodological approach and experimental results as well as an outlook on future research opportunities. The following provides an aggregated conclusion on findings, contributions and future areas of research developed from this thesis.

5.1 Summary of findings and contributions

Seeing that the world has to act fast and in a comprehensive manner to tackle the already visible consequences of climate change, one key contributor to more ambitious and effective climate protection measures might be the behavioral sciences (De Coninck et al., 2018). Increasing support for climate change related policy changes is crucial to guarantee their success. One important player influencing not only the support for such policies but also the perception of protective measures as a whole are governments whether they act on the regional, national or supranational level. Within this thesis, I thus focus on Germany and its regional differences as an example for a national multi-party system integrated in the supranational organization of the EU.

The papers presented in this thesis provide an extensive picture of the individual as well as regional characteristics associated with different levels of support for climate protection and the public's perception of this support within the German population. Chapter 2 shows that whenever respondents receive unexpected information, they rely more on their own knowledge and beliefs. If they are more certain to know the truth, their desire for climate action is more robust. However, respondents individual preferences and characteristics generally seem to play an important role. All three papers show that a higher belief in climate change is associated with stronger and more robust support for climate protection. They also reveal that economic preferences such as patience, reciprocity, risk perception and trust as well as individual characteristics and beliefs like political orientation, voluntary engagement or attitudes towards the EU are influencing respondents' desire for climate action. Finally, support and the public's perception of it does not only vary individually but also regionally. Chapter 3 shows that support is higher in West than East Germany and generally higher in wealthier regions. Additionally, regions that are more strongly affected by the consequences of climate change - may it be through experiencing a flood, a drop in rainfall or an increase in temperature - are also more supportive of climate policies.

A concern that is revealed in Chapters 3 and 4 is the public's reaction to more ambitious climate policies. Support decreases for such higher climate goals. Additionally, the misperception error for the support of climate policies is negative, i.e. respondents generally believe that society is less supportive than it actually is, and becomes even more negative with more ambitious goals. This decline in support might be related to the status quo bias which becomes apparent in Chapter 2, i.e. respondents wish to maintain the status quo and therefore respond to more ambitious policies with even lower support.

Yet, this thesis also reveals several measures that can be undertaken to increase support for climate action and climate policies within the German population. Firstly, providing respondents with affirmative statements of their political leaders, especially so once the are unexpected, improves desire for action on climate protection. Secondly, providing information that focuses on the more vague goal of decreasing GHG emissions instead of the concreteness of carbon prices also increases support. Generally, focusing on the benefits instead of the costs of climate protection when communicating about climate change might attain more support. Thirdly, when it comes to social norm interventions, providing information on the national level is more helpful in increasing support than showing the social norm of regional peers. Nevertheless, this experiment shows that the regional component is still important to consider as the national norm only worked for some regions but not others and regional information provision even backfired in some cases.

5.2 Future areas of research

One result all three chapters show quite consistently is that respondents' individual believe in climate change and concern for the environment is a key factor predicting their support for climate policies and their perception of this support. While this is not necessarily a novel finding, it shows once more that more research into the mechanisms behind intrinsic motivation for climate protection is urgently needed. One effective way to increase this motivation

might sadly be through personal hazard experience. The example of the flood event in some parts of Germany presented in Chapter 3 impressively shows that witnessing firsthand the disastrous consequences of climate change makes people rethink their attitude towards climate protection. More research into this interrelation is therefore necessary and might even lead to indications as to how such a change in attitude can be achieved without the actual experience of a catastrophic event.

The example of the flood also shows another underrated factor when it comes to the research on climate policy support: regional variation. Even though the general public all throughout Germany was shocked to learn about the impact of the flood, the results of Chapter 3 show that it makes a difference whether people actually experienced this impact firsthand or only from media coverage. Chapters 3 and 4 generally point out the importance of regional considerations, making this another area of research that should be developed further. While this thesis focused on Germany and its sub-national differences, regional variation might work differently in other countries, especially outside the EU. This in turn leads to another area that should be further investigated, namely other supranational organizations, treaties and policies. While the EU is an important international policy maker, it is not the only institution acting on an international scale to advance climate protection. The impact of IPCC reports, COPs or the Paris Agreement on public support in different countries and their sub-national regions should be further analyzed to determine their contribution and how this contribution could be further improved.

In a similar manner, the EU is not the only institution readjusting their climate policies and improving their emission reduction goals. To be able to tackle the consequences of climate change means to advance our efforts in climate protection. Thus, it becomes more and more relevant to not only look at the status quo of support for climate policies but also how this support develops with more ambitious policies and how in turn these future policies can be designed to increase instead of decrease support in the population.

Finally, this thesis shows that countries with a multi-party system in some regards actually work differently when it comes to public climate policy support than countries with a two-party system. This means that not only more work on multi-party systems is necessary but also on other political systems like for example the one-party system existing in China. As already mentioned in the introduction of this thesis, the literature finds that most work on the interrelation of climate change perception and political leaders is done in Western English-speaking countries. Thus, while it is interesting and important to look at countries like Germany and supranational institutions like the EU, more work needs to be done on countries in the Global South. Not just because climate change is a global problem and should thus be examined on a truly global scale in all its regards but especially because these are the countries that evidently suffer most, now and in the future, from the consequences of climate change and thus have to play a more important role in our research on this global challenge.

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Appendix

A

Climate protection in Germany: party cues in a multi-party system

A.1 Materials and methods

A.1.1 Donation organizations

For each organization a short description was presented which was taken from the respective (whenever available German) websites of the organizations:

In favor of more climate protection:

Fridays for Future: "Fridays for Future: It refers to everyone that takes the climate protest to the streets. The climate strike movement is organized as an international, non-partisan, independent, and decentralized movement."

BUND (Union for the Protection of the Environment and Nature Germany): "BUND is committed to - for example - ecological agriculture and healthy food, climate protection and the expansion of renewable energies, protecting endangered species, forests and water. It is one of the biggest environmental associations in Germany."

In favor of less climate protection:

EIKE (European Institute for the Climate and Energy): "EIKE is a union of an increasing number of natural, human and economic scientists, engineers, publicists and politicians who regard the claim of a 'man-made climate change' as scientifically unjustifiable and therefore as a lie towards the population. Thus, EIKE rejects any kind of 'climate policy' since it is an excuse to patronize economy and society alike and to burden the population with levies." (Despite its name EIKE is a German lobbying organization)

CFACT (Committee for a Constructive Tomorrow): "CFACT was founded to promote a much-needed, positive alternative voice on issues of environment and development. Its co-founders, David Rothbard and Craig Rucker, strongly believed the power of the market combined with the applications of safe technologies could offer humanity practical solutions to many of the world's most pressing concerns. A number of leading scientists, academics, and policy leaders soon joined them, along with thousands of citizens from around the U.S. and around the world."

A.1.2 Experimental instructions

The following paragraphs outline the experimental instructions as shown to participants. Instructions have been translated from German.

Study 1

Below, a short text is presented to you.

The text provides an opinion assessment for the **[party]** concerning the urgency of action to be taken to protect the environment and climate during the current Corona-crisis. It is based on current quotes from the **[party]** and its politicians.

Please read the text carefully.

"[Pro statement/Con statement]"

Pro statement
Despite the current crisis, taking action to protect the environment and climate must not be neglected at the moment. Rebuilding the economy should be combined with such action as this is the only way an intact world can be preserved for subsequent generations.

Con statement
Counteracting the Corona-crisis and its fatal consequences for humans and the economy is currently more important than taking action to protect the environment and climate. First, the economy has to be rebuild and people have to be cared for, before we can go on protecting nature again.

STUDY 2

Below, several short texts are presented to you.

These texts provide an overview of **the opinions of all parties of the German government on the urgency of action to be taken to protect the environment and climate during the current Corona-crisis.** They are based on current quotes from the parties and their politicians.

Please read all texts carefully. It is important that you actually read all texts since you have to answer a question about them afterwards.

"[Pro consensus/disagreement/Con consensus]"

Pro statements

AfD: "Our concepts focus on the respective societies, without neglecting the vital dependency on intact natural cycles. Responsibility towards subsequent generations is what we stand for. A healthy environment is the basis of life for all people and future generations."

Bündnis 90/Die Grünen: "The only way to overcome the many current crises, is to make the economy future-proof and plead for purposeful investments. Consequent climate protection keeps our planet worth living on."

CDU: "We bank on sustainability: Social, economical and ecological issues have to be newly balanced repeatedly and reconciled with each other. We want to protect the environment and preserve our prosperity at the same time. However, in light of the complex challenges, we also clearly state: We better take an imperfect step towards the right direction than no step at all."

CSU: "The Corona-Crisis must not be used as an excuse to diminish climate protection measures. The question of climate change should be addressed at the same time as fighting the COVID-pandemic, not least due to taking into account the interests of future generations."

Die Linke: "Due to its high greenhouse gas emissions, Germany has a special responsibility to make progress in climate protection. Even in times of the Corona-crisis, the crisis of unbridled exploitation of the environment and climate has to stay in the focus of politics."

SPD: "This year we want to mainly focus on the consequences of the Corona-pandemic. Nevertheless, we may not loose sight of the future. The goal is to combine climate protection with social justice and economic progress. Or in short: Reconcile work and environment."

FDP: "Protection the climate is the biggest challenge of our time. But also the biggest chance. If we start being radically consequent. For us, effective climate protection, social acceptance and economic competitiveness are no opposites but the basis of a sustainable environmental policy."

Con statements

AfD: "Protecting nature must not happen at the expense of humans. In light of the more and more rapidly expanding Corona virus, especially affected societal groups need fast and effective economic emergency aid. For environmental policy has to first and foremost be guided by national actualities and needs."

Bündnis 90/Die Grünen: "Times of crisis are times of collaboration – even between the democratic parliamentary groups and the government. Due to the Corona-pandemic our country and the whole world are facing a challenge without precedent. Therefore it is absolutely necessary that we keep on strengthening our health system and at the same time cushion the economical and social consequences of the Corona-crisis."

CDU: "The Corona-pandemic is a serious situation – for our country and especially for our economy. The central message is: By all means, extensive and profound action is going to be taken to battle this crisis and to strengthen our economy. We bank on reason instead of ideology. Hysteria and excessive desire for action do not help us along."

CSU: "Fighting climate change demands strategy not ideology and the challenge we face due to the current crisis is immense. Thus our approach: Whatever it takes - we do whatever is necessary to overcome this crisis.

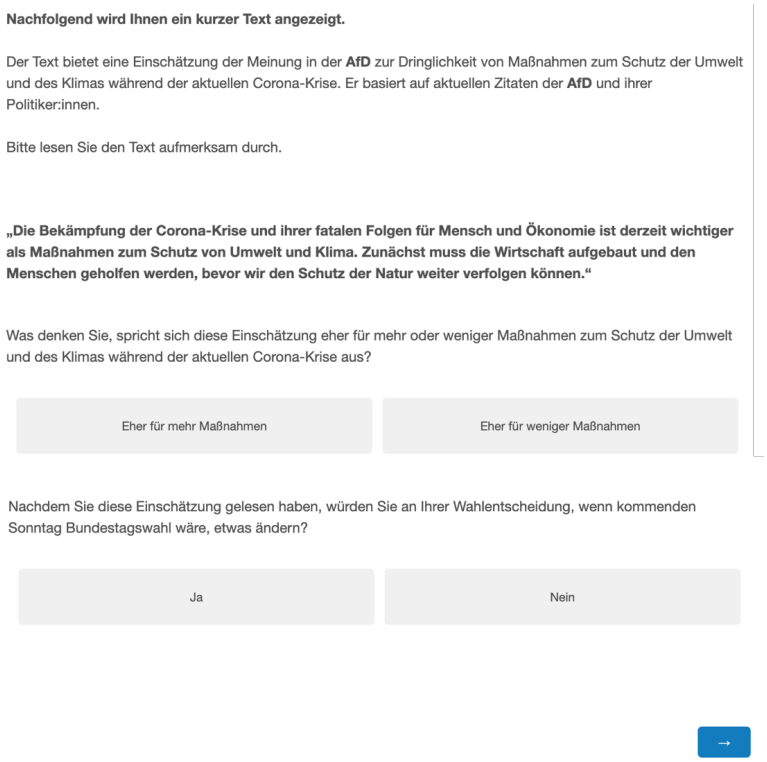
Die Linke: "First we defeat Corona. After that we save the climate. Nobody may be left behind during the crisis. We have to secure those people in our society that are affected by income shortages. After overcoming the pandemic, we need to tackle the problems for which we do not have a vaccine."

SPD: "Climate protection is effective if we create optimal conditions for everyone to participate. However, our country faces a difficult time due to Corona that keeps us all busy. What counts is a prudent and determined crisis management. Protecting our health is most important! And it is also about keeping the consequences of the crisis to a minimum."

FDP: "With the Corona-crisis we face a very serious situation for our country and our people. It is a threat to our health and our public life and medicinal protection must have first priority here. We need a good plan against an economic crisis after the health crisis and most of all fast, goal oriented and determined actions."

A.1.3 Survey Screenshots in German language

Screen Study 1



Screen Study 2

Nachfolgend werden Ihnen mehrere kurze Texte angezeigt.

Die Texte bieten einen Überblick über die **Meinungen aller Bundestagsparteien zur Dringlichkeit von Maßnahmen zum Schutz der Umwelt und des Klimas während der aktuellen Corona-Krise.** Sie basieren auf aktuellen Zitaten der Parteien und ihrer Politiker:innen.

Bitte lesen Sie alle Texte aufmerksam durch. Es ist wichtig, dass Sie wirklich alle Texte gelesen haben, da Sie anschließend eine Frage dazu beantworten müssen.

[Texte von allen Parteien]

Was denken Sie, stimmen die Meinungen der einzelnen Parteien eher überein oder widersprechen sie sich eher?

Widersprechen sich eher	Stimmen eher überein

Nachdem Sie diesen Meinungsüberblick gelesen haben, würden Sie an Ihrer Wahlentscheidung, wenn kommenden Sonntag Bundestagswahl wäre, etwas ändern?

Ja	Nein

→

A.1.4 Validation of credibility and intelligibility of treatment statements

In order to validate the use of the statements the respondents read in both surveys, an online survey was conducted in March of 2021 employing the surveying platform Qualtrics. Two credibility aspects were tested. First, the respondents were asked whether it seemed plausible that the statements were based on some recent quotes[1] from the respective parties and their politicians.[2] After that they had to state whether they perceived the statements as being in favor of more or less action to be taken to protect the environment and climate during the current COVID-19 crisis.[3]

The sample of 100 participants recruited by respondi was nationally representative of age and gender. A total of 29 respondents were dropped either because they stated low or no effort in answering the questions or answered the full survey in less than 4 minutes which would make it impossible to read all statements and quotes.

For survey 1, the two statements that are either in favor of more environmental and climate protection, hereafter referred to as the pro statement, or against more environmental and climate protection, hereafter referred to as the con statement, were presented in a random order together with some recent quotes from one of the seven parties that are part of the German parliament. For the con statement nine additional participants had to be dropped from the results as the wording of the statement was changed slightly after these first few respondents to improve upon its intelligibility.

The results show that with a mean of 4.07 and 3.30, respectively, both the pro and con statement were overall believed to be based on the given quotes

[1] The oldest employed quotes date back to November of 2019, the latest are from January 2021.

[2] This was measured on a 5-point Likert scale ranging from "completely disagree" to "completely agree".

[3] This was measured via a dummy variable with 0 being "in favor of less action" and 1 "in favor of more action".

for each party. The only exception was the con statement in connection with the quotes of the party "Bündnis 90/Die Grünen" which had a mean of 2.82, thus being only slightly below the value of 3 which means the respondents were overall indecisive about whether or not the statement could be based on the quotes from this particular party. For the intelligibility of the intention of the statements, it can be said that they were understood in the way they were intended to be, i.e. for the pro statement the mean answer was always below 0.5 and for the con statement always above 0.5 irrespective of the party quotes they were presented together with.

For survey 2, either the pro or con statement written specifically for each party was randomly presented together with recent quotes from the respective party and its politicians. The results are similar to the ones for survey 1 with all statements being overall believed to be based on the presented quotes, i.e. all means were above the value of 3, and again all statements being understood the way they were intended to be, i.e. for the pro statement the mean answer was always below 0.5 and for the con statement always above 0.5.

A.1.5 Wording of survey items and construction of summary indices

Female: Dummy variable that is coded as 1 if the respondent statet "female" as their gender and 0 otherwise.

Age: the age of the respondent ranging from 18 to 74 years.

Number of children: Dummy variable that is coded as 1 if the respondent stated to have children and 0 otherwise.

Place of residence: Dummy variable that is coded as 1 if the respondent stated to live in a major city and 0 otherwise.

Monthly net income: Coded as the mean of the monthly net income section (22 sections from "less than 200 Euro" to "7,500 Euro and more") the respondent selected to be in.

Education level (tertiary): Dummy variable that is coded as 1 if the respondent has at least a university degree, meaning any kind of university degree, doctor's degree or habilitation, and 0 otherwise.

Political interest: Measured on a 5-point Likert scale ranging from 1 "Very little" to 5 "Very much".

Own political orientation: Measured on a 10-point scale ranging from 1 "left" to 10 "right"

Support for favorite party: Measured on a thermometer scale from -5 for +5. The favorite party is determined by the respondent's selection of their favorite party out of the seven parties in the German parliament.

Support for treatment party: Measured on a thermometer scale from -5 for +5.

Political knowledge score: Based on the ALLBUS survey. The amount of correct answers to nine political knowledge questions. The questions are:

1. *"Which party do the following persons belong to? [Angela Merkel / Olaf Scholz / Helge Braun / Jörg Meuthen / Annalena Baerbock / Bernd Riexinger]"*
2. *"What is the meaning of the phrase 'Wahlgeheimnis'? [You are not allowed to talk about who you voted for / You are not told who you voted for, you can only vote for a party / No one is able to find out who you voted for except if you tell them / there is no 'Wahlgeheimnis' / Don't know]"*
3. *"Who elects the chancelor of the federal republic? [the people / 'Bundesrat' / 'Bundestag' / 'Bundesversammlung' / Don't know]"*

4. *"Who has the 'Richtlininekompetenz'? [Foreign minister / chancelor / Federal president / President of the 'Bundestag' / Don't know]"*

Sustainability score: Taken from Lange and Dewitte (2019) and first introduced by Schultz et al. (2005). The mean answer to ten question on own sustainable behavior measured on a 5-point Likert scale. The questions are: *"How often have you done each of the folllowing in the past year? ["never" / "seldom" /"sometimes" / "often" / "very often" / "not applicable"]*

1. *"Looked for ways to reuse things"*
2. *"Recycled newspapers"*
3. *"Recycled cans or bottles"*
4. *"Encouraged friends or family to recycle"*
5. *"Purchased products in reusable containers"*
6. *"Picked up litter that was not your own"*
7. *"Composted food scraps"*
8. *"Conserved gasoline by walking or bicycling"*
9. *"Voted for a candidate who supported environmental issues"*
10. *"Donated money to an environmental group"*

NEP score: The mean answer to the 15 questions of the revised NEP scale by Dunlap et al. (2000) measured on a 5-point Likert scale where 1 means "completely disagree" and 5 means "completely agree". The questions are:

1. *"We are approaching the limit of the number of people the earth can support."*
2. *"Humans have the right to modify the natural environment to suit their needs."*

3. *"When humans interfere with nature it often produces disastrous consequences."*
4. *"Human ingenuity will insure that we do NOT make the earth unlivable."*
5. *"Humans are severely abusing the environment."*
6. *"The earth has plenty of natural resources if we just learn how to develop them."*
7. *"Plants and animals have as much right as humans to exist."*
8. *"The balance of nature is strong enough to cope with impacts of modern industrial nations."*
9. *"Despite our special abilities humans are still subject to the laws of nature."*
10. *"The so-called „ecological crisis" facing humankind has been greatly exaggerated."*
11. *"The earth is like a spaceship with very limited room and resources."*
12. *"Humans were meant to rule over the rest of nature."*
13. *"The balance of nature is very delicate and easily upset."*
14. *"Humans will eventually learn enough about how nature works to be able to control it."*
15. *"If things continue on their present course, we will soon experience a major ecological catastrophe."*

Climate change knowledge score: Taken from Tobler et al. (2012). The amount of correct answers to seven questions on climate change. The questions are:

1. *"The global CO_2 concentration in the atmosphere has increased during the past 250 years."*

2. *"The increase of greenhouse gases is mainly caused by human activities."*
3. *"With a high probability, the increase of CO_2 is the main cause of climate change."*
4. *"Climate change is mainly caused by natural variations (such as changes in solar radiation intensity and volcanic eruptions)."*
5. *"The last century's global increase in temperature was the largest during the past 1000 years."*
6. *"The '90s were globally the warmest decade during the past century."*
7. *"Today's global CO_2 concentration in the atmosphere already occurred in the past 650,000 years."*

Trusting people in general: Measured on a 5-point Likert scale ranging from 1 "Distrust a lot" to 5 "Trust a lot".

Trusting parties: Measured on a 5-point Likert scale ranging from 1 "Distrust a lot" to 5 "Trust a lot".

Respondent would vote: Dummy variable that is coded as 1 if respondent would vote in the next national election and 0 otherwise.

Duration: Time it took the respondent to answer the survey measured in seconds.

Effort in answering: Measured on a 5-point scale ranging from 1 "None" to 5 "Very much".

A.2 STUDY 1

A.2.1 CONTROL VARIABLES

Control variables include personal data, i.e. gender, age, number of children, educational level, place of residence and birth country, as well as information on political interest and orientation, political and climate change knowledge, own sustainable behavior and beliefs about environmental change, overall trust and trust in parties, support of ones favorite party, a dummy on whether the respondent would vote or not and the duration of answering the questionnaire as well as self reported effort in answering it. Income was not used as a control variable as 115 people, i.e. six percent of the sample, did not answer this question, thus the sample size would have decreased remarkably, while the effect of this variable is negligible (see Table S1.A.4). For more details on all variables see section A.1.5 in the Appendix.

A.2.2 SUPPLEMENTARY ANALYSIS (ROBUSTNESS CHECKS)

This section describes the details of the supplementary analysis. The main purpose of the supplementary analysis is to test against potential confounders that may affect my results.

RANDOMIZATION CHECK

Table A.1 shows summary statistics across treatments and for the total sample. The last column includes p-values from a Pearson's χ^2 test for the null hypothesis that socio-demograhpic characteristics are different across treatments. The null hypothesis can be rejected at conventional levels of statistical significance($p < 0.05$).

PARAMETRIC AND NON-PARAMETRIC TESTS

The difference between the labeled vs. unlabeled groups is not statistically significant neither in parametric nor non-parametric testing (con: MD = 0.007, Wilcoxon rank-sum test, z = -0.379, P = 0.705, n = 961; con: MD = 0.01, 95% CI (-0.076, 0.090), two sample two-sided t-test = 0.166, P = 0.868, n = 961;

pro: MD = -0.020, Wilcoxon rank-sum test, z = -0.454, P = 0.650, n = 1,042; pro: MD = -0.02, 95% CI (-0.083, 0.044), two sample two-sided t-test = -0.611, P = 0.541, n = 1,042).

Looking at the absolute value desire for action, i.e. the magnitude of change, non-parametric testing appears insignificant (con vs. pro: MD = 0.030, Wilcoxon rank-sum test, z = 0.565, P = 0.572, n = 2,003) while a t-test shows to be significant (con vs. pro: MD = 0.030, 95% CI (0.003, 0.056), two sample two-sided t-test = 2.195, P = 0.028, n = 2,003).

Finally, turning to the effect of each treatment on its own, testing shows that only the pro label cues (M = 0.038, Wilcoxon matched-pairs signed-rank test, z = 4.760, P < 0.000, n = 923; 95% CI (0.016, 0.059), one sample two-sided t-test = 3.407, P = 0.001, n = 923) are significant in both kinds of tests, while the con labeled cues are only significant in the t-test (M = -0.033, Wilcoxon matched-pairs signed-rank test, z = 0.323, P = 0.747, n = 848; 95% CI (-0.062, -0.004), one sample two-sided t-test = -2.205, P = 0.028, n = 848) and the unlabeled cues are insignificant in either test (con x no label: M = -0.026, Wilcoxon matched-pairs signed-rank test, z = -0.344, P = 0.731, n = 113; 95% CI (-0.095, 0.044), one sample two-sided t-test = -0.733, P = 0.465, n = 113; pro x no label: M = 0.018, Wilcoxon matched-pairs signed-rank test, z = 1.332, P = 0.183, n = 119; 95% CI (-0.040, 0.075), one sample two-sided t-test = 0.613, P = 0.541, n = 119).

Additional specifications for OLS regressions of the treatment effects

Just like Table A.3, Tables A.4, A.5 and A.6 are all based on equation (2.1).

The statistical model underlying Table A.8 is:

$$\begin{aligned}\Delta Y_{id} =& \alpha + \eta \times pro_{id} + \mu^1 \times AfD_{id} + \mu^2 \times DieGruenen_{id} \\ &+ \mu^3 \times CDU_{id} + \mu^4 \times DieLinke_{id} + \mu^5 \times FDP_{id} \\ &+ \mu^6 \times SPD_{id} + \mu^7 \times CSU_{id} + \nu^1 \times pro_{id} \times AfD_{id} \\ &+ \nu^2 \times pro_{id} \times DieGruenen_{id} + \nu^3 \times pro_{id} \times CDU_{id} \\ &+ \nu^4 \times pro_{id} \times DieLinke_{id} + \nu^5 \times pro_{id} \times FDP_{id} \\ &+ \nu^6 \times pro_{id} \times SPD_{id} + \nu^7 \times pro_{id} \times CSU_{id} \\ &+ \gamma' x_{id} + \epsilon_{id}\end{aligned} \tag{A.1}$$

where ΔY_{id} is the change in one of the six action scores, i.e. $Adequacy$, $Urgency$, $LongTerm$, $Self$, Gov and $World$, or the donation decision of individual i living in district d from before to after reading the cue. pro_{id} is a dummy variable that is equal to 1 if the respondent got to read a pro statement and 0 otherwise. AfD_{id}, $DieGruenen_{id}$, CDU_{id}, $DieLinke_{id}$, FDP_{id}, SPD_{id} and CSU_{id} are dummy variables that are equal to 1 if the respondent got to read a cue from the respective party and 0 otherwise. x_{id} is a vector of the control variables listed in section A.2.1 of the Appendix. All explanatory variables except for dummies are standardized meaning they have a mean of zero and a standard deviation of one (z-score). Thus, their coefficients can be interpreted as the change in desire for action associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at district level, i.e. the German "Kreis".

Additional specification for OLS regressions of the unexpected cue dummy

The model, Table A.9 is based on, is:

$$\Delta DesireForAction_{id} = \alpha + \beta \times UnexpectedCue_{id} + \gamma' x_{id}^{tp} + \epsilon_{id} \tag{A.2}$$

where $\Delta DesireForAction_{id}$ is the change in the desire for action score of individual i living in district d from before to after reading the cue. $UnexpectedCue_{id}$

is a dummy variable that is equal to 0 if the cue is anticipated and 1 otherwise. A cue is considered anticipated if it is in line with how important the respondent expected climate change to be for the treatment party, i.e. if the cue is pro and the party is expected to care about climate change or vice versa. x_{id} is defined as before, however x_{id}^{tp} now also includes support for the treatment party. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run four times: for the respondents that support their treatment party and respectively received a con or a pro cue and for the ones that oppose their treatment party and respectively received a con or a pro cue.

Additional specifications for OLS and Probit regressions of the additional explanatory variables

Just like Table A.10, Tables A.11 and A.13 are based on equation (2.4).

The underlying model for Table A.12 is:

$$\Delta DesireForAction_{id} = \alpha + \gamma' x_{id}^{tp} + \epsilon_{id} \tag{A.3}$$

where $\Delta DesireForAction_{id}$ is the change in the desire for action score of individual i living in district d from before to after reading the cue. x_{id}^{tp} is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run six times: for all respondents that respectively received a con or a pro cue (here, support for the treatment party is excluded from the controls as not all respondents received a cue from a party), for the respondents that support their treatment party and respectively received a con or a pro cue and for the ones that oppose their treatment party and respectively received a con or a pro cue.

Just like Table 2.2, Tables A.14 and A.15 are based on equation (2.5).

EMPIRICAL STRATEGY FOR REGRESSIONS OF ALL OUTCOME VARIABLES SEPARATELY

Tables A.19 and A.20 are based on the following equation:

$$\Delta Y_{id}^{all} = \alpha + \lambda \times label_{id} + \gamma' x_{id} + \epsilon_{id} \tag{A.4}$$

where ΔY_{id}^{all} is the change in the score in one of the nine separate desire for action questions or the donation decision of individual i living in district d from before to after reading the cue. $label_{id}$ is a dummy variable that is equal to 1 if the respondent got to read a party labeled statement and 0 otherwise. x_{id} is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis" The regression is run twice, once for the respondents that read the con statement and once for those that read the pro statement.

The underlying model for Tables A.22 and A.23 is:

$$\Delta Y_{id}^{all} = \alpha + \beta \times UnexpectedCue_{id} + \gamma' x_{id}^{tp} + \epsilon_{id} \tag{A.5}$$

where ΔY_{id}^{all} is the change in the score in one of the nine separate desire for action questions or the donation decision of individual i living in district d from before to after reading the cue. $UnexpectedCue_{id}$ and x_{id}^{tp} are defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run twice, once for the respondents that read the con statement and once for those that read the pro statement.

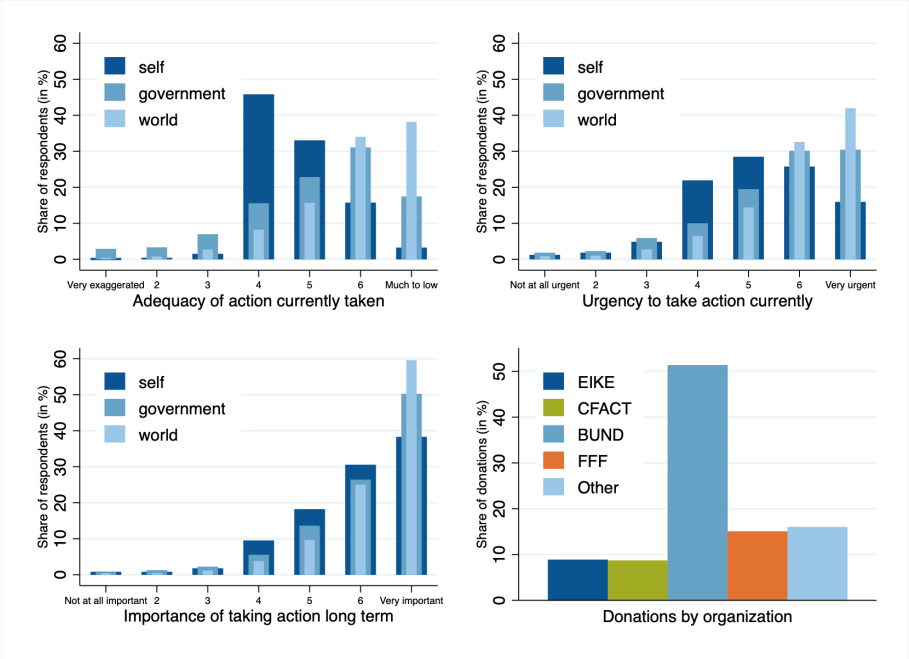
MULTIPLE HYPOTHESIS TESTING

I also present adjusted p-values to address concerns related to multiple testing (see Tables A.11). To do so, I applied the Stata module mhtreg developed by Andreas Steinmayr (link: `https://ideas.repec.org/c/boc/bocode/s458853.html`. It is based on the procedure introduced by List et al. (2019) which considers information about the dependence structure between hypotheses and thus yields greater statistical power to reject truly false null hypotheses compared to Bonferroni or Holm procedures. Adjusted p-values are calculated using a

bootstrap with 10,000 replications. The statistical inference does not change. Most coefficients remain statistically significant at the significance levels of 95 % and 90 %, respectively.

A.2.3 TABLES AND FIGURES

Figure A.1: Distribution of answers before treatment



Notes. Organizations against more climate protection: EIKE = "Europäisches Institut für Klima und Energie", CFACT = "Committee for a Constructive Tomorrow"; Organizations in favor of more climate protection: BUND = "Bund für Umwelt und Naturschutz Deutschland", FFF = "Fridays for Future".

Table A.1: Descriptive statistics and randomization check

	con x no label		con x label		pro x no label		pro x label		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	p-value
Age	47.30	(14.24)	46.27	(15.52)	46.14	(15.59)	46.07	(15.27)	0.645
Female	0.44	(0.50)	0.52	(0.50)	0.57	(0.50)	0.51	(0.50)	0.212
Income	2174.29	(1492.94)	2013.61	(1341.85)	1943.53	(1241.14)	2000.42	(1297.73)	0.383
Working	0.64	(0.48)	0.60	(0.49)	0.56	(0.50)	0.62	(0.49)	0.625
Unemployed	0.06	(0.23)	0.07	(0.26)	0.07	(0.25)	0.07	(0.25)	0.900
Student	0.07	(0.25)	0.10	(0.30)	0.14	(0.35)	0.10	(0.30)	0.682
Pensioner	0.22	(0.42)	0.21	(0.40)	0.19	(0.39)	0.19	(0.39)	0.833
Observations	113		848		119		923		

Notes. "Age" is the age of the respondent ranging from 18 to 74 years. "Female" is coded as 1 if the respondent was female and 0 otherwise. "Income" is coded as the mean income of the income section (22 sections from "less than 200 Euro" to "7,500 Euro and more") the respondent selected to be in. "Working" is coded as 1 if the respondent stated to either work full-time or part-time or to be self-employed and 0 otherwise. "Unemployed" is coded as 1 if the respondent is unemployed and either looking for a job or not and 0 otherwise. "Student" is coded as 1 if the respondent stated to either be a student at a university or school or doing an apprenticeship and 0 otherwise. "Pensioner" is coded as 1 if the respondent is a pensioner and 0 otherwise. The last column shows p-values for the null hypothesis of perfect randomization (χ^2-tests).

Table A.2: Wilcoxon tests: Effect of the treatment groups (including all respondents)

	Desire for action		Donations	
	(1)	(2)	(3)	(4)
	con	pro	con	pro
Rank Sum (no label/label)	0.916	0.344	0.916	0.344
	(-0.105)	(-0.946)	(-0.105)	(-0.946)
Signed-Rank (no label)	0.734	0.322	0.851	0.639
	(0.340)	(0.990)	(-0.188)	(0.469)
Signed-Rank (label)	0.175	0.000	0.073	0.643
	(1.357)	(5.164)	(1.791)	(0.463)

Notes. Z statistics in parentheses. Tests are run with the change in desire for action, respectively donations, from before to after the treatments.

Table A.3: OLS regression analyses: Effects of the treatment groups

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Delta of	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
pro	0.069	0.069	-0.022	0.019	0.120*	-0.023	0.619
	(0.056)	(0.082)	(0.064)	(0.056)	(0.052)	(0.065)	(2.168)
label	0.033	-0.019	-0.032	0.014	0.044	-0.075	-0.095
	(0.049)	(0.071)	(0.047)	(0.046)	(0.045)	(0.057)	(1.800)
pro × label	-0.034	0.064	0.069	0.038	-0.059	0.119+	-0.142
	(0.061)	(0.087)	(0.070)	(0.060)	(0.059)	(0.070)	(2.224)
Constant	-0.025	-0.132	-0.112	-0.159+	-0.080	-0.030	-1.446
	(0.088)	(0.135)	(0.108)	(0.087)	(0.091)	(0.120)	(2.591)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2003	2003	2003	2003	2003	2003	1995
R^2	0.022	0.032	0.013	0.026	0.025	0.027	0.008

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables. All included controls are listed in section A.2.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.4: OLS regression analyses: Effects of the treatment groups (with income variable)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Delta of	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
pro	0.054	0.023	-0.032	-0.013	0.114*	-0.056	0.520
	(0.056)	(0.083)	(0.064)	(0.056)	(0.052)	(0.065)	(2.374)
label	0.016	-0.051	-0.034	-0.016	0.038	-0.092	-0.866
	(0.049)	(0.071)	(0.048)	(0.045)	(0.045)	(0.058)	(1.894)
pro × label	-0.013	0.127	0.092	0.083	-0.041	0.163*	0.354
	(0.061)	(0.086)	(0.069)	(0.058)	(0.058)	(0.069)	(2.413)
Monthly net income	0.006	0.011	0.022+	0.003	0.023+	0.014	-0.031
	(0.012)	(0.015)	(0.013)	(0.010)	(0.012)	(0.012)	(0.415)
Constant	0.040	-0.047	-0.025	-0.048	-0.020	0.036	-0.652
	(0.087)	(0.131)	(0.099)	(0.080)	(0.085)	(0.120)	(2.769)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1888	1888	1888	1888	1888	1888	1880
R^2	0.022	0.035	0.016	0.026	0.027	0.030	0.009

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables. All included controls are listed in section A.2.1 of the Appendix. The income variable is standardized. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.5: OLS regression analyses: Marginal effects of the treatment groups

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Delta of	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
con × no label	0.015	-0.036	-0.059	-0.041	-0.050	0.010	0.782
	(0.045)	(0.065)	(0.042)	(0.041)	(0.040)	(0.053)	(1.650)
con × label	0.048*	-0.055*	-0.091***	-0.027	-0.006	-0.066***	0.687
	(0.019)	(0.023)	(0.022)	(0.017)	(0.018)	(0.018)	(0.740)
pro × no label	0.084*	0.033	-0.081	-0.021	0.070*	-0.013	1.401
	(0.037)	(0.048)	(0.049)	(0.037)	(0.032)	(0.041)	(1.341)
pro × label	0.082***	0.078***	-0.044**	0.031*	0.055***	0.030*	1.164+
	(0.015)	(0.019)	(0.016)	(0.013)	(0.015)	(0.014)	(0.594)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2003	2003	2003	2003	2003	2003	1995

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables. Except for treatment party dummies, all controls listed in section A.2.1 of the Appendix are included. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.6: OLS regression analyses: Marginal effects of the treatment groups (including all respondents)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Delta of	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
con × no label	0.082*	-0.054	-0.090*	-0.013	-0.038	-0.011	0.524
	(0.041)	(0.058)	(0.045)	(0.037)	(0.036)	(0.041)	(1.363)
con × label	0.067***	-0.045*	-0.079***	-0.008	0.004	-0.053**	0.820
	(0.018)	(0.021)	(0.019)	(0.017)	(0.016)	(0.017)	(0.610)
pro × no label	0.063+	0.033	-0.061	-0.021	0.088**	-0.032	0.728
	(0.036)	(0.042)	(0.048)	(0.036)	(0.032)	(0.038)	(1.203)
pro × label	0.084***	0.067***	-0.055**	0.012	0.046**	0.038**	0.925+
	(0.014)	(0.018)	(0.017)	(0.013)	(0.015)	(0.014)	(0.518)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2500	2500	2500	2500	2500	2500	2487

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables. Except for treatment party dummies, all controls listed in section A.2.1 of the Appendix are included. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.7: Wilcoxon tests: Effects of the treatment groups

	(1) Adequacy	(2) Urgency	(3) Long Term	(4) Self	(5) Gov	(6) World
Rank Sum (con x no label/label)	0.626	0.944	0.842	0.891	0.210	0.632
	(-0.488)	(-0.071)	(-0.199)	(-0.137)	(-1.254)	(0.479)
Rank Sum (pro x no label/label)	0.954	0.913	0.503	0.139	0.581	0.329
	(0.058)	(-0.109)	(-0.670)	(-1.481)	(0.552)	(-0.977)
Signed-Rank (con x no label)	0.431	0.749	0.084	0.636	0.383	0.880
	(0.787)	(-0.319)	(-1.726)	(-0.473)	(-0.873)	(-0.151)
Signed-Rank (con x label)	0.001	0.514	0.000	0.348	0.203	0.063
	(3.429)	(-0.652)	(-4.381)	(-0.938)	(1.272)	(-1.861)
Signed-Rank (pro x no label)	0.011	0.100	0.081	0.718	0.015	0.998
	(2.557)	(1.645)	(-1.744)	(-0.362)	(2.423)	(0.003)
Signed-Rank (pro x label)	0.000	0.000	0.001	0.001	0.000	0.003
	(5.990)	(4.944)	(-3.183)	(3.206)	(4.705)	(2.979)

Notes. Z statistics in parentheses. Tests are run with the change in desire for action, respectively donations, from before to after the treatments.

Table A.8: OLS regression analyses: Marginal effects for all party labels separately

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Delta of	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
con × AfD	0.029	0.004	-0.006	-0.032	0.039	0.021	0.024
	(0.035)	(0.049)	(0.044)	(0.037)	(0.036)	(0.034)	(1.831)
con × Die Grünen	0.076	-0.015	-0.165***	-0.033	-0.015	-0.057	-0.200
	(0.055)	(0.060)	(0.047)	(0.044)	(0.044)	(0.045)	(1.235)
con × CDU	0.092	-0.100	-0.069	-0.053	0.018	-0.042	0.574
	(0.062)	(0.070)	(0.050)	(0.051)	(0.051)	(0.050)	(1.509)
con × Die Linke	0.013	-0.129+	-0.092	-0.074+	-0.012	-0.122*	5.703**
	(0.052)	(0.075)	(0.056)	(0.043)	(0.055)	(0.054)	(2.081)
con × FDP	0.127***	-0.011	0.002	0.104***	0.007	0.006	-0.284
	(0.038)	(0.041)	(0.043)	(0.031)	(0.035)	(0.034)	(1.201)
con × SPD	-0.019	-0.052	-0.200*	-0.037	-0.087	-0.147*	-0.317
	(0.052)	(0.076)	(0.091)	(0.054)	(0.059)	(0.069)	(1.621)
con × CSU	0.017	-0.089	-0.116*	-0.069	0.005	-0.123*	-0.279
	(0.042)	(0.064)	(0.054)	(0.043)	(0.046)	(0.049)	(2.463)
con × None	0.015	-0.036	-0.059	-0.041	-0.050	0.010	0.783
	(0.045)	(0.066)	(0.043)	(0.041)	(0.041)	(0.053)	(1.654)
pro × AfD	0.106**	0.036	-0.055+	0.049	0.015	0.023	1.051
	(0.036)	(0.051)	(0.030)	(0.031)	(0.032)	(0.034)	(1.667)
pro × Die Grünen	0.080*	0.104*	-0.076+	0.031	0.042	0.036	2.563+
	(0.038)	(0.048)	(0.040)	(0.031)	(0.037)	(0.030)	(1.536)
pro × CDU	0.096*	0.195***	-0.103*	0.063	0.071	0.054	1.659
	(0.043)	(0.058)	(0.047)	(0.041)	(0.046)	(0.054)	(1.445)
pro × Die Linke	0.122**	0.075+	-0.025	0.015	0.094**	0.063*	1.544
	(0.043)	(0.044)	(0.027)	(0.028)	(0.029)	(0.029)	(1.298)
pro × FDP	0.062	0.056	0.021	0.050	0.091	-0.002	-0.280
	(0.041)	(0.060)	(0.053)	(0.041)	(0.055)	(0.034)	(1.119)
pro × SPD	0.071	0.063	-0.029	-0.021	0.057	0.069+	0.715
	(0.045)	(0.058)	(0.037)	(0.035)	(0.037)	(0.040)	(1.237)
pro × CSU	0.029	0.008	-0.039	0.029	0.008	-0.040	0.699
	(0.043)	(0.049)	(0.034)	(0.035)	(0.034)	(0.042)	(2.331)
pro × None	0.083*	0.033	-0.081	-0.022	0.070*	-0.014	1.398
	(0.037)	(0.048)	(0.049)	(0.037)	(0.032)	(0.041)	(1.341)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2003	2003	2003	2003	2003	2003	1995

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables. Except for treatment party dummies, all controls listed in section A.2.1 of the Appendix are included. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.9: OLS regression analyses: Effect of an unexpected cue (with the delta as dependent variable)

	Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)
Desire for action (delta)	con x label	pro x label	con x label	pro x label
Unexpected cue (D)	0.091	-0.008	0.002	0.078*
	(0.065)	(0.044)	(0.038)	(0.032)
Controls	Yes	Yes	Yes	Yes
Observations	314	353	410	425
R^2	0.120	0.029	0.109	0.104

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include all control variables listed in section A.2.1 of the Appendix as well as support for treatment party. The "unexpected cue" dummy is equal to 0 if the cue is anticipated and 1 otherwise. A cue is considered anticipated if it is in line with how important the respondent expected climate change to be for the treatment party, i.e. if the cue is pro and the party is expected to care about climate change or vice versa.

Table A.10: OLS regression analyses: Effects of additional explanatory variables

	No label		Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Desire for action (post-treatment)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
Tertiary education	0.087	0.034	-0.008	0.027	0.047	-0.010
	(0.096)	(0.056)	(0.057)	(0.045)	(0.042)	(0.028)
Political interest	0.019	-0.058	0.062*	-0.011	0.004	0.010
	(0.043)	(0.036)	(0.030)	(0.022)	(0.025)	(0.023)
Own political orientation (left-right)	-0.059+	-0.014	-0.041	-0.017	0.004	-0.010
	(0.032)	(0.034)	(0.031)	(0.015)	(0.018)	(0.019)
Support for favorite party	0.065+	0.003	0.086*	-0.013	0.016	0.034*
	(0.039)	(0.030)	(0.041)	(0.031)	(0.023)	(0.016)
Political knowledge score	0.001	-0.019	-0.012	-0.020	-0.006	-0.025
	(0.050)	(0.039)	(0.033)	(0.025)	(0.020)	(0.018)
Sustainability score	0.033	0.002	0.004	0.001	0.018	0.010
	(0.035)	(0.030)	(0.027)	(0.018)	(0.020)	(0.020)
NEP score	0.046	0.099	0.109**	0.077*	0.105***	0.074*
	(0.043)	(0.060)	(0.040)	(0.030)	(0.021)	(0.035)
Climate change knowledge score	0.008	0.072*	-0.024	0.004	-0.005	-0.031
	(0.046)	(0.029)	(0.025)	(0.025)	(0.019)	(0.024)
Trusting people in general	0.003	0.025	0.072**	-0.019	0.025	0.056**
	(0.038)	(0.032)	(0.027)	(0.017)	(0.017)	(0.018)
Trusting parties	-0.021	-0.038	-0.073*	-0.008	-0.004	-0.020
	(0.041)	(0.028)	(0.029)	(0.017)	(0.018)	(0.016)
Respondent would vote (D)	-0.044	0.150	-0.133	0.118+	-0.085	-0.135+
	(0.146)	(0.132)	(0.113)	(0.067)	(0.057)	(0.073)
Support for treatment party			-0.181**	0.047	-0.037	0.004
			(0.066)	(0.043)	(0.034)	(0.032)
Constant	0.806+	0.610+	1.144**	0.521*	0.520**	0.653**
	(0.411)	(0.353)	(0.367)	(0.213)	(0.197)	(0.234)
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	113	119	314	353	410	425
R^2	0.903	0.917	0.823	0.866	0.910	0.907

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Additional to pre-treatment desire for action, remaining included controls are listed in section A.2.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.11: OLS regression analyses: Effects of additional explanatory variables (with p-values corrected for multiple hypothesis testing)

	No label		Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Desire for action (post-treatment)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
University degree (D)	0.398	0.560	0.898	0.573	0.343	0.679
Political interest	0.666	0.108	0.057	0.523	0.835	0.625
Own pol. orientation (left-right)	0.098	0.700	0.259	0.273	0.673	0.639
Support for favorite party	0.124	0.918	0.048	0.577	0.465	0.042
Political knowledge score	0.989	0.630	0.657	0.495	0.735	0.096
Sustainability score	0.368	0.930	0.927	0.910	0.422	0.650
NEP score	0.288	0.129	0.013	0.018	0.000	0.078
Climate change knowledge score	0.874	0.017	0.295	0.843	0.827	0.279
Trusting people in general	0.930	0.436	0.020	0.210	0.189	0.003
Trusting parties	0.649	0.179	0.021	0.524	0.627	0.256
Respondent would vote (D)	0.777	0.305	0.234	0.105	0.153	0.081
Support for treatment party			0.013	0.305	0.592	0.785
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Additional to pre-treatment desire for action, remaining included controls are listed in section A.2.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.12: OLS regression analyses: Effects of additional explanatory variables (with the delta as dependent variable)

	No label		Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Desire for action (delta)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
Tertiary education	0.056	0.045	-0.014	0.023	0.046	-0.004
	(0.104)	(0.058)	(0.057)	(0.046)	(0.042)	(0.028)
Political interest	0.004	-0.048	0.060*	-0.010	0.007	0.014
	(0.045)	(0.041)	(0.030)	(0.022)	(0.026)	(0.022)
Own political orientation (left-right)	-0.019	-0.001	-0.024	-0.000	0.013	-0.002
	(0.035)	(0.032)	(0.031)	(0.015)	(0.017)	(0.018)
Support for favorite party	0.063	-0.006	0.073+	-0.017	0.011	0.039*
	(0.041)	(0.029)	(0.043)	(0.033)	(0.023)	(0.016)
Political knowledge score	0.011	-0.035	-0.014	-0.018	-0.002	-0.025
	(0.055)	(0.041)	(0.033)	(0.025)	(0.020)	(0.018)
Sustainability score	0.025	-0.020	-0.010	-0.008	0.014	0.005
	(0.038)	(0.030)	(0.028)	(0.019)	(0.020)	(0.020)
NEP score	-0.040	0.016	0.027	0.026	0.068***	0.036
	(0.038)	(0.043)	(0.025)	(0.025)	(0.020)	(0.027)
Climate change knowledge score	-0.040	0.048	-0.053*	-0.008	-0.026	-0.043+
	(0.043)	(0.031)	(0.026)	(0.024)	(0.017)	(0.024)
Trusting people in general	-0.035	0.012	0.071*	-0.022	0.021	0.049**
	(0.039)	(0.031)	(0.028)	(0.017)	(0.018)	(0.017)
Trusting parties	-0.021	-0.036	-0.089**	-0.008	-0.010	-0.024
	(0.045)	(0.030)	(0.031)	(0.017)	(0.018)	(0.017)
Respondent would vote (D)	0.033	0.149	-0.124	0.120+	-0.085	-0.133+
	(0.143)	(0.151)	(0.118)	(0.069)	(0.058)	(0.074)
Support for treatment party			-0.190**	0.034	-0.043	-0.008
			(0.069)	(0.044)	(0.034)	(0.031)
Constant	-0.347	-0.302	0.256	-0.076	0.060	0.251*
	(0.231)	(0.193)	(0.180)	(0.129)	(0.106)	(0.098)
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	113	119	314	353	410	425
R^2	0.228	0.208	0.118	0.029	0.109	0.094

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Remaining included controls are listed in section A.2.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.13: OLS regression analyses: Effects of additional explanatory variables (including all respondents)

	No label		Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Desire for action (post-treatment)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
Tertiary education	0.038	0.062	-0.029	0.007	0.023	0.004
	(0.075)	(0.053)	(0.050)	(0.043)	(0.038)	(0.029)
Political interest	-0.016	-0.020	0.034	-0.002	-0.003	0.010
	(0.034)	(0.031)	(0.029)	(0.024)	(0.028)	(0.018)
Own political orientation (left-right)	0.004	-0.014	-0.034	-0.016	-0.003	-0.010
	(0.032)	(0.031)	(0.026)	(0.015)	(0.021)	(0.016)
Support for favorite party	0.040	0.001	0.102*	-0.013	-0.026	0.022
	(0.036)	(0.028)	(0.040)	(0.027)	(0.024)	(0.017)
Political knowledge score	0.048	-0.025	0.002	-0.016	-0.017	-0.040*
	(0.042)	(0.034)	(0.029)	(0.027)	(0.019)	(0.018)
Sustainability score	0.034	0.011	0.043+	-0.005	0.040+	0.020
	(0.031)	(0.028)	(0.024)	(0.017)	(0.024)	(0.019)
NEP score	0.097+	0.097+	0.100**	0.050+	0.099***	0.038
	(0.049)	(0.050)	(0.034)	(0.029)	(0.021)	(0.026)
Climate change knowledge score	-0.010	0.073**	-0.006	0.026	0.009	0.005
	(0.039)	(0.024)	(0.024)	(0.028)	(0.019)	(0.021)
Trusting people in general	-0.023	0.025	0.058*	-0.020	0.020	0.040*
	(0.026)	(0.028)	(0.023)	(0.017)	(0.016)	(0.016)
Trusting parties	0.000	-0.016	-0.057*	0.000	-0.002	-0.015
	(0.037)	(0.031)	(0.027)	(0.019)	(0.019)	(0.016)
Respondent would vote (D)	-0.135	0.067	-0.095	0.093	0.048	-0.118+
	(0.130)	(0.118)	(0.105)	(0.067)	(0.098)	(0.066)
Support for treatment party			-0.161**	0.042	-0.054+	0.009
			(0.055)	(0.041)	(0.031)	(0.033)
Constant	0.784*	0.720*	1.080***	0.373+	0.570**	0.559**
	(0.365)	(0.308)	(0.314)	(0.206)	(0.199)	(0.188)
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	156	141	400	394	520	547
R^2	0.882	0.926	0.825	0.873	0.877	0.893

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Additional to pre-treatment desire for action, remaining included controls are listed in section A.2.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.14: Probit regression analyses: Marginal effects of additional explanatory variables

Dependent variable:	No label		Supports treatment party		Opposes treatment party	
Desire for action	(1)	(2)	(3)	(4)	(5)	(6)
(change dummy)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
Tertiary education	-0.114	-0.107	0.031	-0.053	-0.056	-0.055
	(0.081)	(0.081)	(0.052)	(0.051)	(0.048)	(0.041)
Political interest	-0.064	0.021	-0.060*	-0.002	-0.021	0.028
	(0.045)	(0.056)	(0.028)	(0.027)	(0.028)	(0.023)
Own political orientation (left-right)	0.002	-0.003	0.023	0.015	0.019	0.025
	(0.032)	(0.047)	(0.022)	(0.021)	(0.023)	(0.021)
Support for favorite party	0.004	-0.073+	-0.056	0.023	0.025	0.036*
	(0.040)	(0.043)	(0.038)	(0.036)	(0.018)	(0.016)
Political knowledge score	0.056	0.028	0.011	-0.071*	-0.013	-0.066**
	(0.051)	(0.047)	(0.029)	(0.028)	(0.026)	(0.025)
Sustainability score	0.080+	-0.056	-0.027	0.017	0.020	-0.006
	(0.042)	(0.044)	(0.023)	(0.023)	(0.022)	(0.023)
NEP score	-0.067	-0.151**	-0.010	-0.060*	-0.094***	-0.043+
	(0.044)	(0.054)	(0.024)	(0.026)	(0.020)	(0.026)
Climate change knowledge score	-0.045	0.009	0.020	0.038	0.029	0.032
	(0.038)	(0.052)	(0.026)	(0.026)	(0.024)	(0.021)
Trusting people in general	-0.013	-0.031	0.015	-0.041*	0.014	0.008
	(0.045)	(0.048)	(0.026)	(0.020)	(0.019)	(0.020)
Trusting parties	0.016	-0.064	0.022	0.001	-0.013	-0.031
	(0.044)	(0.043)	(0.029)	(0.024)	(0.022)	(0.020)
Support for treatment party			0.084	0.023	0.009	0.005
			(0.059)	(0.059)	(0.046)	(0.038)
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	113	115	314	353	410	425

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Except for the respondent's voting decision, all controls listed in section A.2.1 of the Appendix are included. The "change dummy" is 1 if the respondent changed their answer to one of the desire for action questions from before to after the treatment and 0 otherwise. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.15: Probit regression analyses: Marginal effects of additional explanatory variables (including all respondents)

	No label		Supports treatment party		Opposes treatment party	
Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Desire for action (change dummy)	con x no label	pro x no label	con x label	pro x label	con x label	pro x label
Tertiary education	-0.040	-0.097	0.005	-0.071	-0.057	-0.064^{+}
	(0.073)	(0.077)	(0.045)	(0.045)	(0.044)	(0.038)
Political interest	-0.012	-0.020	-0.068**	0.005	-0.014	0.007
	(0.036)	(0.056)	(0.025)	(0.025)	(0.023)	(0.020)
Own political orientation (left-right)	0.023	0.014	0.012	0.021	0.015	0.032
	(0.024)	(0.043)	(0.019)	(0.020)	(0.018)	(0.020)
Support for favorite party	0.035	-0.066	-0.068^{+}	0.011	0.020	0.034*
	(0.036)	(0.044)	(0.035)	(0.029)	(0.014)	(0.015)
Political knowledge score	-0.014	-0.022	0.010	-0.064*	-0.017	-0.051*
	(0.040)	(0.046)	(0.027)	(0.026)	(0.024)	(0.023)
Sustainability score	0.057	-0.013	-0.015	0.020	0.023	0.006
	(0.039)	(0.046)	(0.019)	(0.021)	(0.018)	(0.020)
NEP score	-0.029	-0.132**	-0.027	-0.067**	-0.080***	-0.043^{+}
	(0.035)	(0.046)	(0.022)	(0.024)	(0.017)	(0.022)
Climate change knowledge score	-0.031	0.034	0.031	0.024	0.011	0.046*
	(0.034)	(0.045)	(0.023)	(0.026)	(0.021)	(0.020)
Trusting people in general	-0.036	-0.038	0.018	-0.052**	0.015	0.014
	(0.036)	(0.047)	(0.022)	(0.019)	(0.017)	(0.018)
Trusting parties	0.022	-0.026	0.012	0.004	-0.034^{+}	-0.035^{+}
	(0.031)	(0.045)	(0.024)	(0.023)	(0.019)	(0.018)
Support for treatment party			0.070	0.028	0.012	0.036
			(0.055)	(0.053)	(0.041)	(0.037)
Remaining controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	156	135	400	394	520	547

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Except for the respondent's voting decision, all controls listed in section A.2.1 of the Appendix are included. The "change dummy" is 1 if the respondent changed their answer to one of the desire for action questions from before to after the treatment and 0 otherwise. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

A.2.4 SEPARATE RESULTS FOR ALL OUTCOME VARIABLES

Table A.16: Wilcoxon tests: Effects of the treatment groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
con x no label vs. label	0.394	0.187	0.623	0.818	0.274	0.095	0.706	0.336	0.277	0.907
	(-0.853)	(-1.320)	(0.492)	(-0.230)	(-1.094)	(1.672)	(-0.377)	(0.963)	(-1.088)	(-0.117)
pro x no label vs. label	0.534	0.832	0.401	0.454	0.192	0.523	0.594	0.963	0.201	0.394
	(-0.621)	(-0.212)	(0.840)	(-0.749)	(1.305)	(-0.638)	(-0.533)	(0.046)	(-1.279)	(0.852)
Signed-Rank (con x no label)	0.782	0.581	0.820	0.956	0.103	0.477	0.038	0.736	0.094	0.598
	(-0.277)	(0.552)	(0.228)	(-0.055)	(-1.630)	(0.711)	(-2.078)	(-0.337)	(-1.674)	(0.527)
Signed-Rank (con x label)	0.084	0.000	0.410	0.619	0.094	0.006	0.000	0.000	0.157	0.082
	(1.729)	(5.148)	(-0.825)	(0.497)	(-1.674)	(-2.773)	(-4.637)	(-3.630)	(-1.414)	(1.738)
Signed-Rank (pro x no label)	0.104	0.014	0.261	0.773	0.008	0.581	0.068	0.292	0.276	0.195
	(1.628)	(2.454)	(1.123)	(0.289)	(2.647)	(0.553)	(-1.824)	(-1.054)	(-1.090)	(1.295)
Signed-Rank (pro x label)	0.000	0.000	0.560	0.004	0.000	0.000	0.000	0.004	0.571	0.405
	(5.464)	(6.304)	(0.583)	(2.874)	(3.787)	(3.502)	(-3.799)	(-2.887)	(0.567)	(0.832)

Notes. Z statistics in parentheses. Test for: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation.

Table A.17: Wilcoxon tests: Effects of the treatment groups by party (con statements)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rank Sum										
AfD	0.730	0.649	0.869	0.828	0.045	0.851	0.273	0.979	0.012	0.790
	(-0.345)	(-0.455)	(0.166)	(0.217)	(-2.005)	(0.187)	(-1.097)	(0.026)	(-2.508)	(-0.266)
Grüne	0.343	0.056	0.749	0.686	0.357	0.601	0.459	0.098	0.923	0.816
	(-0.948)	(-1.910)	(0.320)	(0.404)	(-0.922)	(0.524)	(0.741)	(1.656)	(0.097)	(0.233)
CDU	0.394	0.120	0.818	0.939	0.669	0.204	0.688	0.655	0.185	0.731
	(-0.852)	(-1.556)	(0.230)	(-0.077)	(-0.428)	(1.269)	(0.402)	(0.446)	(-1.327)	(0.344)
CSU	0.881	0.132	0.411	0.987	0.279	0.096	0.974	0.249	0.658	0.585
	(-0.150)	(-1.508)	(0.822)	(-0.016)	(-1.082)	(1.667)	(-0.033)	(1.153)	(-0.442)	(-0.546)
Linke	0.815	0.544	0.137	0.239	0.578	0.053	0.923	0.207	0.892	0.160
	(-0.234)	(-0.606)	(1.486)	(1.176)	(-0.556)	(1.935)	(-0.096)	(1.262)	(-0.135)	(-1.405)
FDP	0.017	0.084	0.454	0.154	0.863	0.296	0.144	0.747	0.163	0.802
	(-2.393)	(-1.729)	(-0.748)	(-1.427)	(0.173)	(1.044)	(-1.459)	(-0.323)	(-1.396)	(0.250)
SPD	0.833	0.445	0.703	0.130	0.375	0.033	0.705	0.307	0.937	0.427
	(0.211)	(0.764)	(0.381)	(-1.514)	(-0.886)	(2.129)	(-0.379)	(1.022)	(-0.079)	(0.795)
Signed-Rank										
AfD	0.836	0.220	1.000	0.704	0.241	0.493	0.584	0.685	0.059	0.409
	(0.207)	(1.226)	(0.000)	(-0.380)	(1.173)	(0.686)	(-0.547)	(-0.406)	(1.886)	(0.825)
Grüne	0.334	0.007	0.821	0.553	0.636	0.976	0.003	0.010	0.082	0.820
	(0.966)	(2.693)	(-0.226)	(-0.594)	(-0.473)	(0.030)	(-2.980)	(-2.569)	(-1.741)	(0.228)
CDU	0.427	0.012	0.945	0.993	0.312	0.281	0.011	0.312	0.854	0.970
	(0.794)	(2.511)	(-0.069)	(0.009)	(-1.012)	(-1.078)	(-2.542)	(-1.012)	(0.184)	(0.038)
CSU	0.941	0.007	0.305	0.972	0.717	0.088	0.007	0.028	0.178	0.247
	(-0.074)	(2.713)	(-1.026)	(-0.036)	(-0.362)	(-1.705)	(-2.711)	(-2.195)	(-1.347)	(1.158)
Linke	0.948	0.140	0.027	0.136	0.309	0.040	0.032	0.044	0.142	0.011
	(0.065)	(1.476)	(-2.216)	(-1.490)	(-1.018)	(-2.052)	(-2.141)	(-2.013)	(-1.467)	(2.541)
FDP	0.004	0.002	0.128	0.042	0.016	0.442	0.966	0.901	0.752	0.863
	(2.852)	(3.112)	(1.521)	(2.030)	(-2.409)	(-0.769)	(-0.043)	(0.124)	(0.316)	(0.173)
SPD	0.644	0.606	0.746	0.029	0.685	0.017	0.123	0.104	0.181	0.572
	(-0.462)	(-0.516)	(-0.324)	(2.184)	(-0.406)	(-2.389)	(-1.542)	(-1.624)	(-1.338)	(-0.564)

Notes. Z statistics in parentheses. Test for: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation.

Table A.18: Wilcoxon tests: Effects of the treatment groups by party (pro statements)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rank Sum										
AfD	0.313	0.534	0.710	0.491	0.115	0.973	0.620	0.596	0.273	0.105
	(-1.009)	(-0.622)	(0.372)	(-0.689)	(1.574)	(0.033)	(-0.495)	(0.530)	(-1.096)	(1.622)
Grüne	0.437	0.482	0.277	0.209	0.164	0.095	0.828	0.199	0.326	0.490
	(-0.777)	(-0.702)	(1.088)	(-1.256)	(1.391)	(-1.667)	(0.217)	(1.283)	(-0.983)	(-0.690)
CDU	0.658	0.490	0.916	0.035	0.349	0.645	0.978	0.472	0.478	0.328
	(-0.443)	(-0.691)	(-0.105)	(-2.106)	(-0.937)	(-0.460)	(0.027)	(0.720)	(-0.710)	(0.979)
CSU	0.888	0.770	0.078	0.619	0.037	0.741	0.414	0.878	0.640	0.271
	(-0.140)	(0.292)	(1.765)	(0.498)	(2.084)	(0.331)	(-0.816)	(0.154)	(-0.467)	(1.101)
Linke	0.758	0.230	0.617	0.620	0.351	0.648	0.481	0.561	0.423	0.555
	(0.308)	(-1.199)	(-0.501)	(-0.496)	(0.932)	(-0.457)	(-0.705)	(-0.581)	(-0.802)	(0.590)
FDP	0.149	0.679	0.077	0.943	0.124	0.949	0.366	0.230	0.106	0.313
	(-1.444)	(0.414)	(1.770)	(0.071)	(1.539)	(-0.064)	(-0.904)	(-1.200)	(-1.616)	(1.009)
SPD	0.952	0.117	0.728	0.929	0.636	0.305	0.825	0.462	0.266	0.908
	(-0.060)	(1.566)	(0.348)	(0.089)	(0.474)	(-1.025)	(-0.221)	(-0.736)	(-1.112)	(0.115)
Signed-Rank										
AfD	0.003	0.001	0.479	0.176	0.685	0.499	0.086	0.076	0.672	0.299
	(2.923)	(3.237)	(0.708)	(1.353)	(0.406)	(0.676)	(-1.717)	(-1.774)	(0.423)	(-1.039)
Grüne	0.015	0.003	0.772	0.039	0.438	0.002	0.016	0.005	0.799	0.028
	(2.444)	(3.005)	(-0.290)	(2.064)	(0.776)	(3.087)	(-2.408)	(-2.782)	(0.255)	(2.192)
CDU	0.039	0.004	0.197	0.003	0.000	0.242	0.074	0.050	0.939	0.871
	(2.065)	(2.881)	(1.291)	(2.931)	(3.848)	(1.170)	(-1.785)	(-1.960)	(-0.076)	(-0.162)
CSU	0.166	0.088	0.167	0.704	0.958	0.879	0.509	0.196	0.602	0.717
	(1.386)	(1.706)	(-1.383)	(-0.379)	(-0.053)	(0.153)	(-0.660)	(-1.294)	(-0.521)	(-0.362)
Linke	0.285	0.000	0.079	0.333	0.081	0.191	0.192	0.630	0.833	0.651
	(1.070)	(3.929)	(1.757)	(0.968)	(1.742)	(1.307)	(-1.305)	(-0.482)	(-0.211)	(0.453)
FDP	0.002	0.155	0.160	0.822	0.458	0.459	0.551	0.474	0.226	0.953
	(3.110)	(1.422)	(-1.403)	(0.225)	(0.741)	(0.741)	(-0.596)	(0.715)	(1.210)	(-0.059)
SPD	0.125	0.822	0.440	0.895	0.024	0.051	0.104	0.983	0.658	0.237
	(1.535)	(0.225)	(0.772)	(0.132)	(2.264)	(1.954)	(-1.625)	(-0.021)	(0.443)	(1.181)

Notes. Z statistics in parentheses. Test for: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation.

Table A.19: OLS regression analyses: Effects of the treatment groups (con statements)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Party label	0.061	0.117^{+}	-0.093	-0.027	0.107	-0.146	-0.016	-0.107^{+}	-0.000	-0.055
	(0.045)	(0.065)	(0.089)	(0.089)	(0.083)	(0.096)	(0.070)	(0.060)	(0.050)	(1.826)
Constant	-0.628*	-0.895**	0.053	0.274	-0.718^{+}	-0.619	-0.340	-0.446^{+}	-0.376	-6.519
	(0.258)	(0.299)	(0.330)	(0.391)	(0.388)	(0.415)	(0.279)	(0.266)	(0.284)	(6.904)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	961	961	961	961	961	961	961	961	961	958

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. Specifications include control variables and interaction terms with these variables. All included controls are listed in section A.2.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.20: OLS regression analyses: Effects of the treatment groups (pro statements)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Party label	0.032	-0.001	-0.035	0.081	-0.041	0.075	0.035	-0.016	0.080	-0.293
	(0.052)	(0.059)	(0.062)	(0.072)	(0.057)	(0.058)	(0.072)	(0.053)	(0.070)	(1.430)
Constant	-0.351	-0.611^{+}	-0.484	0.034	-0.088	-0.035	-0.484^{+}	-0.043	-0.302	3.521
	(0.246)	(0.346)	(0.300)	(0.341)	(0.339)	(0.295)	(0.261)	(0.228)	(0.244)	(7.909)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1042	1042	1042	1042	1042	1042	1042	1042	1042	1037

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. Specifications include control variables and interaction terms with these variables. All included controls are listed in section A.2.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.21: Wilcoxon tests: Comparison of groups that are considered least likely to deviate in their opinion

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rank sum (no interest/interest)	0.946	0.091	0.195	0.949	0.800	0.282	0.822	0.732	0.201	0.274
	(-0.068)	(-1.689)	(-1.295)	(0.063)	(0.253)	(-1.076)	(0.225)	(-0.342)	(-1.277)	(-1.094)
Signed-Rank (no interest)	0.936	0.004	0.449	0.457	0.213	0.443	0.001	0.016	0.011	0.002
	(-0.080)	(2.877)	(-0.756)	(0.744)	(1.245)	(-0.767)	(-3.480)	(-2.409)	(-2.545)	(3.094)
Signed-Rank (interest)	0.972	0.004	0.219	0.738	0.753	0.248	0.107	0.509	0.317	0.014
	(0.035)	(2.870)	(1.230)	(0.335)	(0.315)	(1.155)	(-1.612)	(-0.660)	(1.000)	(2.448)

Notes. Z statistics in parentheses. Test for: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation.

Table A.22: OLS regression analyses: Effects of additional explanatory variables (con statements)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Unexpected cue (D)	-0.080	0.055	0.043	0.160^{+}	0.077	0.083	-0.002	0.050	0.049	-0.206
	(0.059)	(0.073)	(0.075)	(0.082)	(0.085)	(0.097)	(0.075)	(0.072)	(0.064)	(1.619)
Support for treatment party	0.011	-0.009	0.021	-0.054	-0.086*	-0.047	-0.005	-0.014	-0.033	0.172
	(0.022)	(0.032)	(0.033)	(0.037)	(0.043)	(0.042)	(0.035)	(0.036)	(0.029)	(0.599)
Female	0.001	0.050	0.085	-0.075	-0.142*	-0.127	0.030	0.005	0.065	1.363
	(0.051)	(0.056)	(0.054)	(0.066)	(0.072)	(0.077)	(0.065)	(0.067)	(0.064)	(1.517)
Age	0.005	0.044	-0.048	0.023	0.032	0.045	-0.003	-0.020	0.012	-0.666
	(0.027)	(0.032)	(0.033)	(0.035)	(0.035)	(0.041)	(0.032)	(0.033)	(0.024)	(0.770)
Children (D)	-0.018	-0.203**	0.001	-0.129*	-0.221***	-0.262***	-0.047	-0.116*	-0.090	-0.916
	(0.050)	(0.061)	(0.056)	(0.061)	(0.062)	(0.078)	(0.056)	(0.055)	(0.055)	(1.446)
Living in a major city (D)	-0.054	-0.075	0.070	0.059	-0.014	0.016	0.003	0.029	-0.021	-1.397
	(0.050)	(0.058)	(0.059)	(0.065)	(0.056)	(0.064)	(0.053)	(0.052)	(0.041)	(1.316)
Germany is country of birth (D)	0.161	-0.036	0.296*	0.227	-0.169	0.059	0.059	0.153	-0.003	3.401
	(0.104)	(0.154)	(0.127)	(0.148)	(0.181)	(0.161)	(0.172)	(0.135)	(0.138)	(2.650)
Duration (in seconds)	0.014	0.002	-0.000	-0.032*	-0.017	-0.015	0.025	0.017	0.021	-1.119
	(0.028)	(0.056)	(0.056)	(0.013)	(0.016)	(0.021)	(0.019)	(0.011)	(0.015)	(1.222)
Effort put into answering the survey	-0.020	0.034	-0.011	-0.054^{+}	-0.026	-0.058	-0.016	-0.010	0.007	-1.188
	(0.021)	(0.024)	(0.028)	(0.028)	(0.033)	(0.037)	(0.037)	(0.038)	(0.039)	(0.824)
Tertiary education	-0.032	-0.066	-0.119*	0.100	0.004	-0.041	0.114*	0.043	0.073	-2.091
	(0.048)	(0.052)	(0.055)	(0.064)	(0.060)	(0.077)	(0.057)	(0.055)	(0.052)	(1.456)
Political interest	0.033	0.055	0.028	0.057	0.035	0.025	0.082*	0.059	0.070^{+}	1.425
	(0.026)	(0.036)	(0.033)	(0.038)	(0.044)	(0.044)	(0.040)	(0.036)	(0.036)	(0.993)
Own political orientation (left-right)	0.035	0.056^{+}	-0.009	-0.101**	0.040	0.000	-0.007	-0.002	-0.014	0.964
	(0.023)	(0.031)	(0.029)	(0.034)	(0.032)	(0.039)	(0.026)	(0.028)	(0.027)	(0.795)
Support for favorite party	-0.033	0.008	0.025	0.034	0.015	0.025	0.051	0.002	0.011	0.081
	(0.026)	(0.040)	(0.035)	(0.036)	(0.039)	(0.041)	(0.036)	(0.032)	(0.033)	(0.779)
Political knowledge score	-0.010	0.033	0.047	0.023	-0.016	0.054	-0.034	0.006	0.011	-0.640
	(0.025)	(0.034)	(0.033)	(0.035)	(0.039)	(0.043)	(0.032)	(0.031)	(0.032)	(0.923)
Sustainability score	0.056^{+}	-0.014	0.024	-0.013	0.031	0.027	-0.040	-0.052^{+}	-0.015	0.859
	(0.030)	(0.034)	(0.030)	(0.031)	(0.037)	(0.031)	(0.030)	(0.028)	(0.031)	(0.665)
NEP score	0.025	0.025	-0.042	0.038	0.042	0.057^{+}	0.051^{+}	0.087**	0.016	0.471
	(0.030)	(0.034)	(0.032)	(0.034)	(0.031)	(0.031)	(0.029)	(0.030)	(0.033)	(0.757)
Climate change knowledge score	0.001	-0.009	0.042	-0.049	-0.040	-0.090*	-0.036	-0.040	-0.004	0.950
	(0.029)	(0.029)	(0.032)	(0.031)	(0.032)	(0.038)	(0.031)	(0.034)	(0.033)	(0.779)
Trusting people in general	0.019	0.034	0.010	0.014	0.025	0.087*	0.036	0.058^{+}	0.000	1.051^{+}
	(0.025)	(0.033)	(0.030)	(0.029)	(0.033)	(0.038)	(0.027)	(0.030)	(0.025)	(0.629)
Trusting parties	0.010	0.004	-0.041	-0.030	-0.022	-0.079*	-0.034	-0.050	-0.004	-1.486*
	(0.027)	(0.038)	(0.033)	(0.032)	(0.037)	(0.036)	(0.032)	(0.032)	(0.026)	(0.741)
Respondent would vote (D)	-0.074	0.114	-0.010	-0.112	0.061	0.190	-0.048	0.096	0.065	-1.779
	(0.096)	(0.130)	(0.124)	(0.124)	(0.147)	(0.145)	(0.123)	(0.131)	(0.130)	(3.436)
Constant	0.053	0.136	-0.361^{+}	-0.179	0.197	-0.204	-0.163	-0.337^{+}	-0.144	0.090
	(0.126)	(0.195)	(0.194)	(0.204)	(0.263)	(0.225)	(0.231)	(0.201)	(0.212)	(3.465)
Party controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	848	848	848	848	848	848	848	848	848	845

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.23: OLS regression analyses: Effects of additional explanatory variables (pro statements)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Unexpected cue (D)	-0.006	-0.019	0.061	-0.079	-0.059	-0.048	0.055	0.051	0.045	-2.221^{+}
	(0.045)	(0.058)	(0.046)	(0.067)	(0.055)	(0.060)	(0.046)	(0.044)	(0.039)	(1.211)
Support for treatment party	-0.007	-0.017	-0.026	-0.024	-0.037	-0.016	-0.006	-0.002	-0.006	0.682
	(0.023)	(0.033)	(0.025)	(0.030)	(0.028)	(0.030)	(0.026)	(0.023)	(0.022)	(0.647)
Female	-0.012	0.023	0.046	-0.104^{+}	-0.069	-0.113*	-0.012	-0.065	-0.116**	-0.106
	(0.051)	(0.051)	(0.049)	(0.057)	(0.061)	(0.055)	(0.045)	(0.045)	(0.044)	(1.288)
Age	0.061**	0.047	0.040	0.053	0.036	0.047	-0.045	-0.026	-0.017	0.799
	(0.023)	(0.031)	(0.027)	(0.038)	(0.031)	(0.034)	(0.028)	(0.025)	(0.027)	(0.677)
Children (D)	0.009	0.027	0.017	-0.076	-0.034	-0.047	0.055	-0.021	0.061	-0.013
	(0.044)	(0.063)	(0.050)	(0.069)	(0.060)	(0.062)	(0.051)	(0.044)	(0.040)	(1.206)
Living in a major city (D)	-0.013	-0.096*	-0.008	0.053	-0.006	-0.025	-0.028	-0.027	-0.068*	-0.393
	(0.036)	(0.044)	(0.044)	(0.052)	(0.048)	(0.048)	(0.050)	(0.041)	(0.031)	(1.309)
Germany is country of birth (D)	0.038	0.099	0.059	0.030	-0.054	-0.044	0.074	0.031	-0.025	4.215^{+}
	(0.103)	(0.091)	(0.095)	(0.134)	(0.165)	(0.122)	(0.116)	(0.116)	(0.136)	(2.413)
Duration (in seconds)	0.038	0.012	0.010	-0.007	0.006	-0.008	0.017	0.021	0.015	0.759
	(0.028)	(0.015)	(0.015)	(0.017)	(0.023)	(0.016)	(0.014)	(0.014)	(0.015)	(0.939)
Effort put into answering the survey	-0.045*	0.020	0.024	-0.005	0.033	0.041^{+}	0.019	0.007	0.030^{+}	0.252
	(0.020)	(0.029)	(0.023)	(0.029)	(0.026)	(0.024)	(0.018)	(0.017)	(0.017)	(0.511)
Tertiary education	0.002	0.006	0.066	0.132*	0.064	0.015	0.021	-0.030	-0.014	0.999
	(0.043)	(0.049)	(0.044)	(0.057)	(0.053)	(0.052)	(0.045)	(0.042)	(0.044)	(1.234)
Political interest	0.042	0.050	-0.007	-0.012	-0.042	0.020	0.005	-0.011	-0.017	-1.150
	(0.026)	(0.038)	(0.033)	(0.042)	(0.038)	(0.038)	(0.030)	(0.028)	(0.026)	(0.716)
Own political orientation (left-right)	-0.002	0.006	0.017	-0.017	0.017	-0.012	0.009	-0.039^{+}	-0.004	0.112
	(0.022)	(0.024)	(0.025)	(0.028)	(0.028)	(0.026)	(0.024)	(0.020)	(0.018)	(0.661)
Support for favorite party	0.038	-0.013	-0.001	0.062^{+}	0.082*	-0.007	-0.014	0.044^{+}	0.042	-0.179
	(0.026)	(0.031)	(0.027)	(0.032)	(0.034)	(0.032)	(0.029)	(0.024)	(0.030)	(0.593)
Political knowledge score	-0.050^{+}	0.012	0.030	-0.086^{+}	-0.055^{+}	-0.057^{+}	-0.019	-0.038	-0.031	-0.592
	(0.026)	(0.031)	(0.025)	(0.045)	(0.032)	(0.030)	(0.030)	(0.025)	(0.021)	(0.737)
Sustainability score	0.029	-0.015	-0.046	-0.028	0.002	0.020	0.020	0.042*	0.009	-0.121
	(0.025)	(0.031)	(0.029)	(0.031)	(0.028)	(0.027)	(0.023)	(0.020)	(0.023)	(0.807)
NEP score	0.033	0.045	0.043	0.038	-0.016	-0.024	0.031	0.006	0.039	-0.856
	(0.023)	(0.042)	(0.031)	(0.032)	(0.031)	(0.034)	(0.028)	(0.025)	(0.028)	(0.672)
Climate change knowledge score	-0.004	-0.063	0.006	-0.020	0.007	-0.029	0.010	0.015	-0.019	1.059
	(0.022)	(0.044)	(0.034)	(0.032)	(0.034)	(0.034)	(0.029)	(0.028)	(0.029)	(0.761)
Trusting people in general	-0.009	0.006	0.026	-0.023	0.038	0.026	-0.016	0.016	0.032	-0.382
	(0.022)	(0.029)	(0.023)	(0.028)	(0.029)	(0.033)	(0.025)	(0.021)	(0.025)	(0.578)
Trusting parties	0.002	0.018	-0.022	-0.029	-0.033	-0.040	0.011	-0.031	-0.045^{+}	-0.543
	(0.023)	(0.025)	(0.023)	(0.034)	(0.028)	(0.025)	(0.029)	(0.025)	(0.023)	(0.674)
Respondent would vote (D)	-0.070	-0.071	-0.016	0.144	0.049	0.066	0.027	-0.056	-0.016	1.957
	(0.082)	(0.112)	(0.092)	(0.105)	(0.102)	(0.104)	(0.096)	(0.074)	(0.099)	(1.931)
Constant	0.134	0.122	-0.108	0.005	0.167	0.167	-0.233	-0.006	0.074	-3.307
	(0.145)	(0.133)	(0.133)	(0.175)	(0.223)	(0.168)	(0.156)	(0.133)	(0.177)	(3.204)
Party controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	923	923	923	923	923	923	923	923	923	919

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

A.3 STUDY 2

A.3.1 CONTROL VARIABLES

Control variables include personal data, i.e. gender, age, number of children, educational level, place of residence and birth country, as well as information on political interest and orientation, political and climate change knowledge, own sustainable behavior and beliefs about environmental change, overall trust and trust in parties, support of ones favorite party, a dummy on whether the respondent would vote or not and the duration of answering the questionnaire as well as self reported effort in answering it. Income was not used as a control variable as 28 people, i.e. seven percent of the sample, did not answer this question, thus the sample size would have decreased remarkably, while the effect of this variable is negligible (see Table S2.A.27). For more details on all variables see section A.1.5 in the Appendix.

A.3.2 SUPPLEMENTARY ANALYSIS (ROBUSTNESS CHECKS)

This section describes the details of the supplementary analysis. The main purpose of the supplementary analysis is to test against potential confounders that may affect my results.

RANDOMIZATION CHECK

Table A.24 shows summary statistics across treatments. The last column includes p-values from a Pearson's χ^2 test for the null hypothesis that sociodemograhpic characteristics are different across treatments. The null hypothesis can be rejected at conventional levels of statistical significance($p < 0.05$).

PARAMETRIC AND NON-PARAMETRIC TESTS

The delta of the disagreement treatment is not statistically significantly different from zero neither in parametric nor non-parametric testing (disagreement: M = 0.035, Wilcoxon matched-pairs signed-rank test, z = 1.364, P = 0.173, n = 156; 95% CI (-0.04, 0.11), one sample two-sided t-test = 0.887, P = 0.377, n = 156). The con consensus is marginally significantly different from zero in a t-test

but insignificantly so in a Wilcoxon test (M = -0.097, Wilcoxon matched-pairs signed-rank test, z = -0.464, P = 0.642, n = 113; 95% CI (-0.199, 0.005), one sample two-sided t-test = -1.890, P = 0.061, n = 113). Finally, the pro consensus is significantly different from zero in both kinds of tests (M = 0.141, Wilcoxon matched-pairs signed-rank test, z = 4.427, P > 0.000, n = 119; 95% CI (0.084, 0.198), one sample two-sided t-test = 4.927, P > 0.000, n = 119).

While both con and pro consensus are significantly more effective than the disagreement treatment in the t-test (con consensus vs. disagreement: MD = -0.132, 95% CI (-0.258, -0.007), two sample two-sided t-test = -2.076, P = 0.034, n = 269; pro consensus vs. disagreement: MD = 0.106, 95% CI (0.005, 0.208), two sample two-sided t-test = 2.059, P = 0.041, n = 275) only the pro consensus is significantly more effective in the non-parametric test (con consensus vs. disagreement: MD = -0.132, Wilcoxon rank-sum test, z = -1.242, P = 0.214, n = 269; pro consensus vs. disagreement: MD = 0.106, Wilcoxon rank-sum test, z = 2.379, P = 0.017, n = 275).

Looking at the six action scores separately, all of them are not significantly different from zero for the con consensus in a Wilcoxon test, however the $Urgency$ and $World$ scores do appear significant in a t-test ($Adequacy$: M = 0.012, Wilcoxon matched-pairs signed-rank test, z = 1.160, P = 0.248; one sample two-sided t-test = 0.218, P = 0.828, n = 113; $Urgency$: M = -0.260, Wilcoxon matched-pairs signed-rank test, z = -1.521, P = 0.129; one sample two-sided t-test = -2.760, P = 0.007, n = 113; $LongTerm$: M = -0.044, Wilcoxon matched-pairs signed-rank test, z = -0.921, P = 0.357; one sample two-sided t-test = -0.687, P = 0.494, n = 113; $Self$: M = -0.071, Wilcoxon matched-pairs signed-rank test, z = -1.025, P = 0.308; one sample two-sided t-test = -1.416, P = 0.160, n = 113; Gov: M = -0.091, Wilcoxon matched-pairs signed-rank test, z = -0.343, P = 0.733; one sample two-sided t-test = -1.400, P = 0.165, n = 113; $World$: M = -0.130, Wilcoxon matched-pairs signed-rank test, z = -0.593, P = 0.556; one sample two-sided t-test = -2.077, P = 0.040, n = 113).

For the disagreement treatment, only the $Adequacy$ score is marginally

significantly different from zero in non-parametric testing ($Adequacy$: M = 0.068, Wilcoxon matched-pairs signed-rank test, z = 1.865, P = 0.062; one sample two-sided t-test = 1.569, P = 0.119, n = 156; $Urgency$: M = 0.032, Wilcoxon matched-pairs signed-rank test, z = 1.434, P = 0.152; one sample two-sided t-test = 0.459, P = 0.647, n = 156; $LongTerm$: M = 0.004, Wilcoxon matched-pairs signed-rank test, z = -0.594, P = 0.554; one sample two-sided t-test = 0.082, P = 0.935, n = 156; $Self$: M = 0.028, Wilcoxon matched-pairs signed-rank test, z = 0.076, P = 0.941; one sample two-sided t-test = 0.761, P = 0.448, n = 156; Gov: M = 0.034, Wilcoxon matched-pairs signed-rank test, z = 1.311, P = 0.191; one sample two-sided t-test = 0.732, P = 0.465, n = 156; $World$: M = 0.043, Wilcoxon matched-pairs signed-rank test, z = 0.877, P = 0.382; one sample two-sided t-test = 0.769, P = 0.443, n = 156).

Finally, in the case of the pro consensus, all action scores, except for the $LongTerm$ score, are significantly different from zero in t-tests and Wilcoxon tests ($Adequacy$: M = 0.109, Wilcoxon matched-pairs signed-rank test, z = 2.222, P = 0.026; one sample two-sided t-test = 2.345, P = 0.021, n = 119; $Urgency$: M = 0.252, Wilcoxon matched-pairs signed-rank test, z = 4.416, P < 0.000; one sample two-sided t-test = 4.712, P < 0.000, n = 119; $LongTerm$: M = 0.062, Wilcoxon matched-pairs signed-rank test, z = 1.338, P = 0.183; one sample two-sided t-test = 1.484, P = 0.141, n = 119; $Self$: M = 0.179, Wilcoxon matched-pairs signed-rank test, z = 4.347, P < 0.000; one sample two-sided t-test = 4.511, P < 0.000, n = 119; Gov: M = 0.129, Wilcoxon matched-pairs signed-rank test, z = 2.657, P = 0.008; one sample two-sided t-test = 3.019, P = 0.003, n = 119; $World$: M = 0.115, Wilcoxon matched-pairs signed-rank test, z = 2.299, P = 0.021; one sample two-sided t-test = 2.760, P = 0.007, n = 119)

Additional specifications for OLS regressions of the treatment effects

Just like Table A.26, Tables A.27, A.28 and A.30 are all based on equation (2.6).

The statistical model underlying Table A.29 is:

$$\Delta Y_{id} = \alpha + \eta \times ConConsensus_{id} + \lambda \times ProConsensus_{id} + \gamma' x_{id} + \epsilon_{id} \quad \text{(A.6)}$$

where ΔY_{id} is the change in one of the six action scores, i.e. $Adequacy$, $Urgency$, $LongTerm$, $Self$, Gov and $World$, or the donation decision of individual i living in district d from before to after reading the cues. $ConConsensus_{id}$ is a dummy variable that is equal to 1 if the respondent got to read the con consensus, i.e. only statements against environmental and climate protection, and 0 otherwise. $ProConsensus_{id}$ is a dummy variable that is equal to 1 if the respondent got to read the pro consensus, i.e. only statements in favor of environmental and climate protection, and 0 otherwise. x_{id} is a vector of the control variables listed in section A.3.1 of the Appendix. All explanatory variables except for dummies are standardized meaning they have a mean of zero and a standard deviation of one (z-score). Thus, their coefficients can be interpreted as the change in desire for action associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at district level, i.e. the German "Kreis".

Additional specifications for OLS and Probit regressions of the additional explanatory variables

Just like Table A.32, Tables A.34 and A.35 are based on equation (2.4).

Table A.33 is based on the following equation:

$$\Delta DesireForAction_{id} = \alpha + \gamma' x_{id} + \epsilon_{id} \quad \text{(A.7)}$$

where $\Delta DesireForAction_{id}$ is the change in the desire for action score of individual i living in district d from before to after reading the cues. x_{id} is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run three times: once for the con consensus, once for the pro consensus and once for the disagreement treatment.

Just like Table A.36, Tables A.37 and A.38 are based on equation (2.8).

EMPIRICAL STRATEGY FOR REGRESSIONS OF ALL OUTCOME VARIABLES SEPARATELY

Table A.40 is based on the following equation:

$$\Delta Y_{id}^{all} = \alpha + \eta \times ConConsensus_{id} + \lambda \times ProConsensus_{id} + \gamma' x_{id} + \epsilon_{id} \quad \text{(A.8)}$$

where ΔY_{id}^{all} is the change in the score in one of the nine separate desire for action questions or the donation decision of individual i living in district d from before to after reading the cues. $ConConsensus_{id}$ is a dummy variable that is equal to 1 if the respondent got to read the con consensus, i.e. only statements against environmental and climate protection, and 0 otherwise. $ProConsensus_{id}$ is a dummy variable that is equal to 1 if the respondent got to read the pro consensus, i.e. only statements in favor of environmental and climate protection, and 0 otherwise. x_i is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis".

The underlying model for Tables A.41, A.42 and A.43 is:

$$\Delta Y_{id}^{all} = \alpha + \gamma' x_{id} + \epsilon_{id} \quad \text{(A.9)}$$

where ΔY_{id}^{all} is the change in the score in one of the nine separate desire for action questions or the donation decision of individual i living in district d from before to after reading the cues. x_{id} is defined as before. Standard errors are clustered at district level, i.e. the German "Kreis". The regression is run three times: once for the respondents that got the con consensus, once for those that got the pro consensus and once for those that got the disagreement treatment.

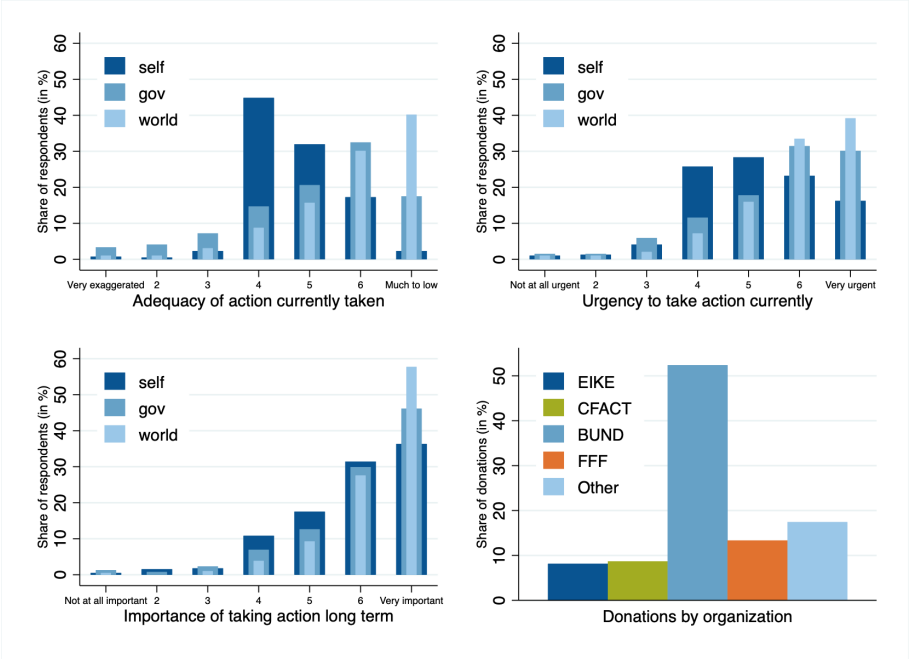
MULTIPLE HYPOTHESIS TESTING

I also present adjusted p-values to address concerns related to multiple testing (see Tables A.28, A.34 and A.37). The procedure is explained in section A.2.2 of the Appendix. The statistical inference does not change. Most coefficients

remain statistically significant at the significance levels of 95 % and 90 %, respectively.

A.3.3 TABLES AND FIGURES

Figure A.2: Distribution of answers before treatment



Notes. Organizations against more climate protection: EIKE = "Europäisches Institut für Klima und Energie", CFACT = "Committee for a Constructive Tomorrow"; Organizations in favor of more climate protection: BUND = "Bund für Umwelt und Naturschutz Deutschland", FFF = "Fridays for Future".

Table A.24: Descriptive statistics and randomization check

	consensus con		**disagreement**		**consensus pro**		
	Mean	SD	Mean	SD	Mean	SD	p-value
Age	46.61	(15.17)	45.41	(15.49)	44.19	(16.13)	0.433
Female	0.58	(0.50)	0.49	(0.50)	0.53	(0.50)	0.267
Income	1960.14	(1223.98)	2082.43	(1412.54)	1844.48	(1224.95)	0.422
Working	0.58	(0.50)	0.63	(0.48)	0.59	(0.49)	0.721
Unemployed	0.08	(0.28)	0.03	(0.18)	0.07	(0.26)	0.434
Student	0.08	(0.28)	0.09	(0.29)	0.09	(0.29)	0.766
Pensioner	0.23	(0.42)	0.23	(0.42)	0.18	(0.39)	0.612
Observations	113		156		119		

Notes. "Age" is the age of the respondent ranging from 18 to 74 years. "Female" is coded as 1 if the respondent was female and 0 otherwise. "Income" is coded as the mean income of the income section (22 sections from "less than 200 Euro" to "7,500 Euro and more") the respondent selected to be in. "Working" is coded as 1 if the respondent stated to either work full-time or part-time or to be self-employed and 0 otherwise. "Unemployed" is coded as 1 if the respondent is unemployed and either looking for a job or not and 0 otherwise. "Student" is coded as 1 if the respondent stated to either be a student at a university or school or doing an apprenticeship and 0 otherwise. "Pensioner" is coded as 1 if the respondent is a pensioner and 0 otherwise. The last column shows p-values for the null hypothesis of perfect randomization (χ^2-tests).

Table A.25: Wilcoxon tests: Effect of the treatment groups (including all respondents)

	(1) Desire for action	(2) Donations
Rank Sum (con/disagree)	0.572	0.976
	(0.565)	(-0.030)
Rank Sum (pro/disagree)	0.030	0.856
	(-2.164)	(0.181)
Signed-Rank (con)	0.560	0.806
	(0.583)	(0.246)
Signed-Rank (pro)	0.000	0.909
	(4.400)	(-0.114)
Signed-Rank (disagree)	0.172	0.864
	(1.364)	(0.172)

Notes. Z statistics in parentheses. Tests are run with the change in desire for action, respectively donations, from before to after the treatments.

Table A.26: OLS regression analyses: Effects of the treatment groups

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Desire for action (post-treatment)	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
Con consensus treatment	-0.086	-0.293*	-0.051	-0.101^{+}	-0.132^{+}	-0.207*	2.699
	(0.066)	(0.119)	(0.075)	(0.060)	(0.077)	(0.086)	(2.546)
Pro consensus treatment	0.057	0.248**	0.073	0.164**	0.136*	0.057	2.527
	(0.065)	(0.088)	(0.058)	(0.053)	(0.059)	(0.066)	(2.809)
Constant	1.239***	1.894***	1.423***	0.696**	1.254***	1.881***	16.029^{+}
	(0.281)	(0.417)	(0.339)	(0.216)	(0.234)	(0.437)	(8.822)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	388	388	388	388	388	388	386
R^2	0.758	0.578	0.695	0.777	0.803	0.678	0.844

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables as well as pre-treatment desire for action. All included controls are listed in section A.3.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.27: OLS regression analyses: Effects of the treatment groups (with income variable)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Desire for action (post-treatment)	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
Con consensus treatment	-0.106	-0.320*	-0.074	-0.126*	-0.140^{+}	-0.241**	2.592
	(0.066)	(0.124)	(0.076)	(0.061)	(0.079)	(0.088)	(2.549)
Pro consensus treatment	0.037	0.239*	0.074	0.162**	0.130*	0.043	2.552
	(0.068)	(0.094)	(0.063)	(0.056)	(0.063)	(0.070)	(2.901)
Monthly net income	-0.043	0.054	0.011	-0.022	0.005	0.039	0.053
	(0.029)	(0.045)	(0.036)	(0.025)	(0.032)	(0.032)	(1.471)
Constant	1.184***	1.804***	1.533***	0.748***	1.257***	1.911***	12.632
	(0.280)	(0.430)	(0.345)	(0.216)	(0.242)	(0.448)	(8.896)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	360	360	360	360	360	360	358
R^2	0.767	0.590	0.688	0.780	0.803	0.686	0.844

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables as well as pre-treatment desire for action. All included controls are listed in section A.3.1 of the Appendix. The income variable is standardized. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.28: OLS regression analyses: Effects of the treatment groups (with p-values corrected for multiple hypothesis testing)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Desire for action (post-treatment)	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
Con consensus treatment	0.192	0.045	0.347	0.155	0.069	0.053	0.260
Pro consensus treatment	0.190	0.005	0.276	0.002	0.003	0.345	0.462
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables as well as pre-treatment desire for action. All included controls are listed in section A.3.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.29: OLS regression analyses: Effects of the treatment groups (with the delta as dependent variable)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Desire for action (delta)	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
Con consensus treatment	-0.046	-0.277*	-0.043	-0.104+	-0.112	-0.151+	2.793
	(0.070)	(0.125)	(0.078)	(0.061)	(0.082)	(0.090)	(2.641)
Pro consensus treatment	0.042	0.231*	0.053	0.155**	0.102	0.068	3.859
	(0.067)	(0.101)	(0.065)	(0.056)	(0.062)	(0.075)	(2.972)
Constant	0.284	0.230	0.242	0.149	0.314*	0.293+	10.320
	(0.178)	(0.222)	(0.148)	(0.147)	(0.152)	(0.162)	(9.103)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	388	388	388	388	388	388	386
R^2	0.041	0.110	0.050	0.073	0.093	0.068	0.084

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables. All included controls are listed in section A.3.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.30: OLS regression analyses: Effects of the treatment groups (including all respondents)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Adequacy	Urgency	Long Term	Self	Gov	World	Donations
Con consensus treatment	-0.068	-0.173	-0.030	-0.050	-0.096	-0.137+	1.613
	(0.059)	(0.109)	(0.067)	(0.056)	(0.068)	(0.077)	(2.267)
Pro consensus treatment	0.073	0.210*	0.067	0.141**	0.144*	0.053	1.468
	(0.060)	(0.094)	(0.058)	(0.053)	(0.060)	(0.065)	(2.467)
Constant	1.266***	1.850***	1.334***	0.809***	1.056***	1.875***	13.956+
	(0.247)	(0.390)	(0.301)	(0.215)	(0.222)	(0.381)	(7.406)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	468	468	468	468	468	468	466
R^2	0.754	0.567	0.696	0.756	0.805	0.673	0.864

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Specifications include control variables and interaction terms with these variables as well as pre-treatment desire for action. All included controls are listed in section A.3.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.31: Wilcoxon tests: Effect of the treatment groups

	(1) Adequacy	(2) Urgency	(3) Long Term	(4) Self	(5) Gov	(6) World
Rank Sum (con/disagree)	0.719	0.039	0.944	0.405	0.283	0.245
	(0.360)	(2.067)	(0.070)	(0.833)	(1.074)	(1.164)
Rank Sum (pro/disagree)	0.658	0.016	0.184	0.002	0.276	0.342
	(-0.442)	(-2.409)	(-1.329)	(-3.167)	(-1.088)	(-0.951)
Signed-Rank (con=0)	0.246	0.128	0.357	0.305	0.731	0.553
	(1.160)	(-1.521)	(-0.921)	(-1.025)	(-0.343)	(-0.593)
Signed-Rank (pro=0)	0.026	0.000	0.181	0.000	0.008	0.021
	(2.222)	(4.416)	(1.338)	(4.347)	(2.657)	(2.299)
Signed-Rank (disagree=0)	0.062	0.152	0.553	0.939	0.190	0.381
	(1.865)	(1.434)	(-0.594)	(0.076)	(1.311)	(0.877)

Notes. *Z* statistics in parentheses. Tests are run with the change in desire for action, respectively donations, from before to after the treatments.

Table A.32: OLS regression analyses: Effects of additional explanatory variables

Dependent variable:	(1)	(2)	(3)
Desire for action (post-treatment)	consensus con	disagreement	consensus pro
Tertiary education	-0.220	-0.073	-0.075
	(0.216)	(0.081)	(0.063)
Political interest	-0.144	0.012	-0.087**
	(0.101)	(0.051)	(0.032)
Own political orientation (left-right)	0.059	-0.052	0.016
	(0.057)	(0.044)	(0.028)
Support for favorite party	-0.029	0.044	0.065
	(0.069)	(0.050)	(0.043)
Political knowledge score	0.205	0.024	0.047
	(0.156)	(0.063)	(0.039)
Sustainability score	0.002	0.078+	0.048
	(0.077)	(0.045)	(0.040)
NEP score	0.073	-0.021	0.073*
	(0.070)	(0.054)	(0.031)
Climate change knowledge score	0.030	0.051	-0.006
	(0.056)	(0.059)	(0.039)
Trusting people in general	0.087*	0.005	-0.039
	(0.043)	(0.056)	(0.030)
Trusting parties	-0.010	0.037	-0.007
	(0.072)	(0.044)	(0.033)
Respondent would vote (D)	0.030	0.015	-0.098
	(0.225)	(0.143)	(0.085)
Constant	1.191*	1.033*	1.318***
	(0.500)	(0.480)	(0.320)
Remaining controls	Yes	Yes	Yes
Observations	113	156	119
R^2	0.795	0.761	0.896

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Additional to pre-treatment desire for action, remaining included controls are listed in section A.3.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.33: OLS regression analyses: Effects of additional explanatory variables (with the delta as dependent variable)

Dependent variable:	(1)	(2)	(3)
Desire for action (delta)	consensus con	disagreement	consensus pro
Tertiary education	-0.230	-0.096	-0.052
	(0.220)	(0.079)	(0.076)
Political interest	-0.116	0.023	-0.094**
	(0.100)	(0.054)	(0.031)
Own political orientation (left-right)	0.090	-0.030	0.017
	(0.055)	(0.039)	(0.030)
Support for favorite party	0.001	0.057	0.047
	(0.065)	(0.052)	(0.045)
Political knowledge score	0.196	0.014	0.053
	(0.157)	(0.069)	(0.040)
Sustainability score	0.003	0.075	0.028
	(0.081)	(0.046)	(0.041)
NEP score	-0.004	-0.104	-0.009
	(0.072)	(0.066)	(0.041)
Climate change knowledge score	-0.021	0.037	-0.047
	(0.049)	(0.058)	(0.038)
Trusting people in general	0.081+	-0.018	-0.047
	(0.043)	(0.059)	(0.034)
Trusting parties	-0.026	0.027	-0.007
	(0.074)	(0.045)	(0.037)
Respondent would vote (D)	-0.070	0.048	-0.077
	(0.197)	(0.156)	(0.090)
Constant	0.503+	0.136	0.227
	(0.290)	(0.201)	(0.163)
Remaining controls	Yes	Yes	Yes
Observations	113	156	119
R^2	0.145	0.143	0.147

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Remaining included controls are listed in section A.3.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.34: OLS regression analyses: Effects of additional explanatory variables (with p-values corrected for multiple hypothesis testing)

Dependent variable:	(1)	(2)	(3)
Desire for action (post-treatment)	consensus con	disagreement	consensus pro
University degree (D)	0.499	0.387	0.251
Political interest	0.318	0.814	0.013
Own pol. orientation (left - right)	0.343	0.276	0.563
Support for favorite party	0.711	0.392	0.180
Political knowledge score	0.417	0.718	0.255
Sustainability score	0.978	0.104	0.239
NEP score	0.311	0.699	0.026
Climate change knowledge score	0.596	0.403	0.882
Trusting people in general	0.045	0.937	0.212
Trusting parties	0.904	0.415	0.835
Respondent would vote (D)	0.901	0.919	0.258
Remaining controls	Yes	Yes	Yes

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Additional to pre-treatment desire for action, remaining included controls are listed in section A.3.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.35: OLS regression analyses: Effects of additional explanatory variables (including all respondents)

Dependent variable:	(1)	(2)	(3)
Desire for action (post-treatment)	consensus con	disagreement	consensus pro
Tertiary education	-0.193	-0.073	-0.024
	(0.181)	(0.081)	(0.081)
Political interest	-0.083	0.012	-0.091**
	(0.070)	(0.051)	(0.030)
Own political orientation (left-right)	0.058	-0.053	0.065+
	(0.042)	(0.045)	(0.037)
Support for favorite party	-0.060	0.047	0.043
	(0.055)	(0.054)	(0.030)
Political knowledge score	0.142	0.024	0.011
	(0.119)	(0.063)	(0.033)
Sustainability score	0.023	0.078+	0.054
	(0.054)	(0.045)	(0.042)
NEP score	0.015	-0.022	0.065+
	(0.051)	(0.056)	(0.035)
Climate change knowledge score	0.029	0.050	0.049
	(0.039)	(0.059)	(0.042)
Trusting people in general	0.054	0.005	-0.032
	(0.033)	(0.056)	(0.026)
Trusting parties	0.033	0.037	-0.025
	(0.058)	(0.045)	(0.031)
Respondent would vote (D)	0.040	0.015	-0.055
	(0.161)	(0.143)	(0.093)
Constant	1.090**	1.032*	1.354***
	(0.403)	(0.479)	(0.366)
Remaining controls	Yes	Yes	Yes
Observations	155	156	157
R^2	0.806	0.761	0.837

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Additional to pre-treatment desire for action, remaining included controls are listed in section A.3.1 of the Appendix. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.36: Probit regression analyses: Marginal effects of additional explanatory variables

Dependent variable:	(1)	(2)	(3)
Desire for action (change dummy)	consensus con	disagreement	consensus pro
Tertiary education	0.063	-0.039	-0.090
	(0.081)	(0.055)	(0.073)
Political interest	0.113*	0.012	-0.058
	(0.046)	(0.026)	(0.046)
Own political orientation (left-right)	0.011	-0.015	0.061+
	(0.036)	(0.024)	(0.033)
Support for favorite party	0.038	-0.067*	0.042
	(0.035)	(0.029)	(0.033)
Political knowledge score	-0.114*	-0.007	-0.006
	(0.054)	(0.034)	(0.036)
Sustainability score	-0.028	-0.028	0.052
	(0.036)	(0.030)	(0.035)
NEP score	-0.144***	-0.042	-0.013
	(0.042)	(0.028)	(0.042)
Climate change knowledge score	0.036	-0.039	-0.027
	(0.038)	(0.030)	(0.043)
Trusting people in general	0.019	0.044	-0.025
	(0.038)	(0.036)	(0.036)
Trusting parties	-0.021	0.076*	0.041
	(0.039)	(0.031)	(0.039)
Remaining controls	Yes	Yes	Yes
Observations	113	153	119

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Except for the respondent's voting decision, all controls listed in section A.3.1 of the Appendix are included. The "change dummy" is 1 if the respondent changed their answer to one of the desire for action questions from before to after the treatment and 0 otherwise. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.37: Probit regression analyses: Marginal effects of additional explanatory variables (with p-values corrected for multiple hypothesis testing)

Dependent variable:	(1)	(2)	(3)
Desire for action (change dummy)	consensus con	disagreement	consensus pro
University degree (D)	0.226	0.351	0.268
Political interest	0.183	0.755	0.188
Own pol. orientation (left - right)	0.748	0.714	0.081
Support for favorite party	0.630	0.067	0.259
Political knowledge score	0.140	0.995	0.798
Sustainability score	0.394	0.411	0.167
NEP score	0.014	0.149	0.573
Climate change knowledge score	0.464	0.253	0.681
Trusting people in general	0.774	0.166	0.674
Trusting parties	0.554	0.071	0.333
Remaining controls	Yes	Yes	Yes

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Except for the respondent's voting decision, all controls listed in section A.3.1 of the Appendix are included. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.38: Probit regression analyses: Marginal effects of additional explanatory variables (including all respondents)

Dependent variable:	(1)	(2)	(3)
Desire for action (change dummy)	consensus con	disagreement	consensus pro
Tertiary education	0.068	-0.039	-0.058
	(0.081)	(0.055)	(0.062)
Political interest	0.058	0.012	-0.057
	(0.039)	(0.026)	(0.039)
Own political orientation (left-right)	0.048	-0.016	0.038
	(0.033)	(0.024)	(0.026)
Support for favorite party	0.060*	-0.072*	0.009
	(0.030)	(0.032)	(0.027)
Political knowledge score	-0.084+	-0.007	-0.016
	(0.043)	(0.033)	(0.030)
Sustainability score	-0.067*	-0.028	0.060*
	(0.034)	(0.030)	(0.030)
NEP score	-0.092*	-0.044	-0.034
	(0.039)	(0.029)	(0.035)
Climate change knowledge score	0.032	-0.038	-0.033
	(0.036)	(0.030)	(0.038)
Trusting people in general	0.034	0.044	-0.018
	(0.036)	(0.036)	(0.029)
Trusting parties	-0.043	0.078*	0.055+
	(0.043)	(0.032)	(0.032)
Remaining controls	Yes	Yes	Yes
Observations	155	153	157

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Except for the respondent's voting decision, all controls listed in section A.3.1 of the Appendix are included. The "change dummy" is 1 if the respondent changed their answer to one of the desire for action questions from before to after the treatment and 0 otherwise. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

A.3.4 SEPARATE RESULTS FOR ALL OUTCOME VARIABLES

Table A.39: Wilcoxon tests: Effects of the treatment groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rank Sum (con/disagree)	0.719	0.719	0.719	0.039	0.039	0.039	0.944	0.944	0.944	0.785
	(0.360)	(0.360)	(0.360)	(2.067)	(2.067)	(2.067)	(0.070)	(0.070)	(0.070)	(-0.273)
Rank Sum (pro/disagree)	0.018	0.902	0.372	0.095	0.065	0.015	0.111	0.664	0.838	0.956
	(-2.365)	(0.123)	(0.893)	(-1.670)	(-1.844)	(-2.444)	(-1.596)	(-0.435)	(0.204)	(0.055)
Signed-Rank (pro=0)	0.000	0.227	0.865	0.002	0.006	0.000	0.536	0.412	0.795	0.980
	(3.695)	(1.209)	(-0.170)	(3.144)	(2.762)	(4.004)	(0.618)	(0.820)	(0.260)	(0.025)
Signed-Rank (con=0)	0.870	0.269	0.410	0.805	0.013	0.013	0.170	0.415	0.836	0.543
	(0.163)	(1.106)	(0.825)	(-0.246)	(-2.491)	(-2.476)	(-1.373)	(0.816)	(0.207)	(0.609)
Signed-Rank (disagree=0)	0.241	0.112	0.276	0.197	0.684	0.393	0.125	0.823	0.604	0.864
	(1.173)	(1.591)	(1.089)	(1.291)	(0.407)	(0.855)	(-1.534)	(0.223)	(0.519)	(0.172)

Notes. Z statistics in parentheses. Test for: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation.

Table A.40: OLS regression analyses: Effects of the treatment groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pro consensus	0.170*	0.042	-0.087	0.168^{+}	0.236*	0.288^{+}	0.128	0.028	0.002	3.859
	(0.070)	(0.112)	(0.085)	(0.095)	(0.115)	(0.161)	(0.097)	(0.076)	(0.079)	(2.972)
Con consensus	-0.065	-0.029	-0.045	-0.192	-0.288^{+}	-0.351*	-0.055	-0.018	-0.056	2.793
	(0.066)	(0.092)	(0.114)	(0.124)	(0.154)	(0.159)	(0.100)	(0.095)	(0.082)	(2.641)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	388	388	388	388	388	388	388	388	388	386
R^2	0.070	0.051	0.052	0.068	0.103	0.098	0.039	0.059	0.051	0.084

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. Specifications include control variables and interaction terms with these variables. All included controls are listed in section A.3.1 of the Appendix. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations.

Table A.41: OLS regression analyses: Effects of additional explanatory variables (con consensus)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Female	-0.035	0.237	0.050	-0.173	0.038	-0.372	-0.098	-0.038	-0.107	-1.682
	(0.134)	(0.161)	(0.182)	(0.219)	(0.308)	(0.266)	(0.183)	(0.197)	(0.128)	(3.490)
Age	0.124^{+}	0.018	-0.086	-0.250	0.037	-0.002	-0.140	-0.111	-0.151	-1.570
	(0.069)	(0.095)	(0.115)	(0.155)	(0.178)	(0.159)	(0.122)	(0.137)	(0.120)	(1.951)
Children (D)	-0.114	-0.021	0.170	0.086	-0.042	-0.085	-0.225	-0.080	-0.124	-3.940
	(0.118)	(0.186)	(0.251)	(0.201)	(0.238)	(0.208)	(0.141)	(0.148)	(0.108)	(3.666)
Living in a major city (D)	0.002	0.032	0.228	-0.112	0.285	0.400^{+}	-0.069	-0.058	0.122	-6.463
	(0.122)	(0.134)	(0.153)	(0.218)	(0.238)	(0.226)	(0.162)	(0.163)	(0.139)	(4.473)
Germany is country of birth (D)	-0.527	-0.412	0.487^{+}	-0.359	-0.785^{+}	-0.807^{+}	-0.719*	-0.492	-0.559^{+}	-2.093
	(0.326)	(0.302)	(0.278)	(0.421)	(0.457)	(0.477)	(0.324)	(0.386)	(0.294)	(4.480)
Duration (in seconds)	0.044	-0.010	0.053	-0.234	-0.043	-0.093	-0.132	-0.115	-0.079	-0.266
	(0.056)	(0.046)	(0.058)	(0.193)	(0.103)	(0.111)	(0.099)	(0.098)	(0.075)	(0.894)
Effort put into answering the survey	0.038	-0.114^{+}	-0.067	-0.024	-0.171	-0.155	-0.100	-0.013	-0.092	-0.243
	(0.053)	(0.066)	(0.070)	(0.095)	(0.139)	(0.099)	(0.079)	(0.104)	(0.059)	(1.786)
Tertiary education	-0.020	0.197	0.233	-0.237	-0.163	-0.455	-0.578^{+}	-0.552	-0.492	-9.630
	(0.170)	(0.155)	(0.153)	(0.404)	(0.408)	(0.401)	(0.335)	(0.370)	(0.321)	(7.089)
Political interest	0.056	-0.024	0.070	-0.247	-0.210	-0.180	-0.177	-0.131	-0.197	2.028
	(0.083)	(0.081)	(0.097)	(0.221)	(0.187)	(0.204)	(0.156)	(0.181)	(0.145)	(3.660)
Own political orientation (left-right)	0.092^{+}	0.146^{+}	0.083	0.112	0.209	0.133	0.047	-0.058	0.041	-0.326
	(0.054)	(0.075)	(0.087)	(0.126)	(0.147)	(0.120)	(0.080)	(0.075)	(0.053)	(1.748)
Support for favorite party	-0.006	-0.065	-0.094	0.120	0.124	0.107	-0.036	-0.035	-0.104^{+}	-4.272
	(0.044)	(0.084)	(0.106)	(0.119)	(0.174)	(0.146)	(0.067)	(0.081)	(0.055)	(2.755)
Political knowledge score	-0.114	0.141	-0.023	0.361	0.380	0.154	0.287	0.235	0.343	3.014
	(0.114)	(0.111)	(0.146)	(0.287)	(0.275)	(0.276)	(0.232)	(0.264)	(0.222)	(2.479)
Sustainability score	0.037	-0.105	-0.026	-0.037	0.125	0.045	-0.002	0.076	-0.081	4.069
	(0.069)	(0.074)	(0.090)	(0.146)	(0.164)	(0.151)	(0.126)	(0.140)	(0.096)	(3.475)
NEP score	0.020	0.005	-0.111	0.089	-0.030	0.023	0.010	-0.036	-0.003	-1.626
	(0.086)	(0.109)	(0.128)	(0.172)	(0.140)	(0.133)	(0.105)	(0.132)	(0.049)	(1.850)
Climate change knowledge score	0.012	0.045	-0.007	-0.123	-0.046	-0.093	0.005	-0.040	0.059	0.779
	(0.056)	(0.075)	(0.084)	(0.111)	(0.115)	(0.108)	(0.072)	(0.083)	(0.051)	(2.556)
Trusting people in general	0.001	-0.014	0.036	0.057	0.173	0.249^{+}	0.038	0.109	0.079	-3.170
	(0.051)	(0.089)	(0.103)	(0.118)	(0.123)	(0.146)	(0.078)	(0.073)	(0.058)	(2.330)
Trusting parties	0.031	0.053	0.153	-0.015	-0.048	-0.027	-0.095	-0.206^{+}	-0.084	1.129
	(0.068)	(0.083)	(0.113)	(0.144)	(0.158)	(0.148)	(0.110)	(0.113)	(0.097)	(2.419)
Respondent would vote (D)	0.259	0.353	0.043	-0.378	-0.649	-0.387	-0.144	-0.065	0.341*	-0.397
	(0.262)	(0.244)	(0.275)	(0.338)	(0.443)	(0.593)	(0.172)	(0.200)	(0.170)	(12.533)
Constant	0.341	-0.049	-0.734	0.765	0.963	1.011	1.064**	0.764^{+}	0.404	11.669
	(0.421)	(0.432)	(0.457)	(0.514)	(0.598)	(0.732)	(0.382)	(0.441)	(0.359)	(13.789)
Observations	113	113	113	113	113	113	113	113	113	113
R^2	0.111	0.130	0.108	0.108	0.149	0.139	0.190	0.151	0.258	0.162

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.42: OLS regression analyses: Effects of additional explanatory variables (disagreement)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Female	0.118	-0.058	-0.044	0.066	0.157	0.310	-0.129	0.091	-0.177	3.798
	(0.093)	(0.169)	(0.181)	(0.154)	(0.202)	(0.241)	(0.181)	(0.135)	(0.149)	(3.914)
Age	0.014	0.041	0.076	-0.118	-0.046	0.048	-0.044	-0.047	-0.095	-0.607
	(0.058)	(0.082)	(0.081)	(0.075)	(0.084)	(0.094)	(0.094)	(0.077)	(0.069)	(1.618)
Children (D)	-0.035	-0.029	-0.054	-0.132	-0.552*	-0.428+	-0.127	-0.229	0.115	-5.099
	(0.126)	(0.168)	(0.166)	(0.141)	(0.220)	(0.242)	(0.172)	(0.143)	(0.115)	(3.310)
Living in a major city (D)	-0.152	-0.060	0.019	0.084	-0.091	-0.181	0.064	-0.131	-0.001	3.726
	(0.095)	(0.138)	(0.132)	(0.162)	(0.236)	(0.266)	(0.172)	(0.156)	(0.150)	(3.286)
Germany is country of birth (D)	-0.321	-0.042	-0.560+	0.591	0.280	0.349	-0.374	-0.234	-0.054	-11.145+
	(0.315)	(0.648)	(0.334)	(0.469)	(0.485)	(0.901)	(0.273)	(0.234)	(0.167)	(5.666)
Duration (in seconds)	0.010	0.283	-0.510	0.306	-0.299	-0.427	-0.141	0.154	0.233	0.966
	(0.129)	(0.244)	(0.324)	(0.212)	(0.323)	(0.260)	(0.375)	(0.250)	(0.226)	(2.643)
Effort put into answering the survey	0.058	0.002	0.028	-0.023	0.098	0.039	0.079	0.052	0.028	-1.785
	(0.037)	(0.063)	(0.071)	(0.069)	(0.084)	(0.082)	(0.076)	(0.046)	(0.048)	(1.759)
Tertiary education	-0.022	0.051	-0.000	-0.268+	-0.052	-0.063	-0.147	-0.270*	-0.092	-0.266
	(0.100)	(0.162)	(0.140)	(0.136)	(0.154)	(0.183)	(0.192)	(0.120)	(0.120)	(3.420)
Political interest	-0.031	-0.021	0.119	0.034	-0.002	-0.070	0.080	0.069	0.033	2.669
	(0.056)	(0.088)	(0.095)	(0.096)	(0.127)	(0.138)	(0.086)	(0.068)	(0.067)	(2.017)
Own political orientation (left-right)	0.064	0.029	-0.075	0.021	-0.102	-0.052	-0.097	-0.034	-0.024	-1.946
	(0.055)	(0.083)	(0.069)	(0.059)	(0.063)	(0.068)	(0.080)	(0.077)	(0.077)	(1.883)
Support for favorite party	0.046	0.010	0.041	0.077	0.121	0.166	-0.046	0.110	-0.009	0.503
	(0.047)	(0.082)	(0.079)	(0.072)	(0.132)	(0.113)	(0.080)	(0.093)	(0.064)	(2.017)
Political knowledge score	0.069	0.050	-0.063	-0.063	0.139	0.159	-0.135	0.020	-0.046	0.615
	(0.054)	(0.082)	(0.096)	(0.117)	(0.146)	(0.175)	(0.096)	(0.091)	(0.092)	(1.874)
Sustainability score	0.021	0.126	0.107	0.177*	0.177	0.205	-0.030	-0.061	-0.043	0.734
	(0.050)	(0.088)	(0.075)	(0.068)	(0.113)	(0.134)	(0.073)	(0.065)	(0.061)	(2.249)
NEP score	-0.003	-0.095	-0.259*	-0.049	-0.129	-0.243+	-0.070	-0.064	-0.022	-2.624*
	(0.049)	(0.080)	(0.099)	(0.097)	(0.121)	(0.132)	(0.124)	(0.085)	(0.095)	(1.170)
Climate change knowledge score	0.004	0.024	0.114	0.088	-0.193	-0.039	0.121	0.100	0.117	2.639+
	(0.046)	(0.078)	(0.093)	(0.075)	(0.136)	(0.145)	(0.084)	(0.073)	(0.080)	(1.561)
Trusting people in general	-0.008	-0.068	-0.060	0.114+	-0.128	-0.096	0.004	0.073	0.005	0.438
	(0.065)	(0.101)	(0.112)	(0.068)	(0.128)	(0.135)	(0.079)	(0.111)	(0.098)	(1.610)
Trusting parties	0.082	0.121	0.010	-0.064	0.071	0.046	-0.003	-0.072	0.055	-1.699
	(0.054)	(0.087)	(0.087)	(0.079)	(0.084)	(0.108)	(0.087)	(0.089)	(0.079)	(1.848)
Respondent would vote (D)	0.130	0.307	-0.334	0.392	0.047	-0.156	0.149	-0.233	0.131	-18.205*
	(0.159)	(0.262)	(0.260)	(0.264)	(0.339)	(0.306)	(0.173)	(0.288)	(0.134)	(8.805)
Constant	0.253	-0.090	0.917*	-0.721	-0.115	-0.078	0.323	0.685	0.047	25.516**
	(0.364)	(0.699)	(0.417)	(0.557)	(0.538)	(0.917)	(0.338)	(0.444)	(0.210)	(9.210)
Observations	156	156	156	156	156	156	156	156	156	156
R^2	0.115	0.098	0.159	0.179	0.166	0.131	0.077	0.116	0.066	0.145

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

Table A.43: OLS regression analyses: Effects of additional explanatory variables (pro consensus)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Female	-0.184	-0.246	-0.021	-0.118	-0.060	-0.052	-0.098	0.049	-0.011	-1.184
	(0.122)	(0.195)	(0.149)	(0.170)	(0.148)	(0.153)	(0.123)	(0.138)	(0.173)	(5.958)
Age	0.003	0.012	0.010	0.034	0.044	0.090	-0.009	0.052	0.009	4.108
	(0.061)	(0.084)	(0.087)	(0.096)	(0.101)	(0.121)	(0.091)	(0.071)	(0.073)	(3.376)
Children (D)	0.035	-0.352	-0.075	0.296^{+}	-0.153	-0.268	0.223	0.090	0.035	4.496
	(0.147)	(0.215)	(0.175)	(0.166)	(0.220)	(0.258)	(0.140)	(0.129)	(0.097)	(4.975)
Living in a major city (D)	0.071	0.106	-0.077	0.039	0.371	0.556*	0.129	0.008	-0.040	2.451
	(0.154)	(0.145)	(0.097)	(0.174)	(0.238)	(0.252)	(0.129)	(0.112)	(0.081)	(5.521)
Germany is country of birth (D)	-0.250	-0.126	-0.315	0.904*	0.109	-0.194	0.128	-0.029	-0.102	-1.910
	(0.300)	(0.227)	(0.323)	(0.402)	(0.315)	(0.519)	(0.304)	(0.169)	(0.152)	(13.102)
Duration (in seconds)	0.003	0.047*	-0.011	-0.020	0.032^{+}	0.020	0.006	0.015	-0.012	0.070
	(0.013)	(0.021)	(0.011)	(0.015)	(0.016)	(0.017)	(0.018)	(0.011)	(0.016)	(0.770)
Effort put into answering the survey	0.012	0.103	-0.040	-0.034	0.084	0.016	-0.051	0.067	0.090^{+}	-3.640
	(0.061)	(0.083)	(0.054)	(0.076)	(0.057)	(0.064)	(0.049)	(0.053)	(0.046)	(3.866)
Tertiary education	-0.204^{+}	-0.149	0.034	0.115	-0.181	0.116	0.046	-0.056	-0.187	-12.024^{+}
	(0.120)	(0.147)	(0.117)	(0.152)	(0.165)	(0.205)	(0.190)	(0.136)	(0.126)	(6.194)
Political interest	-0.093	-0.197	-0.006	-0.249**	-0.169^{+}	-0.183^{+}	-0.020	-0.004	0.074	2.186
	(0.096)	(0.158)	(0.088)	(0.089)	(0.096)	(0.098)	(0.066)	(0.058)	(0.049)	(4.269)
Own political orientation (left-right)	-0.019	0.137^{+}	-0.011	-0.037	0.083	-0.007	-0.050	0.056	-0.003	-3.345
	(0.074)	(0.081)	(0.080)	(0.071)	(0.082)	(0.078)	(0.054)	(0.047)	(0.042)	(3.085)
Support for favorite party	0.010	0.010	-0.058	0.103	0.272*	-0.043	0.196	-0.061	-0.003	-10.930**
	(0.092)	(0.134)	(0.076)	(0.090)	(0.114)	(0.136)	(0.128)	(0.094)	(0.064)	(4.066)
Political knowledge score	0.036	0.230^{+}	0.064	0.125	0.053	0.053	0.012	-0.034	-0.066	1.503
	(0.086)	(0.128)	(0.069)	(0.090)	(0.094)	(0.125)	(0.094)	(0.080)	(0.059)	(4.039)
Sustainability score	0.153	0.216	-0.007	-0.095	0.028	0.057	-0.149	0.079	-0.028	-0.118
	(0.092)	(0.158)	(0.088)	(0.078)	(0.109)	(0.128)	(0.115)	(0.064)	(0.075)	(2.602)
NEP score	0.125^{+}	0.127	0.076	-0.240^{+}	-0.029	0.084	-0.043	-0.139^{+}	-0.045	-0.091
	(0.066)	(0.080)	(0.061)	(0.123)	(0.085)	(0.091)	(0.121)	(0.083)	(0.060)	(3.566)
Climate change knowledge score	-0.064	-0.146	0.038	0.150^{+}	-0.134	-0.163	-0.096	-0.031	0.021	-3.489
	(0.074)	(0.095)	(0.080)	(0.078)	(0.083)	(0.124)	(0.081)	(0.066)	(0.059)	(3.923)
Trusting people in general	-0.000	-0.104	0.008	0.035	-0.035	-0.109	0.035	-0.060	-0.190*	-0.099
	(0.066)	(0.086)	(0.061)	(0.087)	(0.083)	(0.094)	(0.081)	(0.068)	(0.095)	(3.077)
Trusting parties	-0.076	-0.071	0.124	-0.119	0.036	0.192*	-0.148*	-0.079	0.077	0.648
	(0.082)	(0.101)	(0.095)	(0.098)	(0.092)	(0.094)	(0.066)	(0.082)	(0.075)	(2.911)
Respondent would vote (D)	-0.214	-0.093	-0.149	-0.124	-0.381	0.326	-0.472	0.204	0.207	1.511
	(0.214)	(0.293)	(0.200)	(0.245)	(0.252)	(0.271)	(0.409)	(0.247)	(0.166)	(8.596)
Constant	0.763^{+}	0.666	0.478	-0.602	0.488	0.156	0.261	-0.143	-0.022	2.821
	(0.394)	(0.454)	(0.414)	(0.487)	(0.381)	(0.553)	(0.426)	(0.312)	(0.245)	(14.883)
Observations	119	119	119	119	119	119	119	119	119	117
R^2	0.149	0.232	0.087	0.231	0.173	0.155	0.149	0.133	0.139	0.212

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Dep. vars.: Delta of (1) Adequ. self; (2) Adequ. gov.; (3) Adequ. world; (4) Urgen. self; (5) Urgen. gov.; (6) Urgen. world; (7) Long t. self; (8) Long t. gov.; (9) Long t. world; (10) Donation. The sample size for column (7) is smaller due to the exclusion of deltas for donation decisions that deviated by more than five standard deviations. The coefficients of all explanatory variables except for dummies are standardized (z-score).They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable.

B

Public support for more ambitious climate policies

B.1 Materials and methods

B.1.1 Experimental instructions

The following paragraphs outline the experimental instructions as shown to participants. Instructions have been translated from German. Screenshots of the original instructions are shown in section B.1.2 of the Appendix.

Pre-treatment: Basic information on climate change and EU climate policies (all respondents)

Information about climate change

Since the beginning of industrialization people have been emitting large

amounts of greenhouse gases, for example by burning coal, oil, and gas. An example for greenhouse gases is carbon dioxide (CO_2). These greenhouse gases cause a gradual increase of the average global temperature. Since 1900, the earth's temperature has risen around 1 °C.

The average European household produces around 15.5 tons of CO_2 per year. This indicator is known as carbon footprint or ecological footprint.

Further developments depend in particular on the amount of greenhouse gases being emitted in the future. If the current trend continues, the average global temperature is likely to increase by up to 3 °C by the end of this century.

PM TREATMENT: INFORMATION PROVISION ON EU POLICY INSTRUMENTS

Information about European Union politics
To curb the consequences of climate change the European Union (EU) plans to reduce the emission of greenhouse gases. Despite the current COVID-19 pandemic, the EU wants to stick to their climate targets.

To reduce greenhouse gases, the EU relies on the following measures:

Expansion of renewable energies

Sustainable climate policy should further expand bioenergy, geothermal energy, hydropower, ocean energy, solar energy, and wind energy.

Increase of energy efficiency

Energy efficiency should be increased in the following areas: i) public and private transport, ii) energy efficient buildings and in iii) industrial processes.

Expansion of emissions trading

Emissions trading requires the presentation of a valid emission allowance for each ton of CO_2 emitted by a group of greenhouse gas producers. The EU determines how many tons of CO_2 may be emitted by this group in total. These emission certificates can be bought via emissions trading. If CO_2 is emitted without a certificate, penalty payments are required. Emitting little CO_2 leads correspondingly to spending little on certificates. **A reduction in the amount of emission certificates usually results in a higher price per ton of CO_2 emitted and thus increases the costs for greenhouse gas producers.**

The EU Emissions Trading System:

- includes 30 European countries and covers around 40% of the greenhouse gas emissions in the EU.
- limits emissions from around 11.000 plants in the energy sector and in the manufacturing industry as well as emissions from air carriers.
- **should also consider emissions from housing and transport in the future and can therefore affect the prices of fossil fuels (e.g. heating oil) and fuels (e.g. petrol and diesel).**

Current trend of greenhouse gases

In this figure you can see the development of greenhouse gas emissions (in million tons of CO_2) in the EU from 1990 to 2020. The figure shows that by 2020 already 20% less greenhouse gases have been emitted than in 1990.

Now, the EU plans to further reduce greenhouse gas emissions until 2030. In the figure, this year is marked with a red line.

Figure: Development of greenhouse gas emissions

CP TREATMENT: INFORMATION PROVISION ON EU-ETS

Information about European Union politics

To curb the consequences of climate change the European Union (EU) plans to reduce the emission of greenhouse gases. Despite the current COVID-19 pandemic, the EU wants to stick to their climate targets.

To reduce greenhouse gases, the EU relies on expansion of emissions trading:

Expansion of emissions trading

Emissions trading requires the presentation of a valid emission allowance for each ton of CO_2 emitted by a group of greenhouse gas producers. The EU determines how many tons of CO_2 may be emitted by this group in total. These emission certificates can be bought via emissions trading. If CO_2 is emitted without a certificate, penalty payments are required. Emitting little CO_2 leads correspondingly to spending little on certificates. **A reduction in the amount of emission certificates usually results in a higher price per ton of CO_2 emitted and thus increases the costs for greenhouse gas producers.**
The EU Emissions Trading System:

- includes 30 European countries and covers around 40% of the greenhouse gas emissions in the EU.
- limits emissions from around 11.000 plants in the energy sector and in the manufacturing industry as well as emissions from air carriers.
- **should also consider emissions from housing and transport in the future and can therefore affect the prices of fossil fuels (e.g. heating oil) and fuels (e.g. petrol and diesel).**

Development of the CO_2 price

This figure shows the price per ton of CO_2 over the last 10 years. At the moment the price per ton of CO_2 is around 55 Euro. The figure shows that the

price per ton of CO_2 has risen from around 10 Euro to 55 Euro in the last 10 years.

Now, the EU plans to further reduce greenhouse gas emissions until 2030. In the figure, this year is marked with a red line.

Figure: Price per ton of CO_2

PML/CPL TREATMENT: INTRODUCTION OF FIRST HYPOTHETICAL SCENARIO

Now we ask about your opinion on EU climate policy.
As a reminder:

- The expansion of [renewable energies, the increase in energy efficiency and the expansion of emissions trading are key measures/the expansion of emissions trading is a key measure] of EU climate policy.
- A reduction in the amount of emission certificates through EU policies usually results in a **higher price per ton of CO_2 and in higher costs for greenhouse gas producers.**
- The average European household produces around 15.5 tons of CO_2 per year.

Please consider the following hypothetical scenario:
The EU plans to [**reduce greenhouse gases by up to 40%** until 2030 compared to 1990/keep the **price per ton of CO_2** in emissions trading (including housing and transport) **constant at 55 Euro** until 2030] (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions by 40% until 2030/ CO_2 price of 55 Euro until 2030

PMH/CPH(80/105/130 TREATMENT): INTRODUCTION OF SECOND HYPOTHETICAL SCENARIO

Now we ask about your opinion on a changed EU climate policy.
As a reminder:

- The expansion of [renewable energies, the increase in energy efficiency and the expansion of emissions trading are key measures/the expansion of emissions trading is a key measure] of EU climate policy.
- A reduction in the amount of emission certificates through EU policies usually results in a **higher price per ton of CO_2 and in higher costs for greenhouse gas producers.**
- The average European household produces around 15.5 tons of CO_2 per year.

Please consider the following hypothetical scenario:
With the European 'Green Deal', the EU wants to create a more ambitious climate target. Therefore, the EU plans to [**reduce greenhouse gas emissions** in 2030 **by up to 55%** instead of 40% compared to 1990/increase the **price per ton of CO_2** in emissions trading (including housing and transport) **up to (80/105/130) Euro** instead of 55 Euro until 2030] (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions by 55% until 2030/ CO_2 price of 80/105/130 Euro until 2030

CONTROL GROUP PM/CP: INTRODUCTION OF SECOND HYPOTHETICAL SCENARIO

Now we ask about your opinion on EU climate policy again.
You get to see the same information again. This is for verification of the data

quality and helps to better understand your answers. It is not an error.

As a reminder:

- The expansion of [renewable energies, the increase in energy efficiency and the expansion of emissions trading are key measures/the expansion of emissions trading is a key measure] of EU climate policy.
- A reduction in the amount of emission certificates through EU policies usually results in a **higher price per ton of CO_2 and in higher costs for greenhouse gas producers.**
- The average European household produces around 15.5 tons of CO_2 per year.

Please consider the following hypothetical scenario:
The EU plans to [**reduce greenhouse gases by up to 40%** until 2030 compared to 1990/keep the **price per ton of CO_2** in emissions trading (including housing and transport) **constant at 55 Euro** until 2030] (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions until 2030/Development of CO_2 price until 2030

Examples for figures

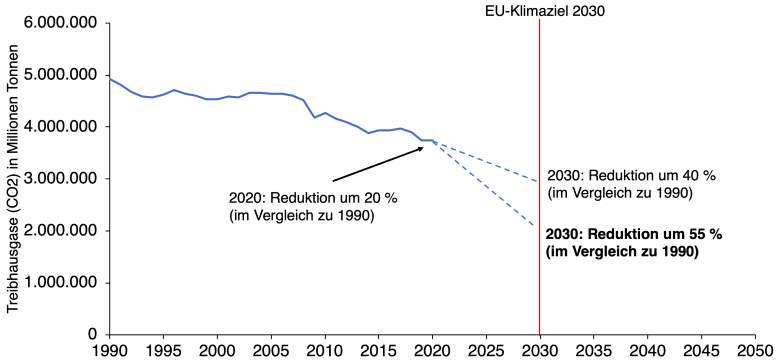


Figure for PMH

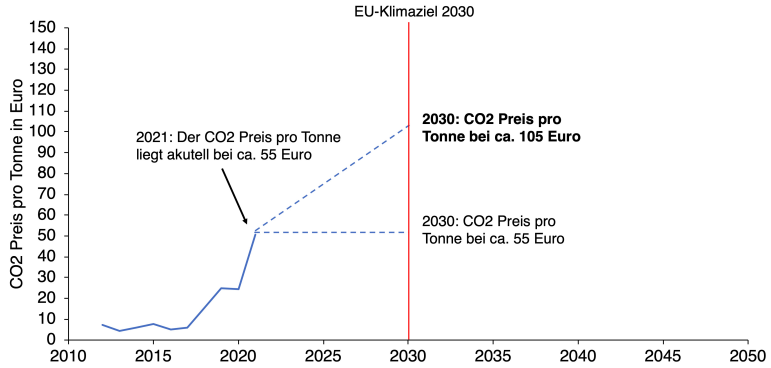


Figure for CPH105 (80/130 would be displayed accordingly)

B.1.2 Survey Screenshots (CPL/CPH130) treatment in German language

Screen 1

Nun folgen einige einführende Informationen zum Klimawandel und der Klimapolitik der Europäischen Union.

Bevor Sie im Folgenden zu Ihrer Meinung befragt werden, bitten wir Sie, die folgenden Informationen über den Klimawandel und die Klimapolitik der Europäischen Union aufmerksam durchzulesen.

→

Screen2

Informationen zum Klimawandel

Seit dem Beginn der Industrialisierung stoßen Menschen beispielsweise durch das Verbrennen von Kohle, Öl und Gas große Mengen von Treibhausgasen aus. Ein Beispiel für Treibhausgase ist Kohlendioxid (CO_2). Diese Treibhausgase bewirken, dass die durchschnittliche Erdtemperatur allmählich ansteigt. Seit 1900 ist die Erdtemperatur im Durchschnitt um etwa 1°C gestiegen.

Der durchschnittliche Haushalt in Europa produziert ca. 15,5 Tonnen CO_2 pro Jahr. Dieser Indikator wird auch als CO_2-Fußabdruck oder ökologischer Fußabdruck bezeichnet.

Die weitere Entwicklung hängt insbesondere davon ab, ob in Zukunft wenig oder viel Treibhausgase ausgestoßen werden. Wenn der derzeitige Trend anhält, steigt die durchschnittliche Erdtemperatur bis Ende dieses Jahrhunderts wahrscheinlich um bis zu 3°C an.

→

Screen 3

Informationen zur Politik der Europäischen Union

Um die Folgen des Klimawandels einzudämmen, plant die Europäische Union (EU) den Ausstoß von Treibhausgasen zu senken. Trotz der aktuellen Corona-Pandemie will die EU an ihren Klimazielen festhalten.

Zur Reduktion von Treibhausgasen setzt die EU auf den Ausbau des Emissionshandels:

Ausbau des Emissionshandels

Beim Emissionshandel muss eine Gruppe von Treibhausgasproduzenten für jede ausgestoßene Tonne an CO_2 eine gültige Emissionsberechtigung vorlegen. Die EU legt fest, wie viele Tonnen CO_2 von dieser Gruppe insgesamt ausgestoßen werden dürfen. Diese Emissionsberechtigungen können im Emissionshandel gekauft werden. Wird ohne Berechtigung CO_2 emittiert, sind Strafzahlungen fällig. Wer wenig CO_2 emittiert, muss entsprechend wenig für Berechtigungen ausgeben. **Eine Verringerung der Menge an Emissionsberechtigungen führt in der Regel zu einem höheren Preis pro ausgestoßener Tonne CO_2 und erhöht damit die Kosten für Treibhausgasproduzenten.**

Das EU-Emissionshandelssystem:

- umfasst 30 europäische Länder und deckt ca. 40% der Treibhausgasemissionen in der EU ab.
- begrenzt die Emissionen von rund 11.000 Anlagen im Stromsektor und in der verarbeitenden Industrie sowie die Emissionen von Luftfahrtunternehmen.
- **soll in Zukunft auch Emissionen aus Wohnen und Verkehr berücksichtigen und kann somit die Preise von fossilen Brennstoffen (z.B. Heizöl) und Kraftstoffen (z.B. Benzin und Diesel) beeinflussen.**

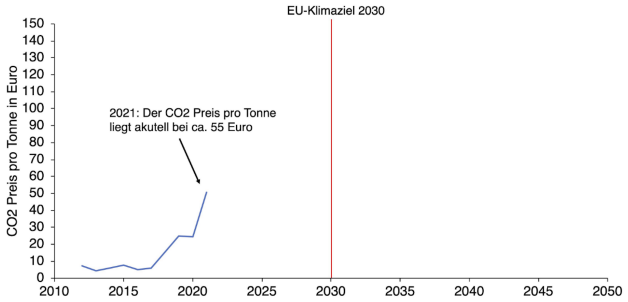
→

Screen 4

Entwicklung des CO_2 Preises

In dieser Abbildung ist der Preis pro Tonne CO_2 der letzten 10 Jahre zu sehen. Im Augenblick liegt der Preis pro Tonne CO_2 bei ca. 55 Euro. Aus der Abbildung wird ersichtlich, dass der Preis pro Tonne CO_2 in den letzten 10 Jahren von ca. 10 Euro auf 55 Euro gestiegen ist.

Die EU plant, nun den Ausstoß von Treibhausgasen bis in das Jahr 2030 weiter zu verringern. In der Abbildung ist dieses Jahr mit einer roten Linie gekennzeichnet.



→

Screen 5

Nun fragen wir Sie nach Ihrer Meinung zur EU Klimapolitik.

Zur Erinnerung:

- Der Ausbau des Emissionshandels ist eine zentrale Maßnahme der EU Klimapolitik.
- Eine Verringerung von Emissionsberechtigungen durch die EU-Politik führt in der Regel zu einem **höheren Preis pro Tonne CO_2 und zu höheren Kosten für Treibhausgasproduzenten.**
- Der durchschnittliche Haushalt in Europa produziert ca. 15,5 Tonnen CO_2 pro Jahr.

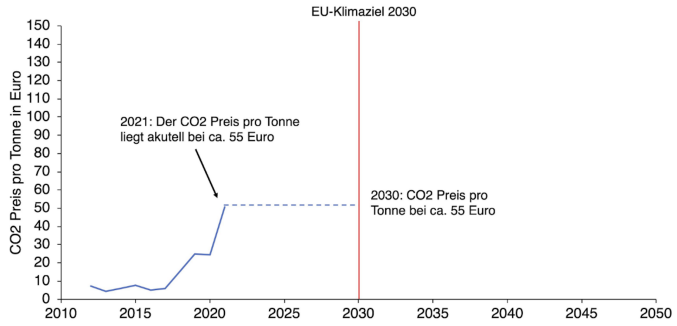
→

Screen 6

Bitte nehmen Sie folgendes hypothetisches Szenario an:

Die EU plant im Emissionshandel (inklusive Wohnen und Verkehr) den **Preis pro Tonne CO_2 konstant bei 55 Euro** bis in das Jahr 2030 zu halten (siehe Abbildung). Nehmen Sie an, dass neben der Industrie auch die Haushalte durch diesen Preis beeinflusst werden.

Andere Länder außerhalb der EU (z.B. China, USA) verfolgen ebenfalls Klimaziele zur Reduktion von Emissionen.



→

Screen 7

Nun fragen wir Sie nach Ihrer Meinung zu einer veränderten EU Klimapolitik.

Zur Erinnerung:

- Der Ausbau des Emissionshandels ist eine zentrale Maßnahme der EU Klimapolitik.
- Eine Verringerung von Emissionsberechtigungen durch die EU-Politik führt in der Regel zu einem **höheren Preis pro Tonne CO_2 und zu höheren Kosten für Treibhausgasproduzenten.**
- Der durchschnittliche Haushalt in Europa produziert ca. 15,5 Tonnen CO_2 pro Jahr.

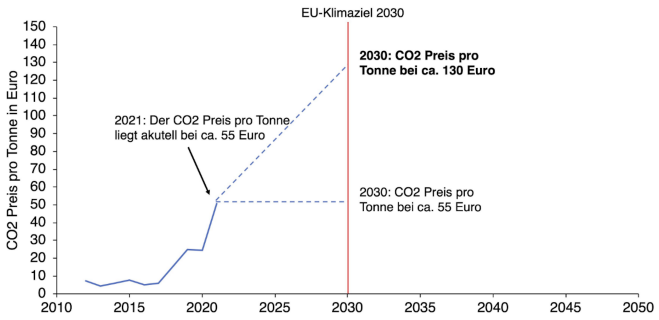
→

Screen 8

Bitte nehmen Sie folgendes hypothetisches Szenario an:

Mit dem europäischen „Green Deal“ will die EU das Klimaziel ambitionierter gestalten. Das heißt, die EU plant im Emissionshandel (inklusive Wohnen und Verkehr), anstatt 55 Euro pro Tonne CO_2, den **Preis pro Tonne CO_2 auf 130 Euro** bis in das Jahr 2030 zu erhöhen (siehe Abbildung). Nehmen Sie an, dass neben der Industrie auch die Haushalte durch diesen Preis beeinflusst werden.

Andere Länder außerhalb der EU (z.B. China, USA) verfolgen ebenfalls Klimaziele zur Reduktion von Emissionen.



→

B.1.3 Wording of survey items and construction of summary indices

Socio-demographic characteristics

Female: Dummy variable that is coded as 1 if the respondent stated "female" as their gender and 0 otherwise.

Diverse: Dummy variable that is coded as 1 if the respondent stated "diverse" as their gender and 0 otherwise.

Age (median): Dummy variable that is coded as 1 if the respondent is above median age and 0 otherwise.

Income (median): Dummy variable that is coded as 1 if the respondent earns above median income and 0 otherwise.

Education level (tertiary): Dummy variable that is coded as 1 if the respondent has at least a university degree, meaning any kind of university degree, doctor's degree or habilitation, and 0 otherwise.

Economic preferences

Adopted from the Global Preference Survey (GPS) which was implemented as part of the Gallup World Poll 2012 (**?**).

Survey items

The questions labeled "Willingness to act" are measured on a scale from 0 to 10, where 0 means "completely unwilling to do so" and 10 means "very willing to do so". The questions labeled "Self-assessment" are also measured on a scale from 0 to 10. However, here 0 means "does not describe me at all" and 10 means "describes me perfectly".

Patience:

1. Sequence of five interdependent quantitative questions: "*Suppose you were given the choice between receiving a payment today or a payment in 12 months. We will now present to you five situations. The payment today is the same in each of these situations. The payment in 12 months is different in every situation. For each of these situations we would like to know which you would choose. Please assume there is no inflation, i.e, future prices are the same as today's prices. Please consider the following: Would you rather receive 100 Euro today or x Euro in 12 months?*" The precise sequence of questions was given by a "tree" logic.

2. Willingness to act: "*How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future?*"

Risk:

1. . Similar to self-assessment: "*Please tell me, in general, how willing or unwilling you are to take risks. Please use the following scale from 0 to 10, where 0 means 'completely unwilling to take risks' and a 10 means you are 'very willing to take risks'.*"

2. Sequence of five interdependent quantitative questions: "*Please imagine the following situation. You can choose between a sure payment of a particular amount of money, or a draw, where you would have an equal chance of getting amount x or getting nothing. We will present to you five different situations. What would you prefer: a draw with a 50 percent chance of receiving 300 Euro, and the same 50 percent chance of receiving nothing, or the amount of x as a sure payment?*". The precise sequence of questions was given by a "tree"logic.

Positive Reciprocity:

1. Self-assessment: "*When someone does me a favor I am willing to return it.*"

2. Hypothetical situation: "*Please think about what you would do in the following situation. You are in an area you are not familiar with, and you*

realize you lost your way. You ask a stranger for directions. The stranger offers to take you to your destination. Helping you costs the stranger about 20 Euro in total. However, the stranger says he or she does not want any money from you. You have six presents with you. The cheapest present costs 5 Euro, the most expensive one costs 30 Euro. Do you give one of the presents to the stranger as a 'thank-you'-gift? If so, which present do you give to the stranger?" Answer options: No present / The present worth 5 / 10 / 15 / 20 / 25 / 30 Euro.

Negative Reciprocity:

1. Self-assessment: "*If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so.*"
2. Willingness to act: "*How willing are you to punish someone who treats you unfairly, even if there may be costs for you?*"
3. Willingness to act: "*How willing are you to punish someone who treats others unfairly, even if there may be costs for you?*"

Altruism:

1. Hypothetical situation: "*Imagine the following situation: Today you unexpectedly received 1,000 Euro. How much of this amount would you donate to a good cause?*" Values between 0 and 1000 are allowed.
2. Willingness to act: "*How willing are you to give to good causes without expecting anything in return?*"

Trust:

Self-assessment: "*I assume that people have only the best intentions.*"

Preference measures

After the imputation of missing values (we follow the procedure of Falk et al. **?**), the following preference measures are constructed by computing the z-scores of each item on the individual level and weighing them using the weights resulting from experimental validation:

Patience	= 0.7115185 × Staircase patience + 0.2884815 × Will. to give up sth. today
Risk	= 0.4729985 × Staircase risk + 0.5270015 × Will. to take risks
Pos. reciprocity	= 0.4847038 × Will. to return favor + 0.5152962 × Size of gift
Neg. reciprocity	= 0.6261938/2 × Will. to punish if oneself treated unfairly + 0.6261938/2 × Will. to punish if other treated unfairly + 0.3738062 × Will. to take revenge
Altruism	= 0.6350048 × Will. to give to good causes + 0.3649952 × Hypoth. donation
Trust	= The survey included only one corresponding item.

OTHER INDIVIDUAL FACTORS

Recent hazards

Financial impact of COVID-19: "*Did you experience any financial losses regarding your salary or otherwise in connection with the COVID-19 pandemic?*" Measured on 5-point scale from 1 to 5 where 1 means "no" and 5 means "very much so".

Impact of recent flood event: "*Have you been or are you directly or indirectly affected by the flood catastrophe that took place in some regions in Germany in July of this year?*" Measured on 5-point scale from 0 to 4 where 0 means "not at all" and 4 means "very much so".

Other factors

Belief in climate change: Standardized sum of the opinion on 12 statements about climate change, each measured on a 4-point scale where 1 means "completely disagree" and 4 means "completely agree". The higher the score, the more the respondent beliefs in and worries about climate change. The statements are:

1. *"I am concerned about climate change."*
2. *"The consequences of climate change can cause great harm to people in the EU."*

3. *"It is important that the EU climate goal is met."*
4. *"If we act in unison, it is possible to attain the EU climate goal."*
5. *"The actions of a single person have an impact on climate change."*
6. *"Humankind is responsible for climate change."*
7. *"Scientific predictions of climate change are trustworthy."*
8. *"There is a great deal of disagreement among scientists about whether climate change is actually happening."* (Reversely coded)
9. *"I am sure that climate change exists."*
10. *"Climate change is exaggerated in the media."* (Reversely coded)
11. *"Our children should be learning about the causes, effects and potential solutions of global warming in school."*
12. *"There is a link between global warming from greenhouse gas emissions and the more frequent occurrence of extreme weather events such as heavy rainfall."*

Attitudes towards EU policy instruments: Standardized sum of the opinion on four statements about climate policy instruments, each measured on a 4-point scale where 1 means “completely disagree” and 4 means “completely agree”. The higher the score, the more the respondent generally supports climate policies. The statements are:

1. *"Funding additional research on renewable energy sources, such as solar or wind energy."*
2. *"Phasing out coal production for energy supply (coal phase-out)."*
3. *"Payment of a CO_2 tax by fossil fuel producers which is used to reduce other taxes (e.g. income tax) by the same amount."*

4. *"Tax breaks for people who buy energy efficient vehicles or solar panels."*

Engagement in climate change action: Standardized sum of the opinion on seven potential actions that could be taken to protect the climate, each measured on a 5-point scale where 1 means “definitely would not” and 5 means “already doing this”. The potential actions are:

1. *"Publicly display a T-shirt/car sticker/pin/bracelet/sign about climate change."*
2. *"Donate money to an organization concerned with climate change."*
3. *"Volunteer at an organization concerned with climate change."*
4. *"Discuss climate change with an elected official or government member (via letter, email, phone, or in person)."*
5. *"Attend a political rally, speech, or organized protest about climate change."*
6. *"Write a letter to the editor of a newspaper or magazine, or call in to a live radio broadcast to share your opinion on climate change."*
7. *"Share information about climate change on social media."*

Trust in supranational institutions: Standardized sum of the answer to two questions on trust in institutions, i.e. the UN and EU. Both are measured on a 4-point scale where 1 means “completely distrust” and 4 means “completely trust”.

Trust in national institutions: Standardized sum of the answer to three questions on trust in institutions, i.e. the city, state and national government. All three are measured on a 4-point scale where 1 means “completely distrust” and 4 means “completely trust”.

Political ideology (left-right): "*When you think about your own political orientation where would you position yourself?*" Measured on a 10-point scale from 1 to 10 where 1 means "Left" and 10 means "Right".

REGIONAL CORRELATES

For summary statistics for these variables see Table B.2 in the Appendix.

East-West Germany

East Germany (former GDR): Dummy variable that is coded as 1 if the respondent lives on the territory of the former GDR and 0 otherwise.

Economic and policy variables

GDP (per capita): Average GDP over the years 2015 to 2019 in purchasing power parity per capita. Source: Eurostat (`https://ec.europa.eu/eurostat/de/web/regions/data/database`).

Employed in agriculture, fishing and mining (%): Employment in agriculture, forestry and fishing, mining and quarrying, as percentage of total employment in 2017 on NUTS2 level. Source: Quality of Governance (QoG) Institute at the University of Gothenburg and EU Labour force survey (LFS) (`https://www.gu.se/en/quality-government/qog-data/data-downloads/eu-regional-dataset`).

Employed in manufacturing (%): Employment in manufacturing, as percentage of total employment in 2017 on NUTS2 level. Source: Quality of Governance (QoG) Institute at the University of Gothenburg and EU Labour force survey (LFS) (`https://www.gu.se/en/quality-government/qog-data/data-downloads/eu-regional-dataset`).

Employed in services (%): Employment in services, as percentage of total employment in 2017 on NUTS2 level. Source: Quality of Governance (QoG) Institute at the University of Gothenburg and EU Labour force survey (LFS)

(https://www.gu.se/en/quality-government/qog-data/data-downloads/eu-regional-dataset).

EU structural funds (per capita): Per capita sum of four EU structural funds (Fund for European Aid to the Most Deprived (FEAD), European regional development fund (ERDF), European social fund (ESF), European agricultural fund for rural development (EAFRD)) in EUR for the programming period of 2014 to 2020. Source: European Commission (https://cohesiondata.ec.europa.eu/Other/Historic-EU-payments-regionalised-and-modelled/tc55-7ysv).

Climate change variables

Change in rainfall: Difference in the mean depth of rain water accumulated on a flat, horizontal and impermeable surface per unit area in meters between the periods 1985-1994 and 2005-2014 on NUTS2 level. Source: EU Copernicus Project (https://cds.climate.copernicus.eu/cdsapp#!/dataset/sis-energy-derived-reanalysis?tab=overview).
Change in temperature: Difference in the mean ambient air temperature near to the surface, typically at height of 2m, in kelvin between the periods 1985-1994 and 2005-2014 on NUTS2 level. Source: EU Copernicus Project (https://cds.climate.copernicus.eu/cdsapp#!/dataset/sis-energy-derived-reanalysis?tab=overview).
The climate variables for the NUTS2 region of Bremen were missing in the Cpernicus data. We replaced the values for Bremen with observations from the dataset collected by (Kalkuhl and Wenz, 2020).

B.2 Supplementary Analysis (robustness checks)

This section describes the details of the supplementary analysis. The main purpose of the supplementary analysis is to test against potential confounders that may affect our results.

B.2.1 RANDOMIZATION CHECK

Table B.1 shows summary statistics across treatments and for the total sample. The last column includes p-values from a Pearson's χ^2 test for the null hypothesis that socio-demograhpic characteristics are different across treatments. The null hypothesis can be rejected at conventional levels of statistical significance ($p < 0.05$).

B.2.2 NON-PARAMETRIC TESTS

The results of Figure 3.2 are robust to using non-parametric tests instead of t-tests. The mean support in PML is 3.82 and 3.58 in PMH (mean difference (MD) = -0.25, Wilcoxon matched-pairs signed-rank test, z = -35,24, P < 0.0001, n = 7208). The mean support in CPL is 3.21 and 2.65 in CPH (MD = -0.56, Wilcoxon matched-pairs signed-rank test, z = -35,24, P < 0.0001, n = 7208).

Turning to the comparison between treatments, public support is lower for the policy instrument of carbon pricing compared to general emission reduction goals as proposed by a mix of different policy measures (CPL vs. PML: MD = -0.61, Wilcoxon rank-sum test, z = -33,20, P < 0.0001, n = 14,439; CPH vs. PMH: MD = -0.92, Wilcoxon rank-sum test, z = -42,64, P < 0.0001, n = 14,457).

B.2.3 CHANGE IN PUBLIC SUPPORT

For the OLS regressions displayed in Table B.5, the statistical model underlying the results is

$$\Delta Support_{ir} = \alpha + \gamma' x_{ir} + \epsilon_{ir} \tag{B.1}$$

where $\Delta Support_{ir}$ is the change in support for climate policies of individual i living in region r and x_{ir} is a vector of socio-demographic characteristics (gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median values), income (indicator variable for above-median values), education level (indicator variable

for tertiary education)). Standard errors are clustered at the NUTS2 regional level. The regressions are run separately for the PM and the CP treatment. The constant describes the difference in public support between PML (CPL) and PMH (CPH). It is statistically significant, negative and stable in size for all six regressions presented, i.e. for both the CP and the PM treatment and when including all or some of the socio-demographic variables or none of them.

B.2.4 CONTROL GROUP

To rule out potential effects related to repetition, we provided the same information of PML and CPL twice to a control group. The results presented in Figure B.1 and Table B.6 replicate the procedure of Table B.5 and are thus likewise based on equation B.1. The results show that the constant is close to zero and statistically not significant across all specifications (including socio-demographic variables).

B.2.5 POLICY MIX OF INSTRUMENTS VS. CARBON PRICE

Table B.7 shows the results of OLS regressions based on the following statistical model:

$$Support_{ir} = \alpha + \beta \times PM_{ir} + \gamma' x_{ir} + \epsilon_{ir} \tag{B.2}$$

In this case $Support_{ir}$ is either support for the low (L) or the high (H) emission reduction goals of individual i living in region r. PM_{ir} is a dummy variable taking on the value of 1 if the respondent is in the PM treatment, and 0 if she is in the CP treatment. Thus, The coefficient β indicates the difference between PM and CP. The coefficient is always statistically significant and positive and has similar effect sizes across specifications. Standard errors are clustered at the NUTS2 regional level.

B.2.6 CHANGE IN PUBLIC SUPPORT FOR DIFFERENT LEVELS OF CARBON PRICES

For the results shown in Table B.8 we run the following statistical model employing OLS once again:

$$\Delta SupportCP_{ir} = \alpha + \beta_1 \times CPH105_{ir} + \beta_2 \times CPH130_{ir} + \gamma' x_{ir} + \epsilon_{ir} \quad \text{(B.3)}$$

where $\Delta SupportCP_{ir}$ is the change in public support for climate policies in the CP treatment of individual i living in region r. $CPH105_{ir}$ ($CPH130_{ir}$) is a dummy variable taking on the value 1 if the respondent is in the 105 (130) Euro condition, and 0 otherwise. The constant represents the reference category, i.e., the 80 Euro condition. The constant is negative and statistically significant, i.e., support decreases when the carbon price increases from 55 Euro to 80 Euro. The coefficients of $CPH105_{ir}$ ($CPH130_{ir}$) are negative and statistically significant across all specifications. Thus, they are significantly different to the 80 Euro condition. The Wald test at the bottom of Table B.8 indicates that $CPH105_{ir}$ and $CPH130_{ir}$ are statistically different. Standard errors are clustered at the NUTS2 regional level.

B.2.7 ROBUSTNESS CHECKS OF INDIVIDUAL FACTORS

Table B.9 provides the main results of individual factors that are associated with more ambitious climate policies (PMH and CPH). More specifically, the p-values in Figure 3.3 are taken from the OLS regressions in columns (3) and (7). As can be seen from the other columns of Table B.9, these results are robust to excluding i) regional fixed effects (columns (1) and (5)) and ii) baseline support as a control variable (columns (2) and (6)) and iii) clustering by respondent instead of NUTS2 region (columns (4) and (8)).

Table B.10 applies the same specification as B.9 but with low climate policies as dependent variable (PML and CPL) in the main results of individual factors that are associated with more ambitious climate policies (PMH and CPH). The results show similar patterns particularly for belief in climate change, attitudes

towards EU policy instruments, own pro-environmental behavior and trust in supranational institutions.

As can be seen in Tables B.11 and B.12, significance and direction remain essentially the same when we apply Ologit instead of OLS.

B.2.8 Robustness checks of regional factors

Figure B.6 shows the same results as Figure 3.4 in the main text, however, employing Ologit for the regressions instead of OLS. As can be seen, the results remain essentially the same.

We also present adjusted p-values to address concerns related to multiple testing. The procedure is explained in section A.2.2 of the Appendix. Our statistical inference does not change. Most correlations remain statistically significant at the significance levels of 95 % and 90 %, respectively.

B.3 Tables

Table B.1: Descriptive statistics and randomization check

	CP80		CP105		CP130		PM		Total sample		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	p-value
Age	49.56	(15.21)	49.01	(15.66)	49.56	(15.51)	49.61	(15.09)	49.49	(15.27)	0.133
Female	0.50	(0.50)	0.50	(0.50)	0.50	(0.50)	0.51	(0.50)	0.50	(0.50)	0.566
Diverse	0.00	(0.05)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.536
Income	2990.76	(1717.55)	2970.35	(1705.79)	2981.45	(1709.66)	2959.65	(1706.39)	2970.17	(1708.55)	0.939
Working	0.61	(0.49)	0.61	(0.49)	0.61	(0.49)	0.62	(0.48)	0.62	(0.49)	0.352
Unemployed	0.06	(0.25)	0.07	(0.25)	0.07	(0.25)	0.07	(0.25)	0.07	(0.25)	0.971
Student	0.05	(0.22)	0.06	(0.24)	0.06	(0.24)	0.05	(0.22)	0.05	(0.23)	0.075
Pensioner	0.25	(0.43)	0.25	(0.43)	0.23	(0.42)	0.24	(0.42)	0.24	(0.43)	0.580
Observations	2374		2369		2355		7208		14306		

Notes. "Age" is the age of the respondent ranging from 18 to 90 years. "Female" is coded as 1 if the respondent was female and 0 otherwise. "Diverse" is coded as 1 if the respondent was of non-binary gender and 0 otherwise. "Income" is coded as the mean income of the income section (22 sections from "less than 200 Euro" to "7,500 Euro and more") the respondent selected to be in. "Working" is coded as 1 if the respondent stated to either work full-time or part-time or to be self-employed and 0 otherwise. "Unemployed" is coded as 1 if the respondent is unemployed and either looking for a job or not and 0 otherwise. "Student" is coded as 1 if the respondent stated to either be a student at a university or school or doing an apprenticeship and 0 otherwise. "Pensioner" is coded as 1 if the respondent is a pensioner and 0 otherwise. The last column shows p-values for the null hypothesis of perfect randomization (χ^2-tests).

Table B.2: Descriptive statistics for individual and regional factors

	Mean	SD	Min	Max	N
Age	49.4	(15.3)	18	90	14789
Female	0.51	(0.50)	0	1	14789
Diverse	0.0020	(0.044)	0	1	14789
Income	2950.5	(1710.3)	150	8750	14789
Tertiary education	0.29	(0.46)	0	1	14777
Belief in climate change	3.07	(0.65)	1	4	14789
Attitudes towards EU policy instruments	3.01	(0.70)	1	4	14789
Engagement in climate change action	2.22	(0.87)	1	5	14789
Trust in supranational institutions	2.38	(0.75)	1	4	14789
Trust in national institutions	2.48	(0.70)	1	4	14789
Political ideology (left-right)	5.16	(1.76)	1	10	14789
Finanical impact of COVID-19	2.05	(1.20)	1	5	14789
Impact of recent flood event	0.33	(0.84)	0	4	14789
East Germany (former GDR)	0.15	(0.36)	0	1	14789
GDP (per capita)	36149.5	(8083.8)	24740	58500	14789
Employed in agriculture, fishing and mining (%)	1.56	(0.81)	0.50	3.80	13326
Employed in manufacturing (%)	18.9	(5.80)	7.50	29.7	14789
Employed in services (%)	71.4	(6.20)	59.9	86	14789
EU cohesion funds (per capita)	18.3	(10.7)	10.1	50.2	14789
Change in rainfall	0.0015	(0.024)	-0.057	0.061	14789
Change in temperature	0.74	(0.100)	0.48	0.89	14789

Notes. Economic Preferences are excluded from this table as they are standardized by construction. The scores listed here (from "Belief in climate change" to "Trust in national institutions") are constructed as the average answer to the respective questions they consist of for better readability. In the analysis they are employed as the standardized sum of the respective questions they consist of. More information on the construction and scale of the variables can be found in section B.1.3.

Table B.3: Cronbach's alpha for scores

	Cronbach's alpha
Belief in climate change	0.929
Attitudes towards EU policy instruments	0.806
Engagement in climate change action	0.898
Trust in supranational institutions	0.820
Trust in national institutions	0.849

Notes. Economic Preferences are excluded from this table as they are standardized by construction. The scores listed here are constructed as the standardized sum of the respective questions they consist of. More information on the construction and scale of the scores can be found in section B.1.3.

Table B.4: Pre-post differences in public support for climate policies across treatments including CP 80/105/130

	Observations	Policy Scenario L mean support		Policy Scenario H mean support		Difference		T-test p-value	T-test Confidence Intervall	
Control group (overall)	206	3.539	(1.137)	3.519	(1.167)	0.019	(0.407)	0.494	-0.036	0.075
Control group (PM)	109	3.817	(1.029)	3.789	(1.089)	0.028	(0.253)	0.259	-0.020	0.075
Control group (CP)	97	3.227	(1.177)	3.216	(1.183)	0.010	(0.530)	0.849	-0.095	0.116
Treatment group (overall)	14306	3.521	(1.137)	3.119	(1.305)	0.401	(1.136)	0.000	0.383	0.420
Treatment group (PM)	7208	3.825	(1.050)	3.579	(1.173)	0.246	(0.792)	0.000	0.228	0.264
Treatment group (CP)	7098	3.212	(1.139)	2.653	(1.266)	0.559	(1.384)	0.000	0.527	0.591
Treatment group (CP80)	2374	3.179	(1.146)	2.746	(1.256)	0.433	(1.297)	0.000	0.381	0.485
Treatment group (CP105)	2369	3.213	(1.122)	2.645	(1.271)	0.568	(1.416)	0.000	0.511	0.625
Treatment group (CP130)	2355	3.244	(1.148)	2.568	(1.265)	0.676	(1.424)	0.000	0.618	0.734

Notes. Standard deviations are in parentheses. P-values are based on one sample two-sided t-tests. 95 % Confidence Interval.

Table B.5: OLS regression analyses: Change in public support

	(1)	(2)	(3)	(4)	(5)	(6)
	Δ PM	Δ PM	Δ PM	Δ CP	Δ CP	Δ CP
Constant	-0.246***	-0.239***	-0.189***	-0.559***	-0.370***	-0.472***
	(0.009)	(0.018)	(0.023)	(0.016)	(0.032)	(0.039)
Female		0.021	0.014		-0.143***	-0.124***
		(0.019)	(0.019)		(0.033)	(0.033)
Diverse		0.084	0.046		0.524	0.578
		(0.199)	(0.197)		(0.395)	(0.394)
Age (median)		-0.034^{+}	-0.043*		-0.232***	-0.210***
		(0.019)	(0.019)		(0.033)	(0.033)
Income (median)			-0.073***			0.006
			(0.019)			(0.033)
Tertiary education			-0.009			0.266***
			(0.021)			(0.039)
R^2	0.000	0.001	0.003	0.000	0.009	0.016
Observations	7208	7208	7205	7098	7098	7092

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 to 3 show results for change in support in the PM treatment as dependent variable, columns 4 to 6 for change in support in the CP treatment. The dependent variables are generated as the difference between support under a scenario of low emission reductions goals and under a scenario of high emission reductions goals. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option).

Table B.6: OLS regression analyses: Control group

	(1)	(2)	(3)	(4)	(5)	(6)
	Δ PM	Δ PM	Δ PM	Δ CP	Δ CP	Δ CP
Constant	-0.028	-0.000	-0.001	-0.010	-0.163	-0.154
	(0.024)	(0.035)	(0.048)	(0.054)	(0.122)	(0.134)
Female		-0.038	-0.036		0.166	0.117
		(0.049)	(0.050)		(0.113)	(0.111)
Diverse						
Age (median)		-0.025	-0.028		0.129	0.146
		(0.044)	(0.042)		(0.111)	(0.117)
Income (median)			-0.032			0.123
			(0.053)			(0.116)
Tertiary education			0.050			-0.212
			(0.055)			(0.133)
R^2	0.000	0.006	0.016	0.000	0.034	0.070
Observations	109	109	109	97	97	97

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 to 3 show results for change in support in the PM treatment as dependent variable, columns 4 to 6 for change in support in the CP treatment. This table shows the results for the control group, i.e. the group that was informed about the low emission reduction goals scenario two times in a row without any new information. The dependent variables are generated as the difference between support under this scenario shown for the first time and the second time. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option).

Table B.7: OLS regression analyses: Policy mix of instruments vs. carbon price

	(1) Low	(2) Low	(3) Low	(4) High	(5) High	(6) High
PM	0.610***	0.609***	0.608***	0.925***	0.925***	0.923***
	(0.018)	(0.018)	(0.018)	(0.020)	(0.020)	(0.020)
Female		0.111***	0.130***		0.048*	0.074***
		(0.018)	(0.019)		(0.021)	(0.021)
Diverse		-0.168	-0.126		0.107	0.154
		(0.213)	(0.212)		(0.227)	(0.229)
Age (median)		-0.000	0.020		-0.135***	-0.107***
		(0.018)	(0.019)		(0.020)	(0.021)
Income (median)			0.069***			0.032
			(0.019)			(0.021)
Tertiary education			0.159***			0.286***
			(0.021)			(0.023)
Constant	3.212***	3.157***	3.052***	2.650***	2.696***	2.566***
	(0.013)	(0.020)	(0.024)	(0.015)	(0.022)	(0.026)
R^2	0.072	0.075	0.080	0.126	0.129	0.140
Observations	14439	14439	14429	14457	14457	14448

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 to 3 show results for support under a scenario of low emission reductions goals as dependent variable, columns 4 to 6 for support under a scenario of high emission reductions goals as dependent variable. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). "PM" is coded as 1 if the respondent was part of the PM treatment and 0 in case of the CP treatment.

Table B.8: OLS regression analyses: Change in support for different levels of carbon prices

	(1)	(2)	(3)
	Δ CP	Δ CP	Δ CP
Constant	-0.433***	-0.241***	-0.345***
	(0.027)	(0.038)	(0.044)
CPH105	-0.135***	-0.139***	-0.135***
	(0.039)	(0.039)	(0.039)
CPH130	-0.243***	-0.244***	-0.242***
	(0.040)	(0.039)	(0.039)
Female		-0.143***	-0.125***
		(0.033)	(0.033)
Diverse		0.495	0.550
		(0.397)	(0.396)
Age (median)		-0.234***	-0.212***
		(0.033)	(0.033)
Income (median)			0.006
			(0.033)
Tertiary education			0.264***
			(0.039)
Test of equality of coefficients			
CPH105 vs. CPH130	0.108	0.106	0.107
	(0.041)	(0.041)	(0.041)
	[0.009]	[0.010]	[0.009]
R^2	0.005	0.014	0.022
Observations	7098	7098	7092

Notes. * p<0.05, ** p<0.01, *** p<0.001.Clustered standard errors in parentheses (NUTS2). For the test of equality of coefficients, the p-values of the Wald test are included in square brackets. The table shows results for change in support in the CP treatment as dependent variable. The dependent variable is generated as the difference between support under a scenario of low emission reductions goals and under a scenario of high emission reductions goals. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). "CPH105" and "CPH130" are treatment indicators. The omitted category is the treatment "CPH80".

Table B.9: OLS regression analyses: Individual factors of ambitious climate policies (PMH and CPH)

	(1) PM	(2) PM	(3) PM	(4) PM	(5) CP	(6) CP	(7) CP	(8) CP
Patience	-0.006	-0.005	-0.004	-0.004	0.040*	0.041**	0.041**	0.041**
	(0.014)	(0.014)	(0.011)	(0.010)	(0.015)	(0.015)	(0.014)	(0.015)
Risk	0.040**	0.041**	0.018	0.018	0.053***	0.051***	0.051***	0.051***
	(0.012)	(0.012)	(0.012)	(0.011)	(0.013)	(0.013)	(0.013)	(0.015)
Positive reciprocity	-0.049***	-0.049***	-0.031**	-0.031**	-0.049***	-0.048***	-0.046**	-0.046***
	(0.012)	(0.013)	(0.010)	(0.010)	(0.013)	(0.013)	(0.013)	(0.014)
Negative reciprocity	0.032*	0.033*	0.030**	0.030**	0.055***	0.053***	0.050***	0.050***
	(0.013)	(0.012)	(0.010)	(0.009)	(0.012)	(0.013)	(0.013)	(0.014)
Trust	0.045***	0.046***	0.036***	0.036***	0.063***	0.065***	0.060***	0.060***
	(0.012)	(0.012)	(0.010)	(0.010)	(0.016)	(0.016)	(0.015)	(0.014)
Altruism	0.042**	0.043**	0.019+	0.019+	0.004	0.005	-0.002	-0.002
	(0.012)	(0.013)	(0.010)	(0.010)	(0.015)	(0.015)	(0.015)	(0.015)
Finanical impact of COVID-19	-0.023*	-0.026*	-0.004	-0.004	-0.045***	-0.046***	-0.045***	-0.045***
	(0.010)	(0.011)	(0.008)	(0.009)	(0.012)	(0.012)	(0.013)	(0.014)
Impact of recent flood event	0.030**	0.030*	0.028**	0.028**	0.089***	0.095***	0.086***	0.086***
	(0.011)	(0.012)	(0.010)	(0.010)	(0.018)	(0.018)	(0.018)	(0.015)
Belief in climate change	0.448***	0.448***	0.185***	0.185***	0.240***	0.239***	0.215***	0.215***
	(0.018)	(0.018)	(0.016)	(0.018)	(0.018)	(0.019)	(0.019)	(0.021)
Attitudes towards EU policy instruments	0.217***	0.220***	0.099***	0.099***	0.157***	0.160***	0.138***	0.138***
	(0.020)	(0.021)	(0.018)	(0.016)	(0.018)	(0.019)	(0.019)	(0.021)
Engagement in climate change action	0.146***	0.145***	0.120***	0.120***	0.222***	0.220***	0.212***	0.212***
	(0.011)	(0.010)	(0.009)	(0.011)	(0.017)	(0.017)	(0.018)	(0.017)
Trust in supranational institutions	0.128***	0.130***	0.075***	0.075***	0.130***	0.125***	0.109***	0.109***
	(0.018)	(0.018)	(0.016)	(0.015)	(0.019)	(0.020)	(0.020)	(0.020)
Trust in national institutions	-0.035*	-0.037**	-0.071***	-0.071***	0.036*	0.036*	0.011	0.011
	(0.014)	(0.014)	(0.013)	(0.014)	(0.017)	(0.016)	(0.015)	(0.020)
Political ideology (left-right)	-0.043***	-0.041***	-0.027**	-0.027**	-0.052**	-0.054**	-0.059***	-0.059***
	(0.008)	(0.008)	(0.009)	(0.010)	(0.016)	(0.016)	(0.015)	(0.014)
Carbon Price: 105 Euro					-0.119***	-0.130***	-0.131***	-0.131***
					(0.022)	(0.023)	(0.022)	(0.030)
Carbon Price: 130 Euro					-0.182***	-0.190***	-0.200***	-0.200***
					(0.032)	(0.031)	(0.029)	(0.031)
Constant	3.613***	3.575***	1.261***	1.261***	2.706***	2.605***	2.077***	2.077***
	(0.039)	(0.039)	(0.081)	(0.083)	(0.066)	(0.065)	(0.082)	(0.094)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nuts2 FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Baseline	No	No	Yes	Yes	No	No	Yes	Yes
Clustered SE	NUTS2	NUTS2	NUTS2	ID	NUTS2	NUTS2	NUTS2	ID
R^2	0.482	0.487	0.628	0.628	0.321	0.328	0.346	0.346
Observations	7046	7007	7007	7007	7003	6919	6919	6919

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses. Columns 1 to 4 show results for support under a scenario of high emission reductions goals in the PM treatment as dependent variable, columns 5 to 8 for support under a scenario of high emission reductions goals in the CP treatment as dependent variable. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Depending on the column, specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects, subnational region fixed effects, and the support for the low goal scenarios. For the CP treatment indicators in columns 5 to 8, the carbon price of 80 Euro is the omitted category.

Table B.10: OLS regression analyses: Individual factors of low climate policies (PML and CPL)

	(1) PM	(2) PM	(3) CP	(4) CP
Patience	-0.002	-0.002	0.001	0.002
	(0.011)	(0.011)	(0.014)	(0.014)
Risk	0.039**	0.040**	0.005	0.005
	(0.012)	(0.012)	(0.015)	(0.016)
Positive reciprocity	-0.030**	-0.030**	-0.006	-0.006
	(0.011)	(0.011)	(0.014)	(0.014)
Negative reciprocity	0.004	0.005	0.015	0.013
	(0.009)	(0.009)	(0.016)	(0.016)
Trust	0.017	0.017	0.028^{+}	0.028^{+}
	(0.010)	(0.010)	(0.014)	(0.014)
Altruism	0.040**	0.041***	0.041*	0.042**
	(0.011)	(0.011)	(0.015)	(0.015)
Finanical impact of COVID-19	-0.035***	-0.036***	-0.004	-0.003
	(0.007)	(0.007)	(0.012)	(0.012)
Impact of recent flood event	0.003	0.004	0.050***	0.051***
	(0.009)	(0.010)	(0.013)	(0.013)
Belief in climate change	0.442***	0.440***	0.147***	0.144***
	(0.018)	(0.017)	(0.024)	(0.024)
Attitudes towards EU policy instruments	0.200***	0.200***	0.136***	0.138***
	(0.017)	(0.017)	(0.018)	(0.018)
Engagement in climate change action	0.040***	0.040***	0.052*	0.053*
	(0.010)	(0.010)	(0.021)	(0.021)
Trust in supranational institutions	0.090***	0.092***	0.102***	0.100***
	(0.016)	(0.015)	(0.021)	(0.021)
Trust in national institutions	0.057***	0.055***	0.144***	0.145***
	(0.015)	(0.015)	(0.018)	(0.019)
Political ideology (left-right)	-0.024*	-0.024*	0.030^{+}	0.031^{+}
	(0.010)	(0.011)	(0.018)	(0.017)
Carbon Price: 105 Euro			0.013	0.010
			(0.031)	(0.031)
Carbon Price: 130 Euro			0.061*	0.060*
			(0.029)	(0.028)
Constant	3.861***	3.863***	3.155***	3.181***
	(0.034)	(0.032)	(0.064)	(0.067)
Socio-economic controls	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes
Nuts2 FE	No	Yes	No	Yes
R^2	0.506	0.509	0.177	0.182
Observations	7048	7048	6978	6978

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 and 2 show results for support under a scenario of low emission reductions goals in the PM treatment as dependent variable, columns 3 and 4 for support under a scenario of low emission reductions goals in the CP treatment as dependent variable. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects and subnational region fixed effects. For the CP treatment indicators in columns 3 and 4, the carbon price of 80 Euro is the omitted category.

Table B.11: Ologit regression analyses: Individual factors of ambitious climate policies (PMH and CPH)

	(1) PM	(2) PM	(3) CP	(4) CP
Patience	-0.010	-0.008	0.064*	0.061*
	(0.031)	(0.031)	(0.026)	(0.026)
Risk	0.050^{+}	0.050	0.098***	0.100***
	(0.030)	(0.030)	(0.024)	(0.025)
Positive reciprocity	-0.066*	-0.065*	-0.113***	-0.114***
	(0.027)	(0.027)	(0.025)	(0.025)
Negative reciprocity	0.070*	0.068*	0.113***	0.113***
	(0.028)	(0.028)	(0.023)	(0.024)
Trust	0.084***	0.086***	0.119***	0.122***
	(0.025)	(0.025)	(0.029)	(0.029)
Altruism	0.060*	0.063*	0.006	0.005
	(0.026)	(0.026)	(0.029)	(0.030)
Finanical impact of COVID-19	-0.013	-0.015	-0.078***	-0.081***
	(0.021)	(0.021)	(0.023)	(0.024)
Impact of recent flood event	0.075**	0.076**	0.155***	0.166***
	(0.025)	(0.027)	(0.031)	(0.033)
Belief in climate change	0.475***	0.480***	0.444***	0.451***
	(0.042)	(0.043)	(0.038)	(0.039)
Attitudes towards EU policy instruments	0.238***	0.242***	0.243***	0.241***
	(0.050)	(0.050)	(0.037)	(0.038)
Engagement in climate change action	0.328***	0.328***	0.369***	0.370***
	(0.025)	(0.024)	(0.033)	(0.034)
Trust in supranational institutions	0.188***	0.190***	0.199***	0.198***
	(0.040)	(0.041)	(0.034)	(0.035)
Trust in national institutions	-0.212***	-0.216***	0.048^{+}	0.044
	(0.037)	(0.036)	(0.029)	(0.030)
Political ideology (left-right)	-0.085***	-0.081***	-0.114***	-0.115***
	(0.021)	(0.021)	(0.025)	(0.026)
Carbon Price: 105 Euro			-0.233***	-0.244***
			(0.039)	(0.040)
Carbon Price: 130 Euro			-0.361***	-0.376***
			(0.055)	(0.053)
Socio-economic controls	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes
Nuts2 FE	No	Yes	No	Yes
Baseline	Yes	Yes	Yes	Yes
R^2	0.323	0.325	0.143	0.146
Observations	7007	7007	6919	6919

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 to 3 show results for support under a scenario of high emission reductions goals in the PM treatment as dependent variable, columns 4 to 6 for support under a scenario of high emission reductions goals in the CP treatment as dependent variable. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Depending on the column, specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects, subnational region fixed effects and the support for the low goal scenarios. For the CP treatment indicators in columns 4 to 6, the carbon price of 80 Euro is the omitted category.

Table B.12: Ologit regression analyses: Individual factors of low climate policies (PML and CPL)

	(1) PM	(2) PM	(3) CP	(4) CP
Patience	0.013	0.012	-0.008	-0.005
	(0.027)	(0.026)	(0.023)	(0.023)
Risk	0.126***	0.127***	0.025	0.027
	(0.029)	(0.029)	(0.026)	(0.026)
Positive reciprocity	-0.041	-0.039	-0.005	-0.007
	(0.027)	(0.028)	(0.025)	(0.025)
Negative reciprocity	0.003	0.005	0.029	0.026
	(0.024)	(0.023)	(0.027)	(0.027)
Trust	0.046^{+}	0.042	0.062*	0.060*
	(0.028)	(0.028)	(0.025)	(0.025)
Altruism	0.096***	0.100***	0.080**	0.082**
	(0.028)	(0.028)	(0.028)	(0.028)
Finanical impact of COVID-19	-0.098***	-0.100***	-0.016	-0.014
	(0.021)	(0.022)	(0.020)	(0.021)
Impact of recent flood event	-0.004	0.001	0.101***	0.106***
	(0.022)	(0.023)	(0.023)	(0.023)
Belief in climate change	1.108***	1.107***	0.282***	0.279***
	(0.047)	(0.046)	(0.043)	(0.044)
Attitudes towards EU policy instruments	0.532***	0.535***	0.258***	0.263***
	(0.038)	(0.038)	(0.032)	(0.032)
Engagement in climate change action	0.178***	0.177***	0.126***	0.125***
	(0.029)	(0.029)	(0.036)	(0.036)
Trust in supranational institutions	0.246***	0.251***	0.180***	0.177***
	(0.038)	(0.038)	(0.037)	(0.037)
Trust in national institutions	0.095**	0.089*	0.250***	0.253***
	(0.037)	(0.037)	(0.034)	(0.034)
Political ideology (left-right)	-0.066*	-0.067*	0.060^{+}	0.061^{+}
	(0.028)	(0.028)	(0.032)	(0.031)
Carbon Price: 105 Euro			0.021	0.015
			(0.057)	(0.057)
Carbon Price: 130 Euro			0.112*	0.110*
			(0.055)	(0.054)
Socio-economic controls	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes
Nuts2 FE	No	Yes	No	Yes
R^2	0.250	0.252	0.070	0.071
Observations	7048	7048	6978	6978

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 and 2 show results for support under a scenario of low emission reductions goals in the PM treatment as dependent variable, columns 3 and 4 for support under a scenario of low emission reductions goals in the CP treatment as dependent variable. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects and subnational region fixed effects. For the CP treatment indicators in columns 3 and 4, the carbon price of 80 Euro is the omitted category.

Table B.13: OLS regression analyses: Individual factors of ambitious climate policies (Pooled)

	(1) PM	(2) CP	(3) Pooled	(4) Pooled
Support(baseline)	0.601***	0.166***	0.321***	0.312***
	(0.021)	(0.017)	(0.013)	(0.013)
Patience	-0.004	0.041**	0.017+	0.049***
	(0.011)	(0.014)	(0.010)	(0.014)
Risk	0.018	0.053***	0.040***	0.057***
	(0.012)	(0.013)	(0.009)	(0.014)
Positive reciprocity	-0.031**	-0.046***	-0.043***	-0.047***
	(0.010)	(0.013)	(0.008)	(0.013)
Negative reciprocity	0.030**	0.049***	0.039***	0.051***
	(0.010)	(0.012)	(0.007)	(0.013)
Trust	0.035***	0.058***	0.046***	0.054***
	(0.010)	(0.015)	(0.009)	(0.014)
Altruism	0.018+	-0.003	0.009	-0.011
	(0.010)	(0.016)	(0.008)	(0.016)
Belief in climate change	0.185***	0.214***	0.250***	0.192***
	(0.016)	(0.018)	(0.014)	(0.018)
Attitudes towards EU policy instruments	0.099***	0.136***	0.134***	0.113***
	(0.018)	(0.018)	(0.013)	(0.018)
Engagement in climate change action	0.120***	0.212***	0.169***	0.207***
	(0.009)	(0.018)	(0.011)	(0.019)
Trust in supranational institutions	0.075***	0.111***	0.098***	0.101***
	(0.015)	(0.019)	(0.013)	(0.020)
Trust in national institutions	-0.070***	0.016	-0.028*	-0.004
	(0.013)	(0.016)	(0.011)	(0.016)
Political ideology (left-right)	-0.028**	-0.059***	-0.050***	-0.064***
	(0.008)	(0.015)	(0.009)	(0.014)
Finanical impact of COVID-19	-0.003	-0.045***	-0.029***	-0.046***
	(0.008)	(0.012)	(0.007)	(0.013)
Impact of recent flood event	0.029**	0.083***	0.053***	0.078***
	(0.009)	(0.016)	(0.011)	(0.016)
Policy Mix			0.731***	0.735***
			(0.016)	(0.016)
Policy Mix x Patience				-0.063**
				(0.018)
Policy Mix x Risk				-0.032
				(0.019)
Policy Mix x Positive reciprocity				0.008
				(0.017)
Policy Mix x Negative reciprocity				-0.023
				(0.019)
Policy Mix x Trust				-0.014
				(0.016)
Policy Mix x Altruism				0.042+
				(0.023)
Policy Mix x Belief in climate change				0.123***
				(0.022)
Policy Mix x Attitudes towards EU policy instruments				0.042
				(0.027)
Policy Mix x Engagement in climate change action				-0.077***
				(0.020)
Policy Mix x Trust in supranational institutions				-0.003
				(0.025)
Policy Mix x Trust in national institutions				-0.049*
				(0.020)
Policy Mix x Political ideology (left-right)				0.028*
				(0.013)
Policy Mix x Finanical impact of COVID-19				0.035*
				(0.016)
Policy Mix x Impact of recent flood event				-0.051**
				(0.014)
Constant	1.287***	2.067***	1.599***	1.630***
	(0.085)	(0.088)	(0.063)	(0.063)
Socio-economic controls	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes
Nuts2 FE	Yes	Yes	Yes	Yes
Baseline	Yes	Yes	Yes	Yes
R^2	0.626	0.336	0.512	0.516
Observations	7007	6919	13926	13926

Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects, sub-national region fixed effects and the support for the low goal scenarios. For the CP treatment indicators in columns 3 and 4, the carbon price of 80 Euro is the omitted category.

Table B.14: OLS vs. multilevel regression analyses: Individual factors of ambitious climate policies

	(1) PM (OLS)	(2) PM (Mix)	(3) CP (OLS)	(4) CP (Mix)
main				
Patience	0.003	0.003	0.057***	0.057***
	(0.010)	(0.009)	(0.012)	(0.013)
Risk	-0.002	-0.002	0.049***	0.049***
	(0.012)	(0.010)	(0.012)	(0.014)
Positive reciprocity	-0.030**	-0.030**	-0.045**	-0.045***
	(0.010)	(0.010)	(0.013)	(0.014)
Negative reciprocity	0.032**	0.032***	0.047***	0.047***
	(0.010)	(0.009)	(0.012)	(0.014)
Trust	0.037***	0.037***	0.059***	0.059***
	(0.010)	(0.009)	(0.015)	(0.014)
Altruism	0.022*	0.022*	0.001	0.001
	(0.010)	(0.010)	(0.015)	(0.015)
Finanical impact of COVID-19	-0.003	-0.003	-0.046***	-0.046***
	(0.008)	(0.009)	(0.013)	(0.013)
Impact of recent flood event	0.028**	0.028**	0.085***	0.085***
	(0.009)	(0.010)	(0.018)	(0.014)
Belief in climate change	0.185***	0.185***	0.223***	0.223***
	(0.017)	(0.016)	(0.019)	(0.021)
Attitudes towards EU policy instruments	0.100***	0.100***	0.140***	0.140***
	(0.018)	(0.014)	(0.018)	(0.020)
Engagement in climate change action	0.122***	0.122***	0.208***	0.208***
	(0.009)	(0.011)	(0.018)	(0.016)
Trust in supranational institutions	0.075***	0.075***	0.108***	0.108***
	(0.016)	(0.014)	(0.020)	(0.020)
Trust in national institutions	-0.070***	-0.070***	0.012	0.012
	(0.013)	(0.013)	(0.015)	(0.019)
Political ideology (left-right)	-0.026**	-0.026**	-0.059***	-0.059***
	(0.009)	(0.009)	(0.015)	(0.014)
Carbon Price: 105 Euro			-0.131***	-0.131***
			(0.022)	(0.030)
Carbon Price: 130 Euro			-0.199***	-0.199***
			(0.029)	(0.030)
Constant	1.260***	1.260***	2.078***	2.078***
	(0.081)	(0.071)	(0.083)	(0.093)
lns1_1_1				
Constant		-23.999***		-23.321
		(4.215)		(532.812)
lnsig_e				
Constant		-0.333***		0.027**
		(0.008)		(0.009)
Socio-economic controls	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes
Nuts2 FE	Yes	Yes	Yes	Yes
Baseline	Yes	Yes	Yes	Yes
R^2	0.628		0.346	
Observations	7007	7007	6919	6919

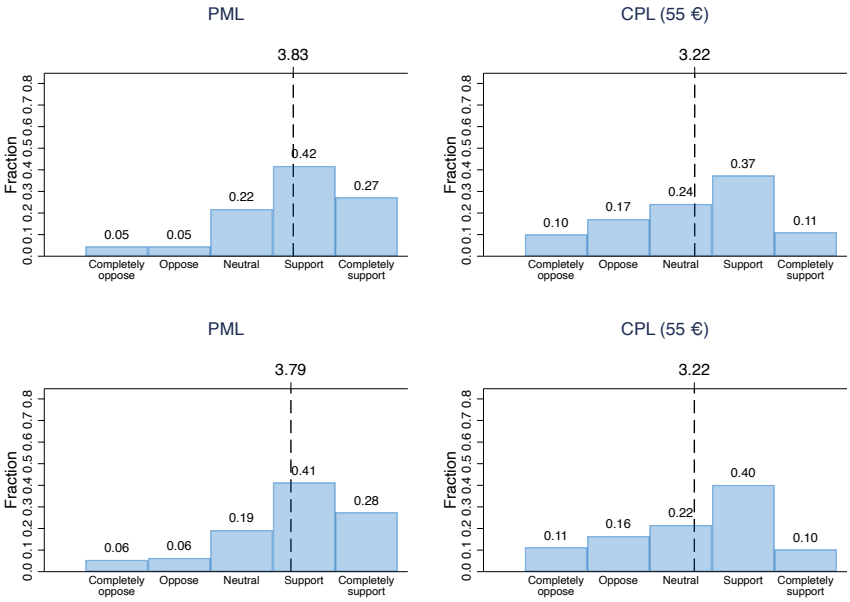
Notes. * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects, subnational region fixed effects and the support for the low goal scenarios. For the CP treatment indicators in columns 3 and 4, the carbon price of 80 Euro is the omitted category.

Table B.15: Correlation table for economic preferences and other individual factors

Patience	
Belief in climate change	0.227
Support of EU policy instruments	0.230
Engagement in climate change action	0.158
Trust in national institutions	0.163
Trust in supranational institutions	0.176
Political ideology (left-right)	-0.051
Finanical impact of COVID-19	-0.078
Impact of recent flood event	-0.010
Risk	
Belief in climate change	0.252
Support of EU policy instruments	0.262
Engagement in climate change action	0.280
Trust in national institutions	0.183
Trust in supranational institutions	0.201
Political ideology (left-right)	-0.049
Finanical impact of COVID-19	0.005
Impact of recent flood event	0.065
Positive reciprocity	
Belief in climate change	0.230
Support of EU policy instruments	0.225
Engagement in climate change action	0.076
Trust in national institutions	0.088
Trust in supranational institutions	0.085
Political ideology (left-right)	-0.100
Finanical impact of COVID-19	-0.075
Impact of recent flood event	-0.122
Negative reciprocity	
Belief in climate change	-0.107
Support of EU policy instruments	-0.062
Engagement in climate change action	0.176
Trust in national institutions	-0.032
Trust in supranational institutions	-0.017
Political ideology (left-right)	0.148
Finanical impact of COVID-19	0.115
Impact of recent flood event	0.176
Altruism	
Belief in climate change	0.334
Support of EU policy instruments	0.303
Engagement in climate change action	0.360
Trust in national institutions	0.206
Trust in supranational institutions	0.226
Political ideology (left-right)	-0.156
Finanical impact of COVID-19	-0.023
Impact of recent flood event	0.041
Trust	
Belief in climate change	0.184
Support of EU policy instruments	0.189
Engagement in climate change action	0.242
Trust in national institutions	0.320
Trust in supranational institutions	0.301
Political ideology (left-right)	-0.090
Finanical impact of COVID-19	-0.032
Impact of recent flood event	0.073

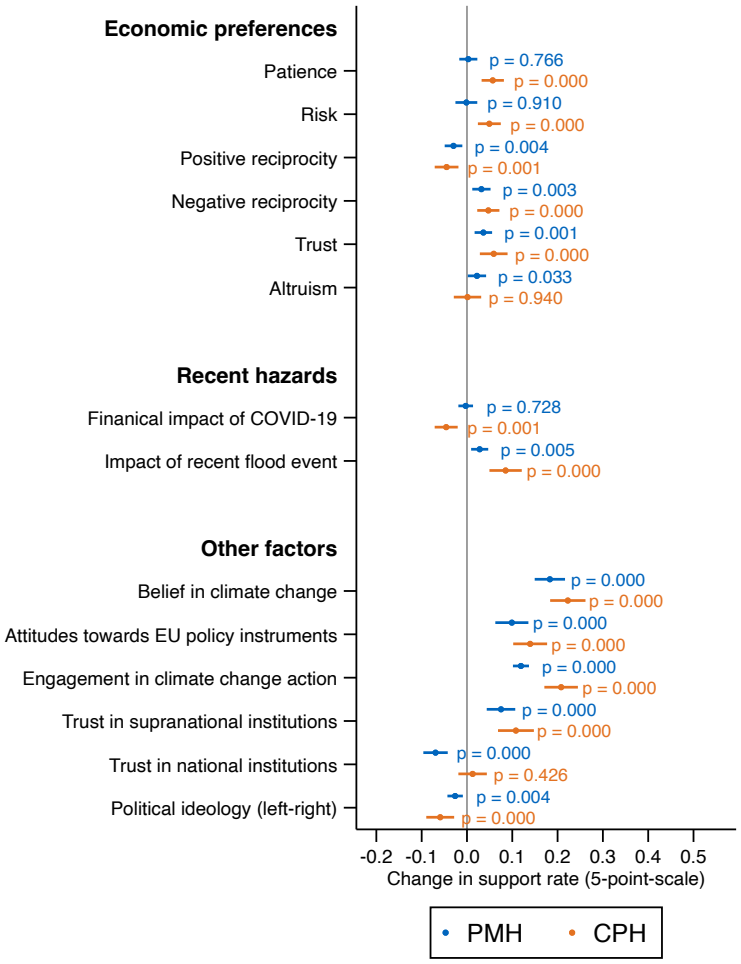
B.4 FIGURES

Figure B.1: Treatment effects



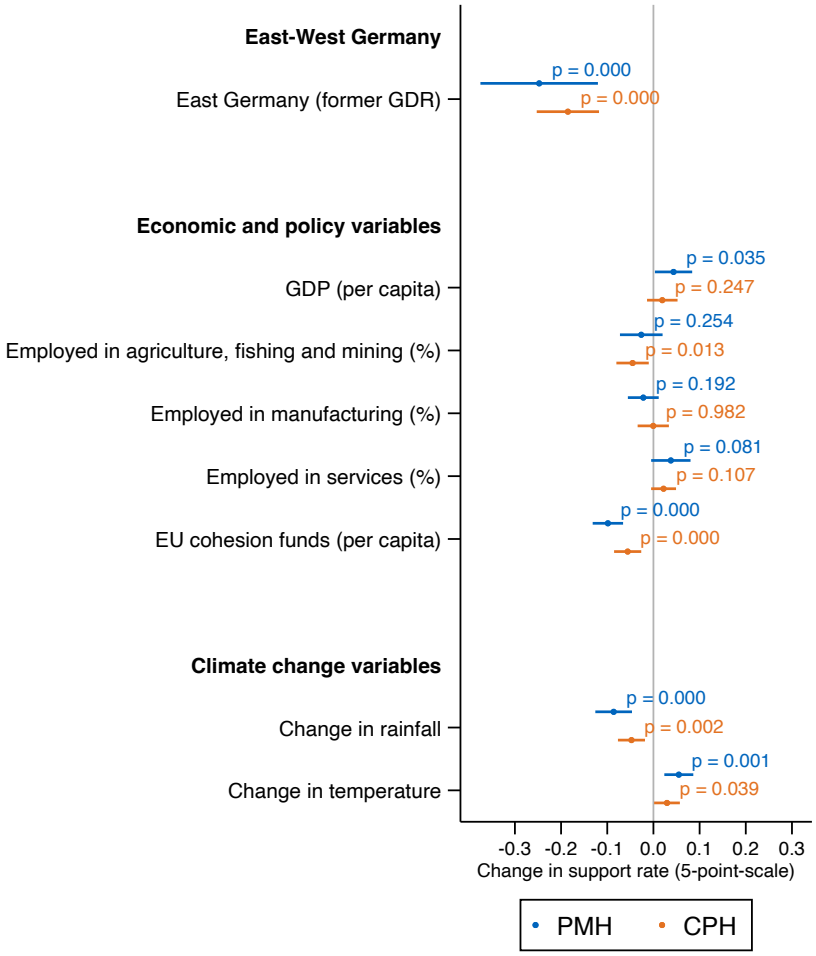
Notes. The figure shows the distribution of public support in the PML and CPL treatment for the control group, i.e. the group that was informed about the low emission reduction goals scenario two times in a row without any new information. The upper two graphs show support for the first time this scenario was shown and the lower two graphs for the second time. Support is measured on a 5-point scale (completely oppose to completely support with neutral option). Each panel indicates the average support as vertical lines (dashed). Observations: upper graphs: PML = 110 ; CPL = 99; lower graphs: PML = 109 ; CPL = 97.

Figure B.2: Association between individual factors and support for ambitious climate policies: Standardization with 2 SD



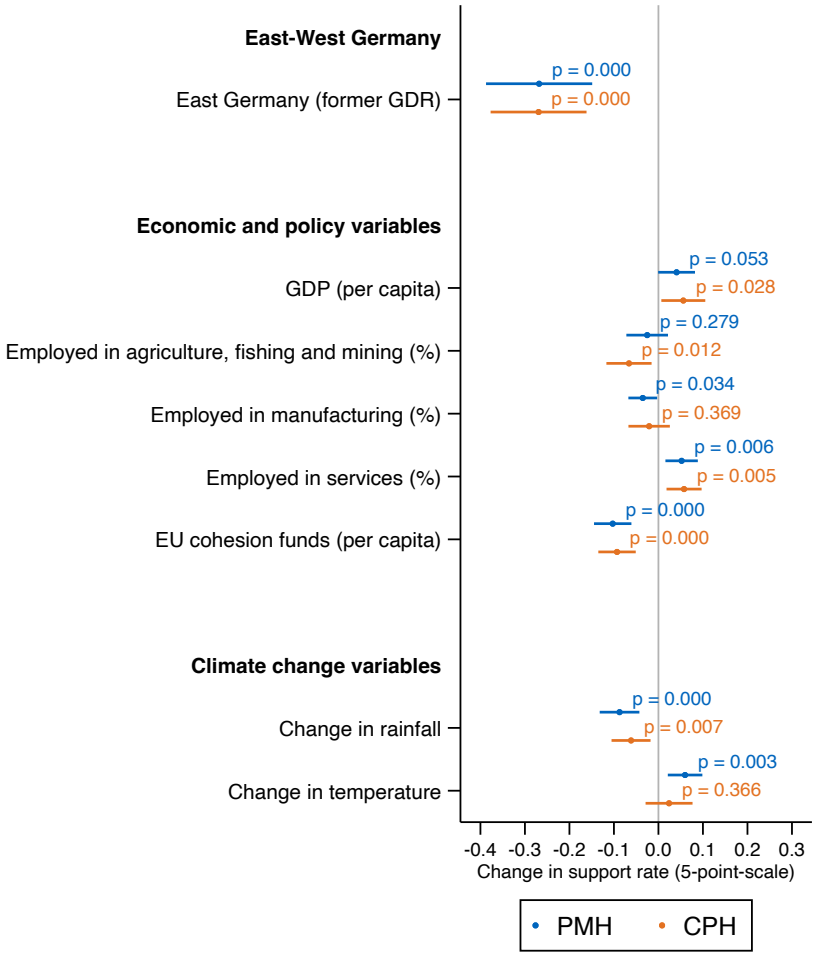
Notes. The figure plots coefficients based on an OLS regression.The specification is based on equaiton (2). The dependent variable is individual support for climate policies (5 point scale). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Error bars indicate 95% confidence intervals obtained from standard errors that are clustered at the sub-national level. Stars indicate statistically significant differences between coefficients of PMH and CPH (*** denotes p<0.001, ** denotes p<0.01, * denotes p<0.05). Observations: PMH = 7,007; CPH = 6,919.

Figure B.3: Regional correlates of public support for low climate policies



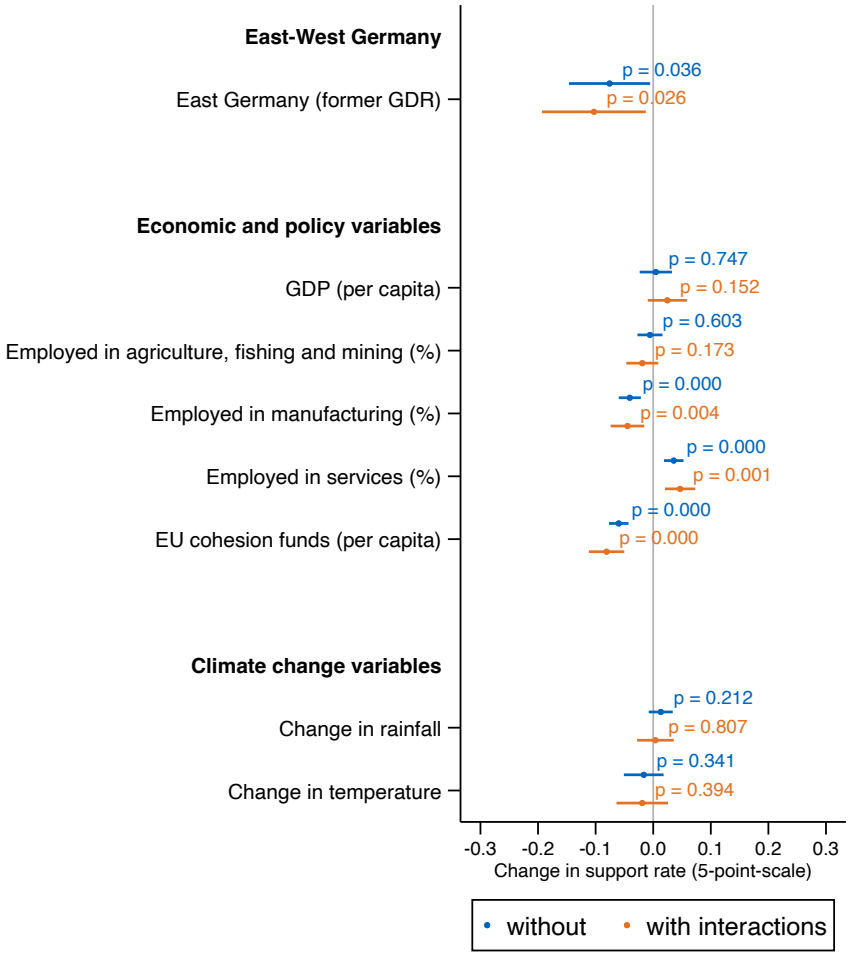
Notes. The figure plots coefficients based on an OLS regression. The dependent variable is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). Each coefficient has been estimated separately using standardized explanatory variables (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary). Specifications for the CPH treatment control for different levels of carbon prices. Error bars indicate 95% confidence intervals obtained from standard errors clustered at the regional level (38 subnational regions). The percentage of total employment in agriculture, fishing and mining is missing in five regions. Observations in each regression: PML = 7,205 (6,489 where 5 regions are missing), CPL = 7,092 (6,389 where 5 regions are missing).

Figure B.4: Regional correlates of public support for ambitious climate policies: excluded pre-beliefs



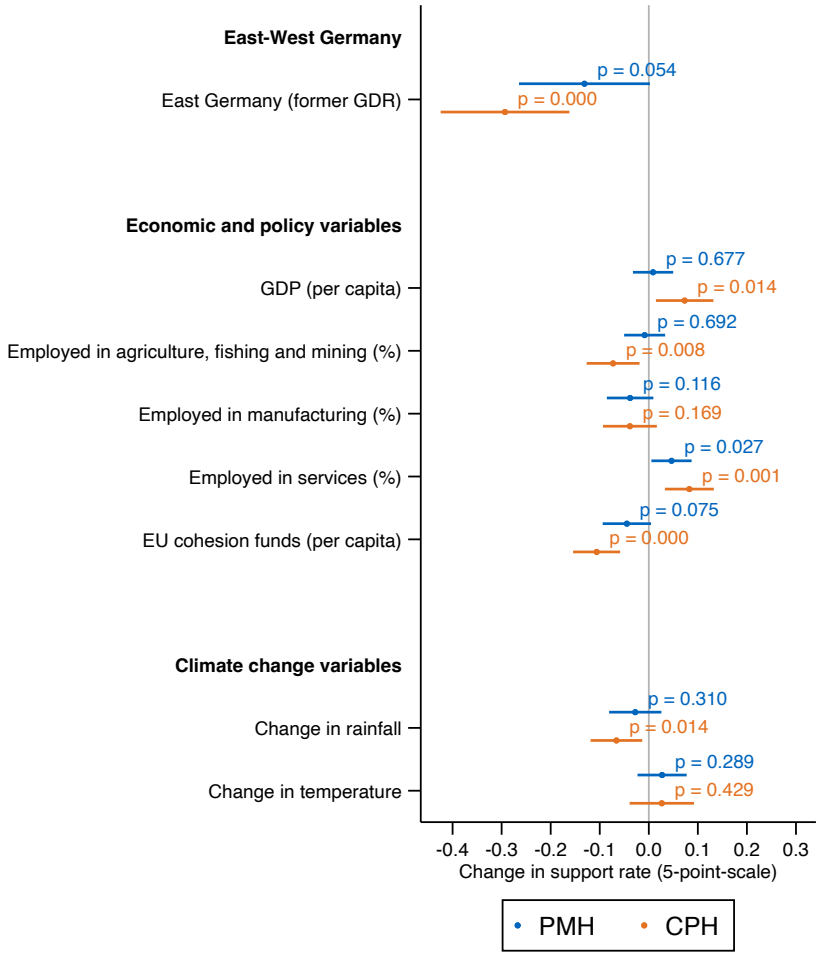
Notes. The figure plots coefficients based on an OLS regression. The dependent variable is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). Each coefficient has been estimated separately using standardized explanatory variables (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary). Specifications for the CPH treatment control for different levels of carbon prices. Error bars indicate 95% confidence intervals obtained from standard errors clustered at the regional level (38 subnational regions). The percentage of total employment in agriculture, fishing and mining is missing in five regions. Observations in each regression: PMH = 7,205 (6,489 where 5 regions are missing), CPH = 7,092 (6,389 where 5 regions are missing).

Figure B.5: Regional correlates of public support for ambitious climate policies: pooled OLS



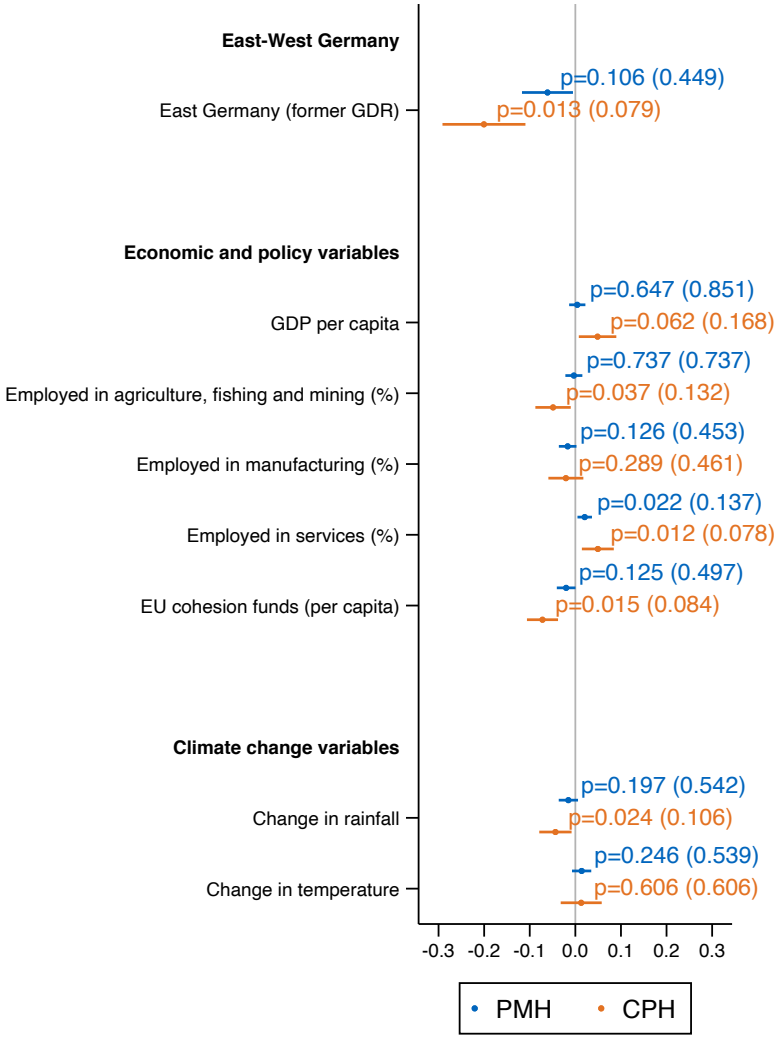
Notes. The figure plots coefficients based on an OLS regression. The dependent variable is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). Each coefficient has been estimated separately using standardized explanatory variables (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary). Specifications for the CPH treatment control for different levels of carbon prices. Error bars indicate 95% confidence intervals obtained from standard errors clustered at the regional level (38 subnational regions). The percentage of total employment in agriculture, fishing and mining is missing in five regions. Observations in each regression: 14,297.

Figure B.6: Regional correlates of public support for ambitious climate policies: Ologit regression



Notes. The figure plots coefficients based on an Ologit regression. The dependent variable is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). Each coefficient has been estimated separately using standardized explanatory variables (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary). Specifications for the CPH treatment control for different levels of carbon prices. Error bars indicate 95% confidence intervals obtained from standard errors clustered at the regional level (38 subnational regions). The percentage of total employment in agriculture, fishing and mining is missing in five regions. Observations in each regression: PMH = 7,256 (6,533 where 5 regions are missing), CPH = 7,192 (6,479 where 5 regions are missing).

Figure B.7: Regional correlates of public support for ambitious climate policies: Multiple hypothesis testing



Notes. The figure plots coefficients based on an OLS regression with p-values adjusted for multiple hypothesis testing. The figure displays conventional p-values and adjusted p-values (in square brackets). The dependent variable is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). Each coefficient has been estimated separately using standardized explanatory variables (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Specifications include the following control variables: gender, age (median), income (median), education level (tertiary). Specifications for the CPH treatment control for different levels of carbon prices. Error bars indicate 95% confidence intervals obtained from standard errors clustered at the regional level (38 subnational regions). The percentage of total employment in agriculture, fishing and mining is missing in five regions. Observations in each regression: PMH = 7,256 (6,533 where 5 regions are missing), CPH = 7,192 (6,479 where 5 regions are missing).

C

Regional variation in social norm nudges

C.1 Materials and Methods

C.1.1 Experimental instructions for survey 1

The following paragraphs outline the experimental instructions as shown to participants. Instructions have been translated from German. Screenshots of the original instructions are shown in Section SIC.1.2.

Basic information on climate change and EU climate policies (all respondents)

Information about climate change

Since the beginning of industrialization people have been emitting large amounts of greenhouse gases, for example by burning coal, oil, and gas. An example for greenhouse gases is carbon dioxide (CO_2). These greenhouse

gases cause a gradual increase of the average global temperature. Since 1900, the earth's temperature has risen around 1 °C.

The average European household produces around 15.5 tons of CO_2 per year. This indicator is known as carbon footprint or ecological footprint.

Further developments depend in particular on the amount of greenhouse gases being emitted in the future. If the current trend continues, the average global temperature is likely to increase by up to 3 °C by the end of this century.

INFORMATION PROVISION ON EU POLICY INSTRUMENTS (ALL RESPONDENTS)

Information about European Union politics

To curb the consequences of climate change the European Union (EU) plans to reduce the emission of greenhouse gases. Despite the current COVID-19 pandemic, the EU wants to stick to their climate targets.

To reduce greenhouse gases, the EU relies on the following measures:

Expansion of renewable energies

Sustainable climate policy should further expand bioenergy, geothermal energy, hydropower, ocean energy, solar energy, and wind energy.

Increase of energy efficiency

Energy efficiency should be increased in the following areas: i) public and private transport, ii) energy efficient buildings and in iii) industrial processes.

Expansion of emissions trading

Emissions trading requires the presentation of a valid emission allowance for each ton of CO_2 emitted by a group of greenhouse gas producers. The

EU determines how many tons of CO_2 may be emitted by this group in total. These emission certificates can be bought via emissions trading. If CO_2 is emitted without a certificate, penalty payments are required. Emitting little CO_2 leads correspondingly to spending little on certificates. **A reduction in the amount of emission certificates usually results in a higher price per ton of CO_2 emitted and thus increases the costs for greenhouse gas producers.**

The EU Emissions Trading System:

- includes 30 European countries and covers around 40% of the greenhouse gas emissions in the EU.
- limits emissions from around 11.000 plants in the energy sector and in the manufacturing industry as well as emissions from air carriers.
- **should also consider emissions from housing and transport in the future and can therefore affect the prices of fossil fuels (e.g. heating oil) and fuels (e.g. petrol and diesel).**

Current trend of greenhouse gases
In this figure you can see the development of greenhouse gas emissions (in million tons of CO_2) in the EU from 1990 to 2020. The figure shows that by 2020 already 20% less greenhouse gases have been emitted than in 1990.

Now, the EU plans to further reduce greenhouse gas emissions until 2030. In the figure, this year is marked with a red line.

Figure: Development of greenhouse gas emissions

INTRODUCTION OF FIRST HYPOTHETICAL SCENARIO (ALL RESPONDENTS)

Now we ask about your opinion on EU climate policy.
As a reminder:

- The expansion of renewable energies, the increase in energy efficiency and the expansion of emissions trading are key measures of EU climate policy.
- A reduction in the amount of emission certificates through EU policies usually results in a **higher price per ton of CO_2 and in higher costs for greenhouse gas producers.**
- The average European household produces around 15.5 tons of CO_2 per year.

Please consider the following hypothetical scenario:
The EU plans to **reduce greenhouse gases by up to 40%** until 2030 compared to 1990 (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions by 40% until 2030

TREATMENT GROUP: INTRODUCTION OF SECOND HYPOTHETICAL SCENARIO

Now we ask about your opinion on a changed EU climate policy.
As a reminder:

- The expansion of renewable energies, the increase in energy efficiency and the expansion of emissions trading are key measures of EU climate policy.
- A reduction in the amount of emission certificates through EU policies usually results in a **higher price per ton of CO_2 and in higher costs for greenhouse gas producers.**

- The average European household produces around 15.5 tons of CO_2 per year.

Please consider the following hypothetical scenario:
With the European 'Green Deal', the EU wants to create a more ambitious climate target. Therefore, the EU plans to **reduce greenhouse gas emissions** in 2030 **by up to 55%** instead of 40% compared to 1990 (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions by 40% vs 55% until 2030

CONTROL GROUP: INTRODUCTION OF SECOND HYPOTHETICAL SCENARIO

Now we ask about your opinion on EU climate policy again.
You get to see the same information again. This is for verification of the data quality and helps to better understand your answers. It is not an error.

As a reminder:

- The expansion of renewable energies, the increase in energy efficiency and the expansion of emissions trading are key measures of EU climate policy.
- A reduction in the amount of emission certificates through EU policies usually results in a **higher price per ton of CO_2 and in higher costs for greenhouse gas producers.**
- The average European household produces around 15.5 tons of CO_2 per year.

Please consider the following hypothetical scenario:
The EU plans to **reduce greenhouse gases by up to 40%** until 2030 compared to 1990 (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions by 40% until 2030

C.1.2 Survey Screenshots in German language

Screen 1

Nun folgen einige einführende Informationen zum Klimawandel und der Klimapolitik der Europäischen Union.

Bevor Sie im Folgenden zu Ihrer Meinung befragt werden, bitten wir Sie, die folgenden Informationen über den Klimawandel und die Klimapolitik der Europäischen Union aufmerksam durchzulesen.

→

Screen 2

Informationen zum Klimawandel

Seit dem Beginn der Industrialisierung stoßen Menschen beispielsweise durch das Verbrennen von Kohle, Öl und Gas große Mengen von Treibhausgasen aus. Ein Beispiel für Treibhausgase ist Kohlendioxid (CO_2). Diese Treibhausgase bewirken, dass die durchschnittliche Erdtemperatur allmählich ansteigt. Seit 1900 ist die Erdtemperatur im Durchschnitt um etwa 1°C gestiegen.

Der durchschnittliche Haushalt in Europa produziert ca. 15,5 Tonnen CO_2 pro Jahr. Dieser Indikator wird auch als CO_2-Fußabdruck oder ökologischer Fußabdruck bezeichnet.

Die weitere Entwicklung hängt insbesondere davon ab, ob in Zukunft wenig oder viel Treibhausgase ausgestoßen werden. Wenn der derzeitige Trend anhält, steigt die durchschnittliche Erdtemperatur bis Ende dieses Jahrhunderts wahrscheinlich um bis zu 3°C an.

→

Screen 3

Informationen zur Politik der Europäischen Union

Um die Folgen des Klimawandels einzudämmen, plant die Europäische Union (EU) den Ausstoß von Treibhausgasen zu senken. Trotz der aktuellen Corona-Pandemie will die EU an ihren Klimazielen festhalten.

Zur Reduktion von Treibhausgasen setzt die EU auf folgende Maßnahmen:

Ausbau erneuerbarer Energien

Eine nachhaltige Energiepolitik soll Bioenergie, Geothermie, Wasserkraft, Meeresenergie, Sonnenenergie und Windenergie weiter ausbauen.

Steigerung der Energieeffizienz

Die Energieeffizienz soll in den folgenden Bereichen gesteigert werden: i) öffentlicher und privater Verkehr, ii) energieeffiziente Gebäude und bei iii) industriellen Verfahren.

Ausbau des Emissionshandels

Beim Emissionshandel muss eine Gruppe von Treibhausgasproduzenten für jede ausgestoßene Tonne an CO_2 eine gültige Emissionsberechtigung vorlegen. Die EU legt fest, wie viele Tonnen CO_2 von dieser Gruppe insgesamt ausgestoßen werden dürfen. Diese Emissionsberechtigungen können im Emissionshandel gekauft werden. Wird ohne Berechtigung CO_2 emittiert, sind Strafzahlungen fällig. Wer wenig CO_2 emittiert, muss entsprechend wenig für Berechtigungen ausgeben. **Eine Verringerung der Menge an Emissionsberechtigungen führt in der Regel zu einem höheren Preis pro ausgestoßener Tonne CO_2 und erhöht damit die Kosten für Treibhausgasproduzenten.**

Das EU-Emissionshandelssystem:

- umfasst 30 europäische Länder und deckt ca. 40% der Treibhausgasemissionen in der EU ab.
- begrenzt die Emissionen von rund 11.000 Anlagen im Stromsektor und in der verarbeitenden Industrie sowie die Emissionen von Luftfahrtunternehmen.
- **soll in Zukunft auch Emissionen aus Wohnen und Verkehr berücksichtigen und kann somit die Preise von fossilen Brennstoffen (z.B. Heizöl) und Kraftstoffen (z.B. Benzin und Diesel) beeinflussen.**

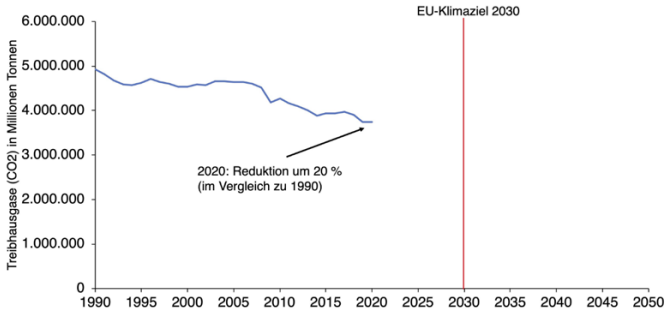
→

Screen 4

Aktueller Trend von Treibhausgasen

In dieser Abbildung sehen Sie die Entwicklung des Ausstoßes von Treibhausgasen (in Millionen Tonnen CO_2) in der EU von 1990 bis 2020. Aus der Abbildung wir ersichtlich, dass im Jahr 2020 bereits etwa 20% weniger Treibhausgase ausgestoßen wurden als im Jahr 1990.

Die EU plant, nun den Ausstoß von Treibhausgasen bis in das Jahr 2030 weiter zu verringern. In der Abbildung ist dieses Jahr mit einer roten Linie gekennzeichnet.



→

Screen 5

Nun fragen wir Sie nach Ihrer Meinung zur EU Klimapolitik.

Zur Erinnerung:

- Der Ausbau der erneuerbaren Energien, die Steigerung der Energieeffizienz und der Ausbau des Emissionshandels sind zentrale Maßnahmen der EU Klimapolitik.
- Eine Verringerung von Emissionsberechtigungen durch die EU-Politik führt in der Regel zu einem **höheren Preis pro Tonne CO_2 und zu höheren Kosten für Treibhausgasproduzenten.**
- Der durchschnittliche Haushalt in Europa produziert ca. 15,5 Tonnen CO_2 pro Jahr.

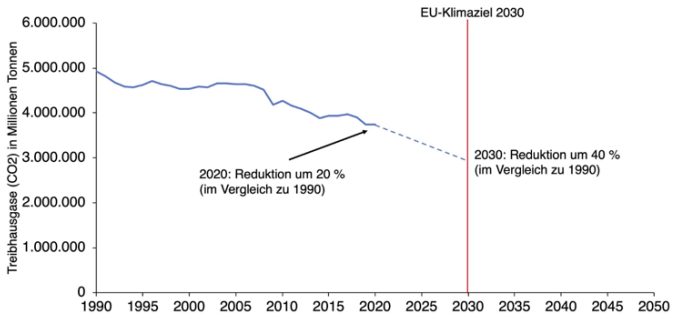
→

Screen 6

Bitte nehmen Sie folgendes hypothetisches Szenario an:

Die EU plant im Jahr 2030 **die Treibhausgase** im Vergleich zum Jahr 1990 **um bis zu 40% zu senken** (siehe Abbildung). Nehmen Sie an, dass neben der Industrie auch die Haushalte durch die Maßnahmen beeinflusst werden.

Andere Länder außerhalb der EU (z.B. China, USA) verfolgen ebenfalls Klimaziele zur Reduktion von Emissionen.



→

Screen 7

Nun fragen wir Sie nach Ihrer Meinung zu einer veränderten EU Klimapolitik.

Zur Erinnerung:

- Der Ausbau der erneuerbaren Energien, die Steigerung der Energieeffizienz und der Ausbau des Emissionshandels sind zentrale Maßnahmen der EU Klimapolitik.
- Eine Verringerung von Emissionsberechtigungen durch die EU-Politik führt in der Regel zu einem **höheren Preis pro Tonne CO_2 und zu höheren Kosten für Treibhausgasproduzenten.**
- Der durchschnittliche Haushalt in Europa produziert ca. 15,5 Tonnen CO_2 pro Jahr.

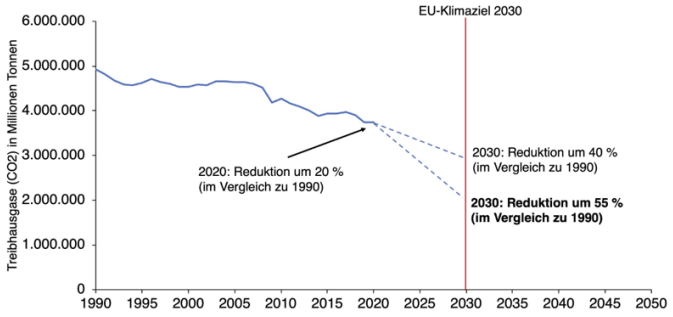
→

Screen 8

Bitte nehmen Sie folgendes hypothetisches Szenario an:

Mit dem europäischen „Green Deal“ will die EU das Klimaziel ambitionierter gestalten. Das heißt, die EU plant im Jahr 2030 **die Treibhausgase** im Vergleich zum Jahr 1990, anstatt um 40%, **um bis zu 55% zu senken** (siehe Abbildung). Nehmen Sie an, dass neben der Industrie auch die Haushalte durch die Maßnahmen beeinflusst werden.

Andere Länder außerhalb der EU (z.B. China, USA) verfolgen ebenfalls Klimaziele zur Reduktion von Emissionen.



→

C.1.3 EXPERIMENTAL INSTRUCTIONS FOR SURVEY 2

The following paragraphs outline the experimental instructions as shown to participants. Instructions have been translated from German. Screenshots of the original instructions are shown in Section SIC.1.4.

BASIC INFORMATION ON CLIMATE CHANGE AND EU CLIMATE POLICIES (ALL RESPONDENTS)

Information about climate change
Since the beginning of industrialization people have been emitting large amounts of greenhouse gases, for example by burning coal, oil, and gas. An example for greenhouse gases is carbon dioxide (CO_2). These greenhouse gases cause a gradual increase of the average global temperature. Since 1900, the earth's temperature has risen around 1 °C.

The average European household produces around 15.5 tons of CO_2 per year. This indicator is known as carbon footprint or ecological footprint.

Further developments depend in particular on the amount of greenhouse gases being emitted in the future. If the current trend continues, the average global temperature is likely to increase by up to 3 °C by the end of this century.

INFORMATION PROVISION ON EU POLICY INSTRUMENTS (ALL RESPONDENTS)

Information about European Union politics
To curb the consequences of climate change the European Union (EU) plans to reduce the emission of greenhouse gases. Despite the current COVID-19 pandemic, the EU wants to stick to their climate targets.

To reduce greenhouse gases, the EU relies on the following measures:

Expansion of renewable energies

Sustainable climate policy should further expand bioenergy, geothermal energy, hydropower, ocean energy, solar energy, and wind energy.

Increase of energy efficiency

Energy efficiency should be increased in the following areas: i) public and private transport, ii) energy efficient buildings and in iii) industrial processes.

Expansion of emissions trading

Emissions trading requires the presentation of a valid emission allowance for each ton of CO_2 emitted by a group of greenhouse gas producers. The EU determines how many tons of CO_2 may be emitted by this group in total. These emission certificates can be bought via emissions trading. If CO_2 is emitted without a certificate, penalty payments are required. Emitting little CO_2 leads correspondingly to spending little on certificates. **A reduction in the amount of emission certificates usually results in a higher price per ton of CO_2 emitted and thus increases the costs for greenhouse gas producers.**

The EU Emissions Trading System:

- includes 30 European countries and covers around 40% of the greenhouse gas emissions in the EU.
- limits emissions from around 11.000 plants in the energy sector and in the manufacturing industry as well as emissions from air carriers.
- **should also consider emissions from housing and transport in the future and can therefore affect the prices of fossil fuels (e.g. heating oil) and fuels (e.g. petrol and diesel).**

INTRODUCTION OF HYPOTHETICAL SCENARIO (ALL RESPONDENTS)

Please consider the following hypothetical scenario:
In this figure you can see the development of greenhouse gas emissions (in million tons of CO_2) in the EU from 1990 to 2020. The figure shows that by 2020 already 20% less greenhouse gases have been emitted than in 1990.

Until now, the EU planed to reduce greenhouse gases by up to 40% until 2030 compared to 1990. In the figure, this year is marked with a red line.

With the European 'Green Deal', the EU wants to create a more ambitious climate target. Therefore, the EU plans to **reduce greenhouse gas emissions** in 2030 **by up to 55%** instead of 40% compared to 1990 (see figure). Assume that besides the industry, households are also influenced by the measures.

Other countries outside the EU (e.g. China, USA) are pursuing climate targets to reduce emissions as well.

Figure: Reduction of greenhouse gas emissions by 40% vs 55% until 2030

NATIONAL/REGIONAL TREATMENT GROUP: INTRODUCTION OF [NATIONAL/REGIONAL] NORM

What does the population in [Germany/region] think about that?
We recently asked [number of respondents in Germany/region] people in [Germany/region] how they evaluate the measures of the EU under this scenario (55% emission reduction). The participants come from all parts of the population and their answers are representative of the views and stances of the population in [Germany/region]. On the next page you find out how they responded. Please read the information carefully.

Afterwards you are asked about your own opinion.

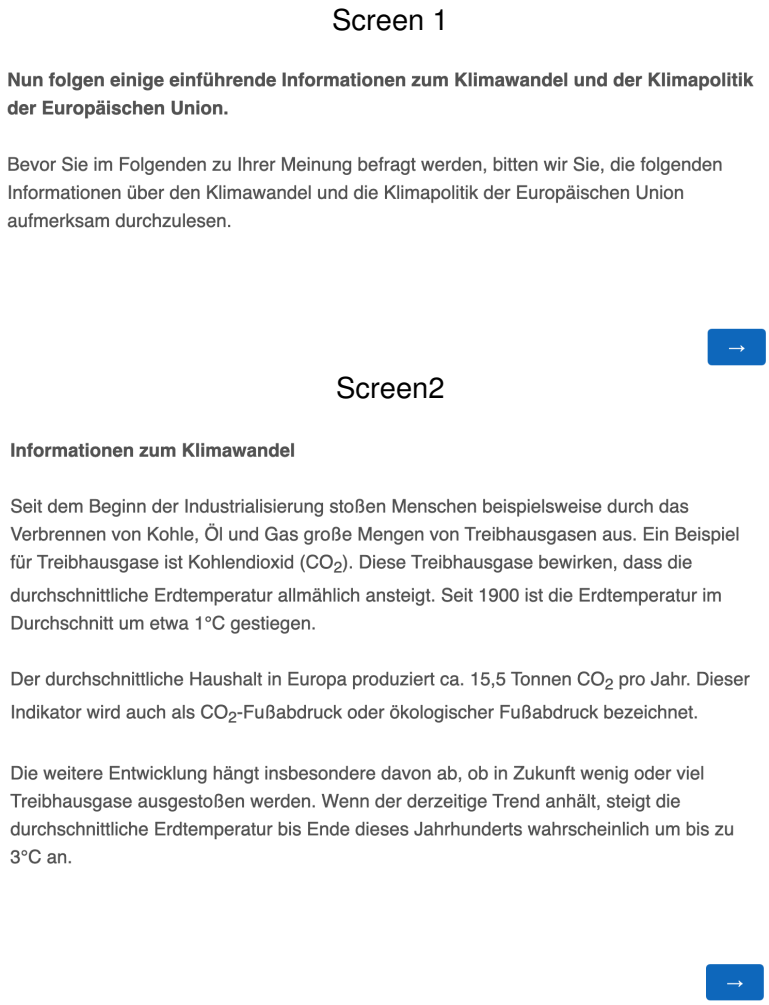
We asked [number of respondents in Germany/region] people in [Ger-

many/region] how they evaluate the measures of the EU under this scenario (55% emission reduction).
Possible answers included: Completely oppose, rather oppose, neither oppose nor support, rather support, completely support.

Here is the result:

Figure: Percentage of people in [Germany/region] rather or completely supporting these measures

C.1.4 Survey Screenshots in German language



Screen 3

Informationen zur Politik der Europäischen Union

Um die Folgen des Klimawandels einzudämmen, plant die Europäische Union (EU) den Ausstoß von Treibhausgasen zu senken. Trotz der aktuellen Corona-Pandemie will die EU an ihren Klimazielen festhalten.

Zur Reduktion von Treibhausgasen setzt die EU auf folgende Maßnahmen:

Ausbau erneuerbarer Energien

Eine nachhaltige Energiepolitik soll Bioenergie, Geothermie, Wasserkraft, Meeresenergie, Sonnenenergie und Windenergie weiter ausbauen.

Steigerung der Energieeffizienz

Die Energieeffizienz soll in den folgenden Bereichen gesteigert werden: i) öffentlicher und privater Verkehr, ii) energieeffiziente Gebäude und bei iii) industriellen Verfahren.

Ausbau des Emissionshandels

Beim Emissionshandel muss eine Gruppe von Treibhausgasproduzenten für jede ausgestoßene Tonne an CO_2 eine gültige Emissionsberechtigung vorlegen. Die EU legt fest, wie viele Tonnen CO_2 von dieser Gruppe insgesamt ausgestoßen werden dürfen. Diese Emissionsberechtigungen können im Emissionshandel gekauft werden. Wird ohne Berechtigung CO_2 emittiert, sind Strafzahlungen fällig. Wer wenig CO_2 emittiert, muss entsprechend wenig für Berechtigungen ausgeben. **Eine Verringerung der Menge an Emissionsberechtigungen führt in der Regel zu einem höheren Preis pro ausgestoßener Tonne CO_2 und erhöht damit die Kosten für Treibhausgasproduzenten.**

Das EU-Emissionshandelssystem:

- umfasst 30 europäische Länder und deckt ca. 40% der Treibhausgasemissionen in der EU ab.
- begrenzt die Emissionen von rund 11.000 Anlagen im Stromsektor und in der verarbeitenden Industrie sowie die Emissionen von Luftfahrtunternehmen.
- **soll in Zukunft auch Emissionen aus Wohnen und Verkehr berücksichtigen und kann somit die Preise von fossilen Brennstoffen (z.B. Heizöl) und Kraftstoffen (z.B. Benzin und Diesel) beeinflussen.**

→

Screen 4

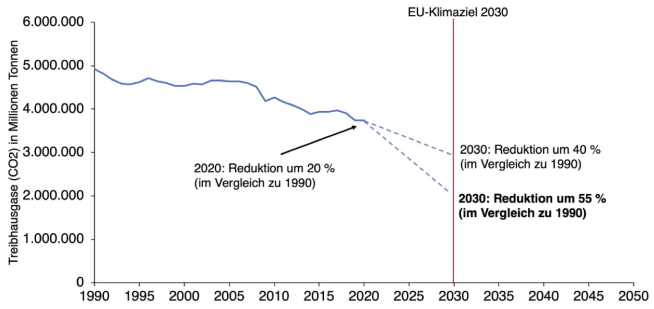
Bitte nehmen Sie folgendes hypothetisches Szenario an:

In dieser Abbildung sehen Sie die Entwicklung des Ausstoßes von Treibhausgasen (in Millionen Tonnen CO_2) in der EU von 1990 bis 2020. Aus der Abbildung wir ersichtlich, dass im Jahr 2020 bereits etwa 20% weniger Treibhausgase ausgestoßen wurden als im Jahr 1990.

Die EU plante bisher, im Jahr 2030 die Treibhausgase im Vergleich zum Jahr 1990 um bis zu 40% zu senken. In der Abbildung ist dieses Jahr mit einer roten Linie gekennzeichnet.

Mit dem europäischen „Green Deal“ will die EU das Klimaziel nun ambitionierter gestalten. Das heißt, die EU plant im Jahr 2030 **die Treibhausgase** im Vergleich zum Jahr 1990, anstatt um 40%, **um bis zu 55% zu senken** (siehe Abbildung). Nehmen Sie an, dass neben der Industrie auch die Haushalte durch die Maßnahmen beeinflusst werden.

Andere Länder außerhalb der EU (z.B. China, USA) verfolgen ebenfalls Klimaziele zur Reduktion von Emissionen.



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Screen 5

Wie sieht das die Bevölkerung in Deutschland?

Wir haben kürzlich 7401 Personen in Deutschland gefragt, wie Sie die Maßnahmen der EU unter diesem Szenario (55% Reduktion von Treibhausgasen) einschätzen. Die Teilnehmenden stammen aus allen Teilen der Bevölkerung und Ihre Antworten repräsentieren die Ansichten und Einstellungen der Bevölkerung in Deutschland. Auf der nächsten Seite werden Sie erfahren, wie sie geantwortet haben. Bitte lesen Sie die Informationen aufmerksam.

Anschließend werden Sie selbst zu Ihrer Meinung befragt.

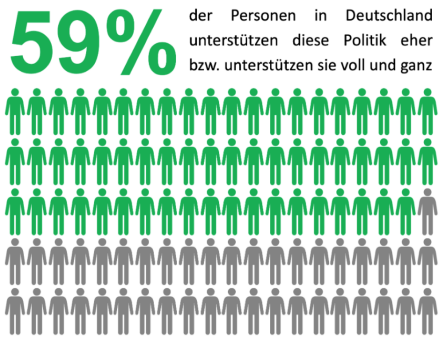
→

Screen 6

Wir haben 7401 Personen in Deutschland gefragt, wie Sie die Maßnahmen der EU unter diesem Szenario (55% Reduktion von Treibhausgasen) einschätzen.

Die Antwortmöglichkeiten waren: voll und ganz ablehnen, eher ablehnen, weder ablehnen noch unterstützen, eher unterstützen und voll und ganz unterstützen.

Hier ist das Ergebnis:



Bitte teilen Sie uns mit, ob Sie die Maßnahmen der EU unter diesem Szenario (55% Reduktion von Treibhausgasen)...

Voll und ganz ablehnen	Eher ablehnen	Weder ablehnen noch unterstützen	Eher unterstützen	Voll und ganz unterstützen	Keine Angabe

→

C.1.5 Wording of survey items and construction of summary indices

Socio-demographic characteristics

Female: Dummy variable that is coded as 1 if the respondent stated "female" as their gender and 0 otherwise.

Diverse: Dummy variable that is coded as 1 if the respondent stated "diverse" as their gender and 0 otherwise.

Age (median): Dummy variable that is coded as 1 if the respondent is above median age and 0 otherwise.

Income (median): Dummy variable that is coded as 1 if the respondent earns above median income and 0 otherwise.

Education level (tertiary): Dummy variable that is coded as 1 if the respondent has at least a university degree and 0 otherwise.

Recent hazards

Personal burden of COVID-19: "*All in all, how has your household been coping with the COVID-pandemic so far?*" Measured on 5-point scale from 1 to 5 where 1 means "no" and 5 means "very much so".

Financial impact of COVID-19: "*Did you experience any financial losses regarding your salary or otherwise in connection with the COVID-19 pandemic?*" Measured on 5-point scale from 1 to 5 where 1 means "no" and 5 means "very much so".

Impact of recent flood event: "*Have you been or are you directly or indirectly affected by the flood catastrophe that took place in some regions in Germany in July of 2021?*" Measured on 5-point scale from 0 to 4 where 0 means "not at all" and 4 means "very much so".

OTHER FACTORS

Belief in climate change: Standardized sum of the opinion on 12 statements about climate change, each measured on a 4-point scale where 1 means “completely disagree” and 4 means “completely agree”. The higher the score, the more the respondent beliefs in and worries about climate change. The statements are:

1. *“I am concerned about climate change."*
2. *"The consequences of climate change can cause great harm to people in the EU."*
3. *"It is important that the EU climate goal is met."*
4. *"If we act in unison, it is possible to attain the EU climate goal."*
5. *"The actions of a single person have an impact on climate change."*
6. *"Humankind is responsible for climate change."*
7. *"Scientific predictions of climate change are trustworthy."*
8. *"There is a great deal of disagreement among scientists about whether climate change is actually happening."* (Reversely coded)
9. *"I am sure that climate change exists."*
10. *"Climate change is exaggerated in the media."* (Reversely coded)
11. *"Our children should be learning about the causes, effects and potential solutions of global warming in school."*
12. *"There is a link between global warming from greenhouse gas emissions and the more frequent occurrence of extreme weather events such as heavy rainfall."*

Implementation of climate protection in EU: *"Climate protection is seriously persued and effectively implemented in the EU."* Agreement with this statement is measured on a 4-point scale from 1 to 4 where 1 means “completely disagree” and 4 means “completely agree”.

Implementation of climate protection in Germany:*"Climate protection is seriously persued and effectively implemented in Germany."* Agreement with this statement is measured on a 4-point scale from 1 to 4 where 1 means “completely disagree” and 4 means “completely agree”.

Implementation of climate protection in region:*"Climate protection is seriously persued and effectively implemented in [region]."* Agreement with this statement is measured on a 4-point scale from 1 to 4 where 1 means “completely disagree” and 4 means “completely agree”.

Trust in climate friendly companies: *"Please indicate how much you trust the following institutions." ... "companies that invest in climate-protection projects"* Measured on 4-point scale where 1 means “completely distrust” and 4 means “completely trust”.

Trust in scientists: *"Please indicate how much you trust the following institutions." ... "scientists that investigate climate change at public research institutions"* Measured on 4-point scale where 1 means “completely distrust” and 4 means “completely trust”.

Trust in supranational institutions: Standardized sum of the answer to two questions on trust in institutions, i.e. the UN and EU. Both are measured on a 4-point scale where 1 means “completely distrust” and 4 means “completely trust”.

Trust in national institutions: Standardized sum of the answer to three questions on trust in institutions, i.e. the city, state and national government. All three are measured on a 4-point scale where 1 means “completely distrust”

and 4 means “completely trust”.

C.2 Supplementary Analysis (robustness checks)

This section describes the details of the supplementary analysis. The main purpose of the supplementary analysis is to test against potential confounders that may affect our results.

C.2.1 Randomization check

Tables SC.1 and SC.3 show summary statistics across treatments. The last column includes p-values for the null hypothesis that socio-demograhpic characteristics are different across treatments. The null hypothesis can be rejected at conventional levels of statistical significance ($p < 0.05$) for most demographics.

C.2.2 Non-parametric tests

For both low and high climate goals, the difference between actual and estimated support is significant in non-parametric tests (low goals: Wilcoxon matched-pairs signed-rank test, z =16.04, p = 0.0001, n = 7,191; high goals: Wilcoxon matched-pairs signed-rank test, z = 18.95, p = 0.0001, n = 7,191). The increase in misperception from low to high climate goals is also robust in non-parametric testing (Wilcoxon matched-pairs signed-rank test, z = -2.05, p = 0.0407, n = 7,191).

Looking at regional heterogeneity, except for the difference between the second and thrid quartile the difference between the quartiles of regional misperception remains significant in non-parametric tests (1st vs. 2nd quartile: two sample Wilcoxon rank-sum test, z =-3.127, p = 0.0018, n = 3,310; 2nd vs. 3rd quartile: two sample Wilcoxon rank-sum test, z = 0.835, p = 0.4038, n = 4,528; 3rd vs. 4th quartile: two sample Wilcoxon rank-sum test, z = -6.089, p < 0.0000, n = 3,881).

Turning to study 2, the difference between control group means from regions below, at and above the national average support remains at least weakly significant in non-parametric tests (below vs. at national average: two sample Wilcoxon rank-sum test, z =-1.677, p = 0.0935, n = 966; at vs. above national average: two sample Wilcoxon rank-sum test, z = -2.378, p = 0.0174, n = 978).

The overall effect of the national norm compared to the control group is also robust in non-parametric tests, while the regional norm effect remains insignificant (control vs. national norm: two sample Wilcoxon rank-sum test, z =-2.851, p = 0.0044, n = 3,145; control vs. regional norm: two sample Wilcoxon rank-sum test, z = -0.310, p = 0.7565, n = 3,136). Looking at the split sample, again findings from the t-tests are confirmed by at least weakly significant results (control vs. regional norm in regions with support below the average: two sample Wilcoxon rank-sum test, z =1.845, p = 0.0651, n = 1,177; control vs. national norm in regions with support below the average: two sample Wilcoxon rank-sum test, z =-1.946, p = 0.0517, n = 1,171; control vs. national norm in regions with support above the average: two sample Wilcoxon rank-sum test, z =-2.788, p = 0.0053, n = 1,190).

C.2.3 Effect of high climate goals on public support for climate policies

We investigate treatment effects of our information provision experiment by conducting regression analysis. Our within-subject design allows us to model the data as a panel. The statistical model underlying the results in Table C.2 is

$$Y_{irt} = \alpha + \beta \times ClimatePolicyScenario_{rt} + \gamma' x_{irt} + \epsilon_{irt} \tag{C.1}$$

where Y_{ir} is either the actual or estimated support for climate policies or the misperception error, i.e. the difference between the individual estimated and the average regional actual support, of individual i living in region r receiving information t. $ClimatePolicyScenario_{rt}$ is a dummy variable which takes on the value 0 for information about low climate goals and 1 for information

about high climate goals. Thus, the coefficient β represents the treatment effect of information about high climate goals on individual support. Note that the low climate goals scenario was repeated in the control group. The constant α represents the mean support for the low goals scenario. x_{irt} is a vector of control variables. It includes socio-demographic characteristics (gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median values), income (indicator variable for above-median values), education level (indicator variable for tertiary education)), NUTS2 regional fixed effects and survey week fixed effects. Regional fixed effects and survey week fixed effects control for omitted variable bias that is specific to regions or the interview time. Standard errors are clustered at the regional level. The regressions are done separately for the control and treatment group. Finally, for both the regression with the misperception error is repeated with additional controls that can be seen in Table SC.2.

C.2.4 CORRELATIONS WITH INDIVIDUAL FACTORS FOR HIGH CLIMATE GOALS

In Figure C.2 we show the correlations of individual factors with the absolute value of the misperception error. The statistical model underlying the results in Figure C.2 is

$$\begin{aligned} |MisperceptionError|_{ir} = \alpha + \beta' RecentHazards_{ir} \\ + \delta' OtherFactors_{ir} + \gamma' x_{ir} + \epsilon_{ir} \end{aligned} \tag{C.2}$$

where $|MisperceptionError|_{ir}$ is the absolute value of the misperception error, i.e. the difference between the individual estimated and the average regional actual support, of individual i living in region r receiving informatin about the high climate goals. $RecentHazards_{ir}$ and $OtherFactors_{ir}$ are vectors of the measures listed in Figure C.2. x_{ir} is a vector that includes the following control variables: gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median values), income (indicator variable for above-median values), education level (indicator variable for tertiary education), NUTS2 regional fixed effects and survey week fixed effects. Furthermore, we standardized all explanatory variables

to have a mean of zero and a standard deviation of one (z-score), so the coefficients of standardized variables can be interpreted as the change in supporting rates associated with a one standard deviation change in the explanatory variable. Standard errors are clustered at the regional level.

C.2.5 Treatment effect of social norms on support

Table C.4 shows the treatment effect of the national and regional norm treatment on support. The statistical model underlying the results is

$$\begin{aligned} Support_i =& \alpha + \beta \times NationalNormTreatment_i \\ &+ \delta \times RegionalNormTreatment_i + \gamma' x_i + \epsilon_i \end{aligned} \tag{C.3}$$

where $Support_i$ is the support for climate policies of individual i. $National\ NormTreatment_i$ and $RegionalNormTreatment_i$ are dummy variables which take on the value 1 if the respondent received the national or regional norm treatment, respectively, and 0 otherwise. Thus, the coefficients β and δ represent the treatment effect of the national and regional norm treatment, respectively. The constant α represents the mean support in the control group. x_i is a vector of control variables. It includes socio-demographic characteristics (gender (two dummy variables representing female and diverse with male being the omitted category), age (indicator variable for above-median values), income (indicator variable for above-median values), education level (indicator variable for tertiary education)), NUTS2 regional fixed effects and survey week fixed effects. Regional fixed effects and survey week fixed effects control for omitted variable bias that is specific to regions or the interview time. Standard errors are robust. The regression is conducted four times: for all respondents and split for the respondents living in regions with support below, at and above the national average.

C.3 TABLES AND FIGURES

Table C.1: Descriptive statistics and randomization check for survey 1

	Treatment		**Control**		
	Mean	SD	Mean	SD	p-value
Age	49.61	(15.09)	48.50	(16.34)	0.577
Female	0.51	(0.50)	0.39	(0.49)	0.010
Diverse	0.00	(0.04)	0.00	(0.00)	0.669
Income	2963.46	(1706.94)	2892.43	(1895.02)	0.047
Tertiary education	0.30	(0.46)	0.35	(0.48)	0.292
Observations	7191		109		

Notes. "Age" is the age of the respondent ranging from 18 to 90 years. "Female" is coded as 1 if the respondent was female and 0 otherwise. "Diverse" is coded as 1 if the respondent was of non-binary gender and 0 otherwise. "Income" is coded as the mean income of the income section the respondent selected to be in. "Tertiary education" is coded as 1 if the respondent has at least a university degree and 0 otherwise. The sample size for education is reduced due to 3 people not answering the question on educational level. The last column shows p-values for the null hypothesis of perfect randomization (χ^2-tests).

Table C.2: Effect of high climate goals on public support for climate policies

Dependent variable:	Actual support		Estimated support		Misperception error		Misperception error	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Control	Treat.	Control	Treat.	Control	Treat.	Control	Treat.
Constant	3.635***	3.866***	3.603***	3.744***	-0.161	-0.183***	-1.030	-0.691***
	(0.206)	(0.053)	(0.227)	(0.039)	(0.232)	(0.039)	(0.627)	(0.073)
High climate goals	-0.028	-0.247***	-0.037	-0.285***	-0.009	-0.038***	-0.009	-0.038***
	(0.026)	(0.010)	(0.045)	(0.010)	(0.045)	(0.009)	(0.046)	(0.009)
Personal burden of COVID-19							0.007	0.026*
							(0.128)	(0.012)
Finanical impact of COVID-19							-0.002	-0.005
							(0.089)	(0.010)
Impact of recent flood event							-0.153	0.000
							(0.092)	(0.010)
Belief in climate change							0.263+	0.198***
							(0.148)	(0.015)
Implement. of climate protection in EU							-0.250	0.070***
							(0.163)	(0.015)
Implement. of climate protection in Germany							0.340+	0.037*
							(0.185)	(0.017)
Implement. of climate protection in region							0.189	0.069***
							(0.194)	(0.017)
Trust in climate friendly companies							-0.006	0.059***
							(0.094)	(0.010)
Trust in scientists							0.081	0.025
							(0.104)	(0.015)
Trust in supranational institutions							0.087	0.007
							(0.174)	(0.013)
Trust in national institutions							-0.139	-0.003
							(0.136)	(0.011)
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey week FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nuts2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.412	0.039	0.424	0.059	0.374	0.012	0.530	0.125
Observations	218	14376	218	14376	218	14376	218	14376

Notes. + p<0.1, * p<0.05, ** p<0.01, *** p<0.001. Clustered standard errors in parentheses (NUTS2). Columns 1 and 2 show results for actual support as dependent variable, columns 3 and 4 for estimated support and columns 5 to 8 for the misperception error (estimated support - actual support). Both actual and estimated support are measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Depending on the column, specifications include the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects, subnational region fixed effects. The sample size is reduced due to 3 people not answering the question on educational level. Note that the low climate goals scenario was repeated in the control group.

Table C.3: Descriptive statistics and randomization check for survey 2

	Control		National norm		Regional norm		Total sample		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	p-value
Age	50.29	(15.64)	49.93	(15.56)	49.95	(15.48)	50.05	(15.56)	0.815
Female	0.48	(0.50)	0.46	(0.50)	0.48	(0.50)	0.48	(0.50)	0.271
Diverse	0.00	(0.05)	0.00	(0.04)	0.00	(0.05)	0.00	(0.05)	0.908
Income	2738.94	(1529.65)	2832.84	(1717.99)	2835.49	(1616.70)	2803.05	(1624.69)	0.212
Tertiary education	0.30	(0.46)	0.31	(0.46)	0.30	(0.46)	0.30	(0.46)	0.732
Observations	1554		1591		1582		4727		

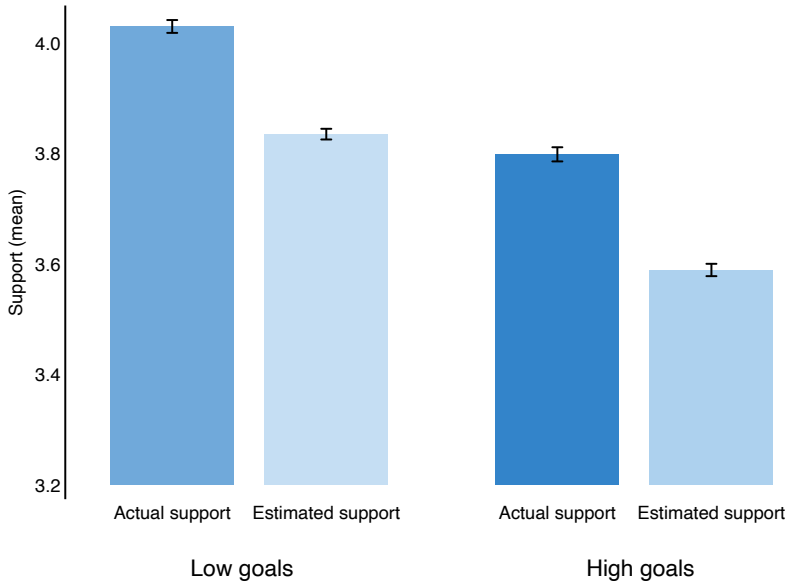
Notes. "Age" is the age of the respondent ranging from 18 to 90 years. "Female" is coded as 1 if the respondent was female and 0 otherwise. "Diverse" is coded as 1 if the respondent was of non-binary gender and 0 otherwise. "Income" is coded as the mean income of the income section the respondent selected to be in. "Tertiary education" is coded as 1 if the respondent has at least a university degree and 0 otherwise. The sample size for income and education is reduced due to 336 people not answering the question on income and 12 people not answering the question on educational level. The last column shows p-values for the null hypothesis of perfect randomization (χ^2-tests).

Table C.4: Treatment effect of social norms on support

	(1) overall	(2) support < avg	(3) support = avg	(4) support > avg	(5) overall	(6) support < avg	(7) support = avg	(8) support > avg
Constant	3.764***	3.315***	3.334***	3.680***	3.812***	3.399***	3.371***	3.696***
	(0.068)	(0.097)	(0.124)	(0.091)	(0.063)	(0.089)	(0.115)	(0.086)
National norm treatment	0.080*	0.095	-0.051	0.143*	0.092*	0.103	-0.024	0.153**
	(0.040)	(0.069)	(0.079)	(0.061)	(0.038)	(0.066)	(0.075)	(0.059)
Regional norm treatment	-0.023	-0.158*	0.043	0.065	-0.011	-0.155*	0.050	0.091
	(0.041)	(0.071)	(0.078)	(0.063)	(0.039)	(0.067)	(0.076)	(0.061)
Test of equality of coefficients								
National vs. regional	0.103	0.253	-0.094	0.078	0.103	0.258	-0.073	0.062
	(0.040)	(0.069)	(0.081)	(0.062)	(0.039)	(0.067)	(0.078)	(0.059)
	[0.011]	[0.000]	[0.242]	[0.210]	[0.008]	[0.000]	[0.348]	[0.300]
Socio-economic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income control	Yes	Yes	Yes	Yes	No	No	No	No
Survey week FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nuts2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.055	0.059	0.031	0.027	0.049	0.051	0.026	0.022
Observations	4387	1629	1106	1652	4715	1766	1176	1773

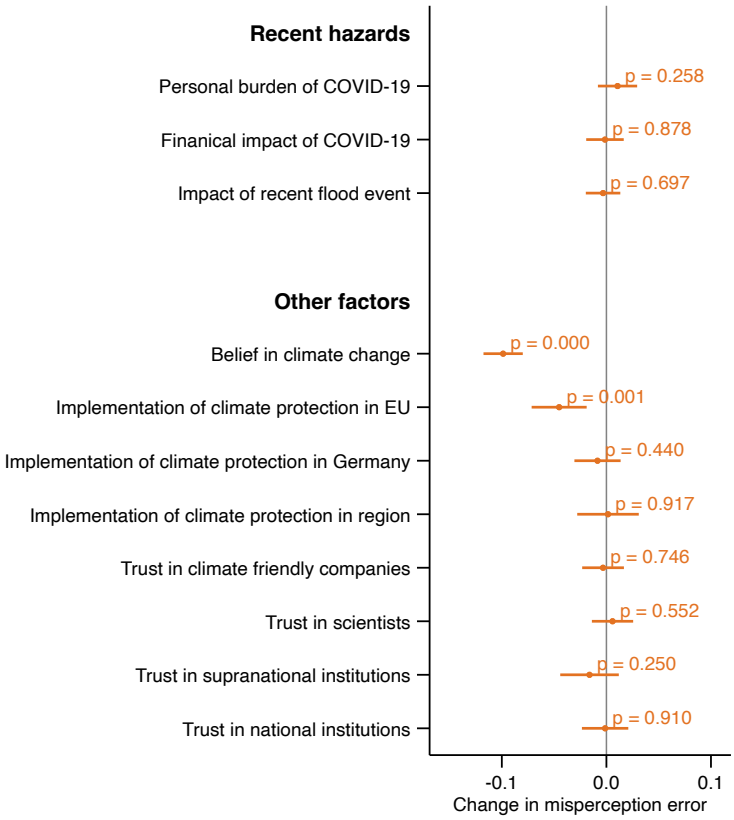
Notes. * p<0.05, ** p<0.01, *** p<0.001. Robust standard errors are in parentheses. For the test of equality of coefficients, the p-values of the Wald test are included in square brackets. The table shows results for support as dependent variable. Support is measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). Specifications include the following control variables: gender, age (median), education level (tertiary), survey week fixed effects, subnational region fixed effects. Columns 1 to 4 additionally include income (median) as a control variable, while this variable is left out in columns 5 to 8. The sample size is reduced due to 336 people not answering the question on income and 12 people not answering the question on educational level.

Figure C.1: Mean support for climate policies under low and high climate goals for injunctive norm



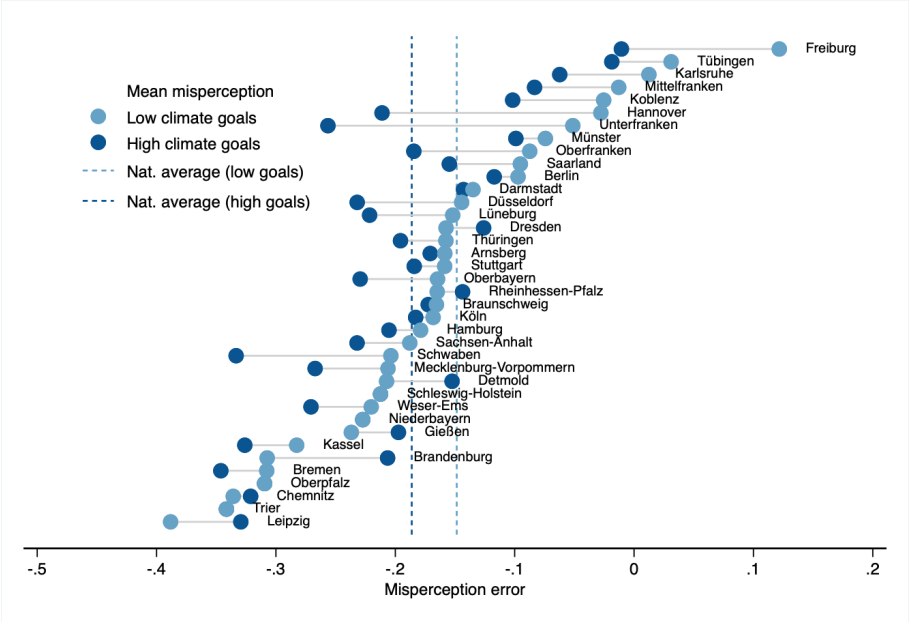
Notes. The figure shows mean actual and estimated support for the injunctive norm, i.e. the norm based on peoples' perception of peoples' actual behavior, once for the low and once for the high climate goals. Both actual and estimated support are measured on a 5-point scale (completely oppose to completely support with neutral option). Bars indicate standard error of the mean. Observations = 7,173.

Figure C.2: Correlations with individual factors for high climate goals



Notes. The figure plots coefficients based on an OLS regression. The specification is based on equation (C.2). The dependent variable is the absolute value of the misperception error (estimated support - actual support). Both actual and estimated support are measured on a 5 point-scale ranging from 1 to 5 (completely oppose to completely support with neutral option). The regression includes the following control variables: gender, age (median), income (median), education level (tertiary), survey week fixed effects, subnational region fixed effects. The coefficients of the explanatory variables are standardized (z-score). They can therefore be interpreted as the difference in support rate associated with a one standard deviation change in the explanatory variable. Error bars indicate 95% confidence intervals obtained from standard errors that are clustered at the sub-national level. The sample size is reduced due to 3 people not answering the question on educational level. Observations = 7,188.

Figure C.3: Regional heterogeneity in misperception error for low and high climate goals



Notes. The figure shows the mean misperception error for each of the 38 NUTS regions. Here, the misperception error is defined as the difference between mean actual and estimated support for EU climate policies within each respective NUTS2 region. Both actual and estimated support are measured on a 5-point scale (completely oppose to completely support with neutral option). The dashed lines represents the national mean of actual support for low and high goals, respectively. Observations = 7,191.