

Moral Bandwidth and Environmental Concerns in the Time of COVID: Evidence from Germany

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Abstract

Did the COVID-19 pandemic crowd out environmental concerns, as one might expect if “pools of worry” were finite or “moral bandwidth” was limited? We use Chancellor Angela Merkel’s address to the German nation on 18 March 2020 as the threshold in a regression discontinuity in time (RDiT) to evaluate the effects of an increase in COVID-based economic and health concerns on the climate and environmental concerns of respondents to the German Socio-Economic Panel (SOEP). We find no evidence of crowding out – there is even some indication that environmental concerns increased, especially on the intensive margin – and show that this result survives various robustness checks. We also share some evidence that the treatment effects are heterogeneous: the concerns of older and more patient Germans, as well as those who report more social trust, increased relative to other groups. This does not mean that bandwidth is unlimited: our results are also consistent with the existence of a hierarchy of concerns, on which climate and environment rank high, or the perception that the pandemic and climate change are connected, and concerns about them are complementary.

Keywords: Environmental preferences, COVID-19, German Socio-Economic Panel

JEL codes: Q5, H8

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1 Introduction

Even as the global climate crisis has worsened,¹ Carlsson et al. (2021) describes the period from 2009 to 2019 as the “climate decade,” one marked by both changing attitudes and increased willingness-to-pay for climate policies. Since March 2020, however, the COVID-19 pandemic has demanded global attention, calling into question to what extent the pandemic has displaced public concern about the environment.

There is (non-causal) reason for optimism: a Pew Foundation survey (Pew Research Center, 2020) released in the summer of 2020 found that in many countries, residents were about more or less equally concerned about global warming and pandemics, and that concern about the former had not wavered. Similarly, Krosnick and MacInnis (2020) found that COVID-19 pandemic has not decreased Americans’ belief in climate change or its threat: the percentage of Americans who believe climate change will be a serious problem for the United States and the world did not change from 2018 to 2020 and in 2020 stood at about 82%.

On the other hand, there is concern that the increased politicization of science during the pandemic has weakened public trust across issues (Cross, 2021). Further, there is some evidence that climate concern is “elastic” with respect to current economic conditions and anxieties: Kahn and Kotchen (2011), for example, found that in the United States, belief in global warming and support for climate mitigation policies have been inversely related to local unemployment, a conclusion echoed in the work of Meyer (2022) on the effects of the Great Recession. In other recent work, Fetzer et al. (2020) exploited the variation in beliefs about pandemic risk to estimate substantial causal effects on economic anxieties of the sort associated with, say, increased joblessness.

Narratives like these are consistent with the existence of some fixed “moral bandwidth” or, to invoke the term introduced in Weber (2006), a “finite pool of worry” which can cause environmental concerns to be crowded out. Our own results, based on the German Socio-Economic Panel (SOEP) (Goebel et al., 2019), confirm that while the pandemic caused Germans to become more concerned about economic and health matters, concern about the

¹The newly released IPCC Synthesis Report of the Sixth Assessment Report warns “There is a rapidly closing window of opportunity to secure a livable and sustainable future for all (*very high confidence*)” (IPCC, 2023).

climate and environment were not less acute. Indeed, our evidence suggests that, at least for some time, there was *more* concern about climate change and the environment, at least on the intensive margin.

2 Moral bandwidth and the German experience with COVID-19

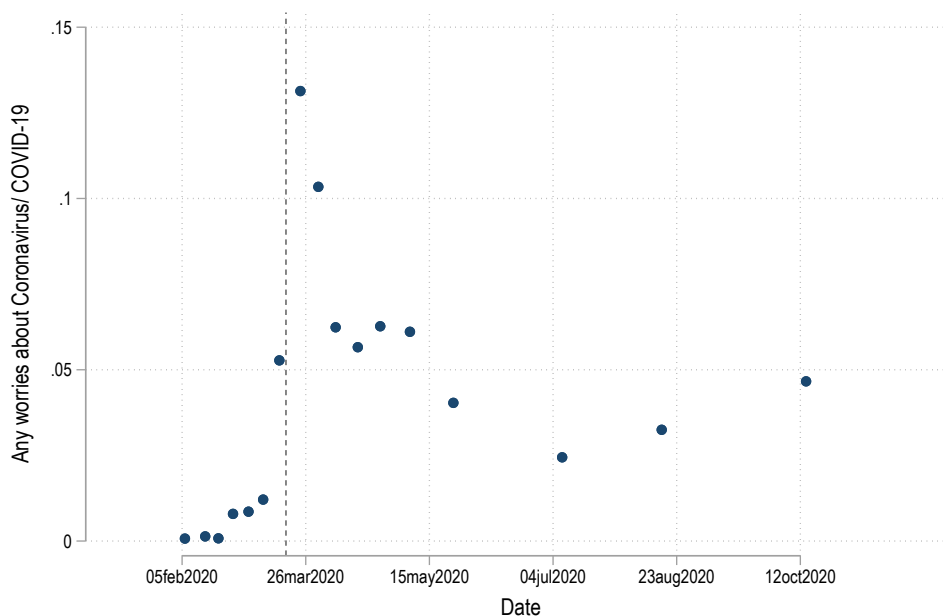
Economists have devoted considerable attention to the adverse consequences of some shocks on “cognitive bandwidth” (see, for example, Dean et al. (2018)), and there is now evidence that COVID-19 is one of those (Bogliacino et al., 2021). Weber (2006) and Sisco et al. (2020) have argued, however, that it is not just “pools of attention” that are finite, but also “pools of worry.” Viewed from this perspective, whatever the effects of COVID-related economic and health concerns on decision-making, other concerns, not least those about climate and the environment, might also be displaced.

The hypothesis that the pandemic has crowded out environmental and climate concerns would seem to run afoul of recent cross-sectional surveys which show that, at least in the United States, such concerns remain robust (Krosnick and MacInnis, 2020; Leiserowitz et al., 2021). In a similar vein, Evensen et al. (2021) report on a longitudinal panel of United Kingdom residents which finds no attenuation of climate concerns between April 2019 and June 2020, while Berazneva et al. (2023) use an information provision experiment to show that knowledge of true state-level health and economic impacts of COVID-19 did not crowd out the environmental concerns of young American adults.

A more nuanced interpretation of the finite pool of worries framework, however, would allow for the existence of a hierarchy of concerns, such that a shock (first) crowds out other, non-environmental, concerns first. It might also allow for “complementary worries” that cannot displace one another. It follows that our main result – the maintenance, even enhancement, of climate- and environment-related concerns, in the midst of the pandemic – is at least consistent with limited moral bandwidth.

Our results might also be viewed within a framework that emphasized the effects of the pandemic on individual risk and time preferences and the consequences of these for

Figure 1: Time series of concerns about COVID-19/Coronavirus



Note: The x-axis shows the interview date. The vertical bar indicates the date of Angela Merkel’s televised address to the nation, 18 March 2020. Data source: SOEPv.37eu.

climate concerns. We are cautious about such an approach, because the empirical evidence on preferences and climate concerns is surprisingly weak (Lades et al. (2021), for example) and, no less important, there is at best mixed evidence (Graeber et al., 2020) on the effects of COVID-19 on the risk preferences of Germans.

Our focus in this paper is the German experience with the pandemic and, in particular, Chancellor Angela Merkel’s first extraordinary (that is, apart from regular New Years addresses) televised address to the nation on 18 March 2020. The first case of COVID-19 in Germany was recorded on 27 January 2020, and while the initial breakout was soon contained, subsequent clusters soon emerged all over the country. Within weeks, COVID-19 spread all over Germany. As shown in Figure A.1 in the appendix, the number of cases increased quickly until it peaked on 4 April, about 16 days after Merkel’s address. On 4 April 2020, the seven day incidence per 100,000 inhabitants was about 44.48.

The address aimed at preparing the German population for the challenges associated with the COVID-19 pandemic that laid ahead. It was also interpreted as a last call before the

federal government and the 16 states implemented far reaching interventions to slow down the spread of COVID-19.² The language of the address was historic, even transformational: “This is serious. Take it seriously. Since German unification – no, since the Second World War – no challenge to our nation has ever demanded such a degree of common and united action.” Perhaps, not surprisingly, the Germans’ concerns about COVID-19/Corona-virus, as recorded in the German Socio-Economic Panel (SOEP), immediately increased as can be seen in Figure 1.

3 Data

The German Socio-Economic Panel (SOEP) (Goebel et al., 2019) is uniquely suited for our empirical investigation.³ The SOEP is a representative panel of households, first administered in 1984, that annually surveys respondents on a wide range of topics such as demographics, labor market history, attitudes and health, among others.

Of particular relevance for our research question, respondents are asked about their concerns over the impacts of climate change and environmental protection, in addition to other concerns – general and personal economic situation, social cohesion, health, immigration, and peace, among several others (the survey question is shown in Figure A.2 in the appendix). Responses to these concern questions are reported on a three-point Likert scale, where 1 stands “Very concerned,” 2 stands for “Somewhat concerned” and 3 stands for “Not concerned at all,” but in what follows, we invert the scale so that higher values are associated with increased concern. We also standardize the scale to have mean of zero and standard deviation of one in the control group (i.e., those interviewed prior to Merkel’s address). Last, to help disentangle differences at the intensive and extensive margin, we also make use of two additional indicators, one for cases in which individuals are *at least* somewhat concerned, and another for cases in which individuals are very concerned.

To provide evidence in favor of continuity and to explore possible heterogeneities in the effects of Chancellor Merkel’s address, we use some additional variables: gender, age, educa-

²The English translation of the address can be found at <https://www.bundesregierung.de/breg-de/themen/coronavirus/-this-is-a-historic-task-and-it-can-only-be-mastered-if-we-face-it-together-1732476>.

³We use the SOEP v37. DOI:10.5684/soep.v37eu.

tion, migration background, household size, household illness, mental health, patience and willingness to take risks. Table A.1 in the appendix displays the summary statistics for our sample.

4 Empirical strategy

In order to identify the effect of Merkel’s address on Germans’ concerns, we compare individuals’ concerns just before and after the Chancellor Merkel’s address to the nation on 18 March 2020.⁴ That is, we estimate the following equation:

$$y_{it} = \alpha + \beta I[t \geq 19/03/2020] + \gamma f(t - 19/03/2020) + \delta f(t + 19/03/2020) + \sum_{m=1}^{12} \zeta_r * I[\text{interview mode} = r] + \epsilon_{it}. \quad (1)$$

Here, we regress individual i ’s concerns, measured on the interview date t , on an indicator that is equal to one if the individual was interviewed after Merkel’s address to the nation and zero otherwise. The estimate of β then reflects the causal estimate of Merkel’s address on individuals’ concerns. We control for a function f , of size $z \times 1$, where z corresponds to the degree of the polynomial that takes the time to the address as its argument. In our main specification, we focus on a linear trend, i.e., $z = 1$. However, in Section 5.3, we also control for a second order polynomial in the running variable and find that our results are robust. We allow the trend to differ on both sides of the cut-off. The coefficient vectors γ and δ are each of size $1 \times z$. We also control for the interview mode, since computer-assisted personal interviews (CAPIs) became less common, and phone interviews more common, as the pandemic restrictions were imposed. The term ϵ_{it} is an error term, capturing all unobserved factors influencing individuals’ concerns. All regressions are weighted using triangular kernels. We restrict the bandwidth to 20 days around the address date. In the appendix, we show that our main results are robust to various bandwidth choices.

Identification. For β to be consistently estimated, we require individuals’ concerns to be a continuous function of the running variable in the absence of the treatment, i.e., the Merkel

⁴Since the address was televised in the evening, we conjecture that individuals interviewed during the day are part of the control group.

address (Hahn et al., 2001). We provide suggestive evidence for the validity of the continuity assumption. In Table A.2 in the appendix, we replace our dependent variable in Equation 1 with individuals' predetermined characteristic. As these are predetermined characteristics, we should expect them to be invariant to change in treatment assignment. This is what we see – throughout we find small in magnitude and statistically insignificant coefficients.

A common threat to identification is sorting in or out of the treatment around the cutoff. Typically, a discontinuity in the empirical probability density function of interview dates is indicative of strategic sorting (McCrary, 2008). In our application, this McCrary density test is not informative. Fewer interviews are conducted during weekends, which results in systematic discontinuities in the empirical probability density function of interview dates since our treatment takes place in the middle of the week. As a result, the McCrary density test can not rule out the absence of systematic sorting around the cutoff. However, a similar pattern emerges in the other weeks. Figure A.3 in the appendix displays the number of interviews within our bandwidth.

5 Results

5.1 Did Merkel's address achieve its goals?

Merkel's address to the nation was to prepare the German audience for the upcoming economic and health challenges, so that we would expect the audience's attention in the respective domains to increase. And indeed, the address increased individuals' concerns about the economy in general, about their own economic situation, and about one own's health. Table 1 displays the result of estimating Equation 1 on concerns in a wide range of domains. We find that concerns about the general and one own's economic situation increase by about 18% of a standard deviation, as displayed in columns (1) and (2) of Panel A. We also find a small, yet statistically insignificant, effect of about 7% of a standard deviation for individuals' concerns about their own health, as displayed in column (1) in Panel B. We find no effect, however, on individuals' concerns about social cohesion, immigration, or peace, as might be expected if crowd out of other, non-environmental, concerns occurred.

Table 1: Effects of Angela Merkel’s address on other concerns

	(1)	(2)	(3)
<i>Panel A:</i>	The economy	Own economic sit.	Social cohesion
Interview after 18 March	0.180*** (0.056)	0.183*** (0.040)	0.008 (0.078)
N	7690	7691	7689
<i>Panel B:</i>	Own health	Immigration	Peace
Interview after 18 March	0.070 (0.043)	0.047 (0.053)	0.003 (0.050)
N	7682	7681	7687

Notes: Dependent variables are concerns about the economy, own economic situation, social cohesion in society (columns (1), (2), (3) in panel (A)), own health, immigration to Germany, maintaining peace (columns (1), (2), (3) in panel (B)). The estimates are from a regression of the respective raw scale, standardized to be measured in standard deviations of the control group, on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a linear trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

5.2 Main analysis

We first display the impact of Merkel’s address to the nation on individual concerns about the impacts of climate change and environmental protection in Figure 2, following best practices outlined in Korting et al. (2023).⁵ The markers in Figure 2 correspond to the daily mean of the concerns, measured in standard deviations of the control group, i.e., the individuals who were interviewed before the address. The vertical dashed line displays the day of Merkel’s address on 18 March 2020.

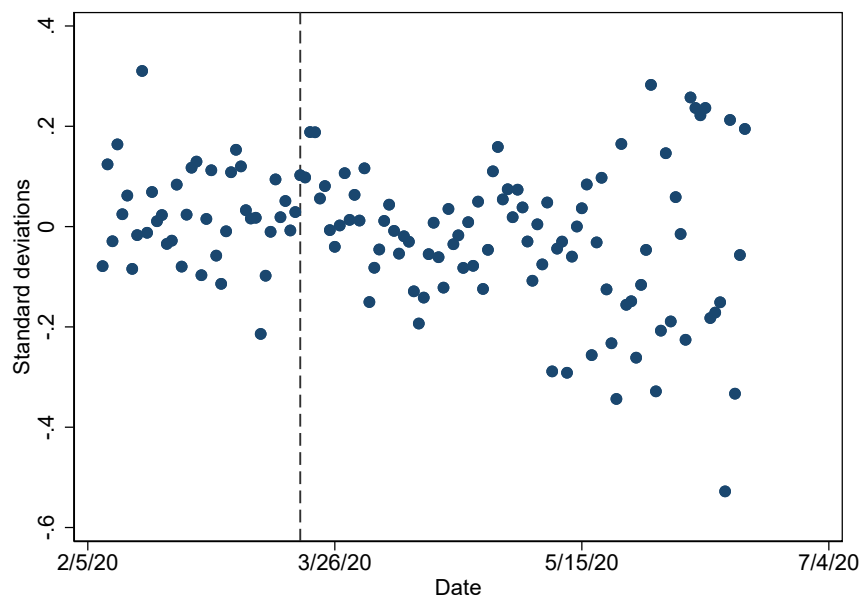
As Figure 2 shows, there is no pronounced discontinuity – Merkel’s address to the nation does not impact individual climate and environmental concerns. Figure 2 also shows that the concerns are stable during the 2020 interview period (from February to June).⁶

Similar result is found when we estimate Equation 1 (Table 2, column (1)). If anything, we find a small (6-7%) increase in concerns (column (1)), however, as Figure 2 shows this

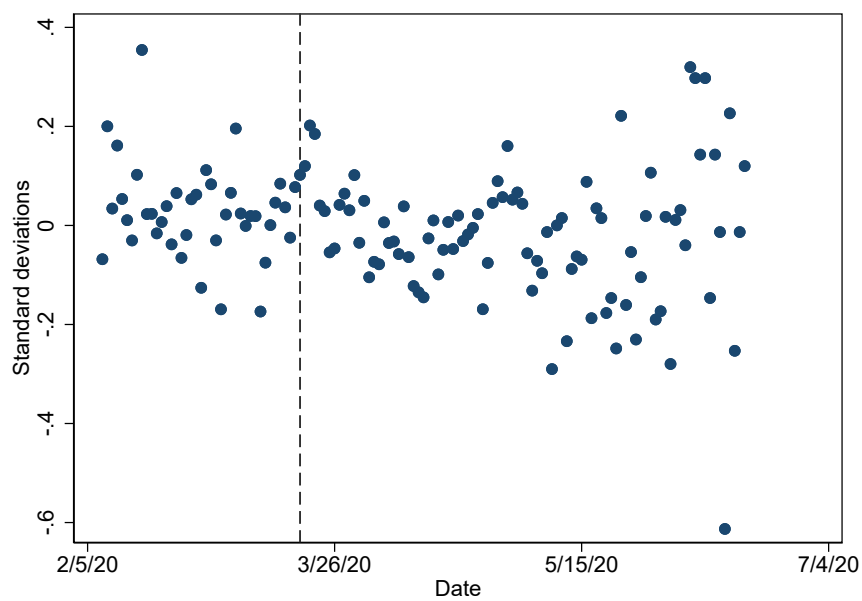
⁵For example, we use small bins and omit fitted lines that have been found to increase the type I error, overly suggesting discontinuities.

⁶Greater dispersion of concerns in May and June partially reflects a smaller sample as the number of interviews declines with time.

Figure 2: Discontinuity around Merkel's address to the nation



(a) Concerns about the impacts of climate change



(b) Concerns about environmental protection

Note: The dependent variable is normalized to have mean zero and standard deviation one of the control group. The number of bins has been chosen to mimic variance evenly-spaced method using spacings estimators. Data source: SOEPv.37eu.

increase fades over time. While the direction of the effect is into the opposite direction of the effect found in Evensen et al. (2021) who find a small decrease in climate change beliefs in the UK, the effect sizes are very similar.

We also find suggestive evidence that the effect of Merkel’s address on environmental concerns operates at the extensive and not the intensive margin. Columns (2) and (3) in Table 2 show results for different specifications of the concerns variable. Column (2) corresponds to results for an indicator that is equal to one if individuals indicate that they are either somewhat or very concerned and zero if not concerned at all. Column (3) shows results for an indicator that is equal to one if individuals indicate they are very concerned and zero if they are somewhat or not concerned. Column (2) shows that Merkel’s address does not affect individuals’ concerns about the impacts of climate change or environmental protection at the extensive margin. However, the address changes those concerns at the intensive margin, as indicated by a statistically significant at 10% coefficient in column (3). The likelihood of being very concerned in response to the address increases for both dimensions by three or four percentage points. Relative to the baseline means, this corresponds to a relative change of about 12.5% for being very concerned about the impact of climate change and 13.8% for being very concerned about environmental protection. These results are consistent with the notion, introduced earlier, that concerns about the pandemic and environment are somehow complementary.

5.3 Robustness

Quadratic trends: Our results are robust to the inclusion of a quadratic trend in the running variable, instead of a linear trend.⁷ Table A.3 displays the results if we control for a quadratic trend for concerns about the economy (panel (A)) and one own’s economic situation (panel (B)).⁸ The estimate for concerns about the economy is half its point estimate in Table 1; however, the estimate for concerns about own’s economic situation remains unchanged,

⁷Commonly, regression discontinuity designs are prone to bias due to misspecification. A common procedure is to test how robust the estimates are to higher order polynomials in the running variable. However, Gelman and Imbens (2019) show that these polynomials should be limited to polynomials of second order.

⁸Note that the MSE-optimal bandwidth varies for quadratic specifications. To utilize the data in the best way possible and avoid discussions about robustness with respect to bandwidth choice, we do not restrict the bandwidth in this exercise *a priori*, but present only results with the MSE-optimal bandwidths.

Table 2: Effects of Angela Merkel’s address on climate and environmental concerns

	(1)	(2)	(3)
	Raw scale	Concerned at all	Very concerned
<i>Panel A: Concerned about the impacts of climate change</i>			
Interview after 18 March	0.070** (0.032)	0.015 (0.017)	0.031* (0.016)
Mean of the control group		0.880	0.407
N	7688	7688	7688
<i>Panel B: Concerned about environmental protection</i>			
Interview after 18 March	0.061* (0.036)	0.000 (0.016)	0.038 (0.026)
Mean of the control group		0.895	0.363
N	7691	7691	7691

Notes: Dependent variables are concerns about the impacts of climate change in panel (A) and about environmental protection in panel (B); they are shown as the raw scale, measured in standard deviations of the control group in column (1), as an indicator that is equal to one if an individual has any concerns, and zero otherwise in column (2), and as an indicator that is equal to one if an individual is very concerned, and zero if the individual is somewhat concerned or not concerned at all in column (3). The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a linear trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

pointing to the robustness of our estimates to the inclusion of quadratic trends. Table A.4 shows the results for climate and environmental concerns: the effects on the raw scale of climate concerns (column (1) in panel (B)) and the indicator for being “Very concerned” (column (3)) increase in magnitude and remain statistically significant. Similarly, the effects on the concerns about environmental protection (panel (B)) on the raw scale (column (1)) and the indicator for being “Very concerned” (column (3)) increase in magnitude, however, they are not statistically significant.

Bandwidth choice: Our results are also robust to various bandwidth choices. Figure A.4 in the appendix displays the effect sizes and associated 95% confidence intervals for our two main outcomes – concerns about the climate change impacts and environmental protection in panels (a) and (b), respectively. Throughout, the coefficient estimates are relatively stable or become stable as the bandwidth approaches the MSE-optimal bandwidth.

Placebo regression: We repeat the estimation of Equation 1 using data from 2018, as a placebo check. Table A.5 in the appendix shows the results where the discontinuity is set for 19 March 2018. We use data from 2018, two years prior to the COVID-19 pandemic in 2020, when temperatures were comparable⁹ and report results controlling for interview mode effects, as in our main specification in panel (A), and without controlling for mode effects in panel (B). As expected, there are no discontinuities.

Event study analysis: Finally, we confirm our results with an event study analysis, where we compare the weekly concerns reported in 2020 (the COVID-19 year) to the weekly concerns reported in 2018. Figure A.5 in the appendix shows the point estimates of the coefficients of the interactions of the indicator equal to one if the survey year is 2020 and a full set of indicators for the weeks in the respective years. Concerns about the climate impacts (panel (a)) and environmental protection (panel (b)) are the same across 2020 and 2018 and do not change before and after Merkel’s address, confirming the results in Figure 2. We do, however, see an increase in concerns about the economy and own economic situation echoing the results from Table 1.

⁹In contrast to both 2018 and 2020, 2019 was characterized by unusual flooding and heat waves in Germany, as described on <https://www.dw.com/en/storm-axel-causes-travel-disruption-flooding-in-germany-austria/a-48820037>, and <https://www.worldweatherattribution.org/human-contribution-to-the-record-breaking-july-2019-heat-wave-in-western-europe/>.

5.4 Heterogeneity analysis

We further focus on the effect of Merkel’s address on concerns about the climate change impacts for various subsamples – where we split the main sample by age (older than 40 or younger), educational attainment (those with at least general intermediate qualifications and those without), risk preferences, time preferences, social trust, and depression status (those who report at least a modest depression based on PHQ-4 score and those who do not report any). Table 3 displays the effect sizes for various sample splits, where panel (A) displays the effect size for high realizations of the splitting variable, i.e., concerns about the climate change impacts, and panel (B) displays low realizations of the splitting variable. For most sample splits, the impact is positive, but small in magnitude and not statistically significant, echoing the results in Table 2.

We find that the effect is mainly concentrated among individuals who are older than 40 years: for them, Merkel’s address increases concern about climate by 9% of a standard deviation (column (1)); in contrast, the effect is virtually zero for younger adults. One possible explanation is that Merkel’s address that was televised on the evening of 18 March 2020 is more salient to older individuals who are consuming more traditional media than younger individuals. Risk and time preferences also seem to matter. The effect of Merkel’s address is concentrated among individuals who score 5 or lower on the scale for willingness to take risks – for them the concerns about the impacts of climate change increase by 12% (panel (B) in column (3)), suggesting that more risk-averse individuals become more concerned, as expected. Concerns of individuals who score higher than 5 on the patience scale increase by 12% (panel (A) of column (4)), while concerns of individuals who score 5 or lower increase more – by 15% (panel (B) of column (4)). Finally, concerns of individuals who score above the median on the social trust scale increase by 11% (panel (A) of column (5)), while concerns of individuals with lower scores remain the same.

5.5 Another test of the mental bandwidth theory

An implication of the mental bandwidth theory is that Merkel’s address decreased the strength of concerns about the impact of climate change or environmental protection, relative

Table 3: Heterogenous effects of Angela Merkel’s address on climate concerns

	(1)	(2)	(3)	(4)	(5)	(6)
	Age	Educ.	Risk	Patience	Social trust	Depression
Panel A: High realizations						
Interview after 18 March	0.089*** (0.032)	0.060 (0.044)	-0.005 (0.070)	0.116*** (0.036)	0.112* (0.060)	0.052 (0.110)
N	5459	5536	3119	3857	3253	1901
Panel B: Low realizations						
Interview after 18 March	0.033 (0.077)	0.085 (0.085)	0.120*** (0.035)	0.150* (0.083)	0.057 (0.066)	0.071 (0.049)
N	2229	1969	4110	2693	3253	5279

Notes: Dependent variable is concerns about the impacts of climate change. Panels (A) and (B) display the results for high and low realizations of the splitting variable, respectively. They are age in column (1): individuals who are older than 40 and individuals who are of age 40 or younger, educational attainment in column (2): individuals who have at least a general intermediate qualification and individuals that have a lower qualification, risk preference in column (3): individuals who score higher than 5 on the scale for individual willingness to take risks and individuals who score 5 or lower, time preference in column (4): individuals who score higher than 5 on the patience scale and individuals that score 5 or lower, social trust in column (5): individuals who score above the median on the social trust scale and otherwise, and depression in column (6): individuals who are classified of having at least a modest depression and individuals who are not classified of having any depression. The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a linear trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

to all other concerns. A further test of this theory is reported in Table A.6 in the appendix that shows the results of applying our empirical design to the average of the two “green” concerns, *i.e.*, concerns about the impact of climate change and environmental protection, relative to the “grey” or all other concerns (we follow Grandin et al. (2022) to construct this pro-environmental score). As the coefficient in column (1) is close to zero and statistically insignificant, we reject the hypothesis that “green” concerns increase relative to “grey” concerns. If we focus only at one “green” concern at a time (columns (2) and (3)), the coefficient estimates also remain close to zero and statistically insignificant.

Perhaps, the respondents to the SOEP survey had additional concerns, those not captured by pre-formulated items. The survey included, however, an option for *other*, unrestricted concerns (see Figure A.2 in the appendix). We re-code the responses to this other concern as equal to one if respondents gave any answer and zero if respondents indicated they do not have any other concerns.¹⁰ The effect of Merkel’s address on the presence of any other concerns is displayed in column (4) of Table A.6. The coefficient is positive and statistically significant at a 10% level of significance. The point estimate suggests that the address increased the incidence of “Any other concerns” by about 4.7 percentage points. This again is not consistent with the idea of a mental bandwidth in this scenario. This increase seems to be driven by the disproportionate increase of the mentioning of “COVID-19/Coronavirus” as a source of concerns.

6 Conclusion

As the climate crisis worsens and “the window of opportunity to secure a livable and sustainable future for all” closes (IPCC, 2023), policy makers around the world urgently need to know to what extent they can rely on general public to support climate policies and change their behaviors, especially given a range of other unprecedented catastrophes (e.g., the COVID-19 pandemic) that threaten people’s livelihoods.

The German Socio-Economic Panel (SOEP) has asked a representative sample of Germans about their concerns – general and personal economic situation, health, immigration,

¹⁰To warrant anonymity and ease the analysis of the responses, the survey implementing institute typically aggregates responses to categories.

and critically for us, impacts of climate change and environmental protection, among several others – for many decades. We use the SOEP data and Chancellor Angela Merkel’s address to the nation of 18 March 2020 aimed at preparing the German population for the challenges associated with the COVID-19 pandemic that laid ahead as the threshold for a regression discontinuity in time to evaluate the impacts of another catastrophe on climate and environmental concerns. We find that while Merkel’s address resulted in higher economic concerns, the Germans’ concerns with respect to climate and environment were not crowded out. If anything they temporarily slightly increased; and this increase was driven primarily by older, more risk averse individuals, and those with higher social trust. Our (null) result is robust to a battery of robustness checks and in line with evidence from other countries (e.g., United Kingdom (Evensen et al., 2021) and the United States (Berazneva et al., 2023)).

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A Online Appendix

Table A.1: Summary statistics

	Mean	SD	Min	Max	N
<i>Very concerned about:</i>					
The impacts of climate change	0.407	0.491	0.000	1.000	23678
Environmental protection	0.363	0.481	0.000	1.000	23689
The economy in general	0.254	0.435	0.000	1.000	23666
Own economic situation	0.117	0.322	0.000	1.000	23686
Own health	0.149	0.356	0.000	1.000	23680
Maintaining peace	0.389	0.488	0.000	1.000	23680
Immigration to Germany	0.248	0.432	0.000	1.000	23653
Social cohesion in society	0.276	0.447	0.000	1.000	23649
<i>Predetermined characteristics:</i>					
Female	0.530	0.499	0.000	1.000	23762
Year of birth	1969.778	17.550	1921.000	2002.000	23768
Migration background	0.214	0.410	0.000	1.000	23769
High education (2019)	0.727	0.445	0.000	1.000	23055
Household size (2019)	2.717	1.394	1.000	12.000	23769
Any illness (2019)	0.663	0.473	0.000	1.000	21572
<i>Additional indicators:</i>					
Mild depression (2019)	0.271	0.444	0.000	1.000	21616
High willingness to take risks (2019)	0.442	0.497	0.000	1.000	21659
High patience (2019)	0.496	0.500	0.000	1.000	19717
High social trust (2018)	0.481	0.500	0.000	1.000	19575

Notes: Sample is conditioned on full item response on all necessary information. The estimates are unweighted. Data source: SOEPv.37eu.

Table A.2: Test of continuity assumption

	(1)	(2)	(3)	(4)
	Coefficient	Std. error	P-value	Q-value
Female	0.029	0.018	0.102	1.000
Year of birth	0.782	0.797	0.326	1.000
Migration background	0.016	0.021	0.450	1.000
High education (2019)	-0.004	0.020	0.842	1.000
Household size (2019)	-0.033	0.068	0.624	1.000
Any illness (2019)	0.012	0.023	0.598	1.000

Column (5) shows sharpened two-stage q-values. The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel's address and a linear trend in the number of days relative to Merkel's address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

Table A.3: Effects of Angela Merkel’s address on economic concerns, controlling for a quadratic polynomial

	(1)	(2)	(3)
	Raw scale	Concerned at all	Very concerned
<i>Panel A: Concerned about the economy in general</i>			
Interview after 18 March	0.071 (0.056)	0.021 (0.015)	0.021 (0.027)
MSE-optimal bandwidth	23.137	22.658	21.933
Mean of the control group		0.814	0.254
N	9222	8855	8411
<i>Panel B: Concerned about own economic situation</i>			
Interview after 18 March	0.161*** (0.045)	0.070** (0.030)	0.032*** (0.012)
MSE-optimal bandwidth	26.308	27.527	28.94
Mean of the control group		0.561	0.117
N	10258	10700	11191

Notes: The dependent variables are concerns about the economy in general in panel (A) and about own economic situation in panel (B); they are shown as the raw scale, measured in standard deviations of the control group in column (1), as an indicator that is equal to one if an individual has any concerns, and zero otherwise in column (2), and as an indicator that is equal to one if an individual is very concerned, and zero if the individual is somewhat concerned or not concerned at all in column (3). The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a *quadratic* trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

Table A.4: Effects of Angela Merkel’s address on climate and environmental concerns, controlling for a quadratic polynomial

	(1)	(2)	(3)
	Raw scale	Concerned at all	Very concerned
<i>Panel A: Concerned about the impacts of climate change</i>			
Interview after 18 March	0.072** (0.036)	0.010 (0.020)	0.039* (0.022)
MSE-optimal bandwidth	22.576	25.309	23.946
Mean of the control group		0.880	0.407
N	8852	9892	9218
<i>Panel B: Concerned about environmental protection</i>			
Interview after 18 March	0.070 (0.043)	0.000 (0.019)	0.044 (0.037)
MSE-optimal bandwidth	25.247	27.98	25.237
Mean of the control group		0.895	0.363
N	9896	10701	9896

Notes: Dependent variables are concerns about the impacts of climate change in panel (A) and about environmental protection in panel (B); they are shown as the raw scale, measured in standard deviations of the control group in column (1), as an indicator that is equal to one if an individual has any concerns, and zero otherwise in column (2), and as an indicator that is equal to one if an individual is very concerned, and zero if the individual is somewhat concerned or not concerned at all in column (3). The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a *quadratic* trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

Table A.5: Effects of Angela Merkel’s address using data from 2018

	(1)	(2)	(3)	(4)
	Climate impacts	Environmental protection	The economy in general	Own economic situation
<i>Panel A: Controlling for interview mode effects</i>				
Interview after 18 March 2018	0.003 (0.053)	-0.031 (0.034)	0.110 (0.071)	0.025 (0.062)
<i>Panel B: Not controlling for interview mode effects</i>				
Interview after 18 March 2018	-0.001 (0.053)	-0.033 (0.035)	0.113 (0.073)	0.030 (0.068)
N	6847	6849	6848	6851

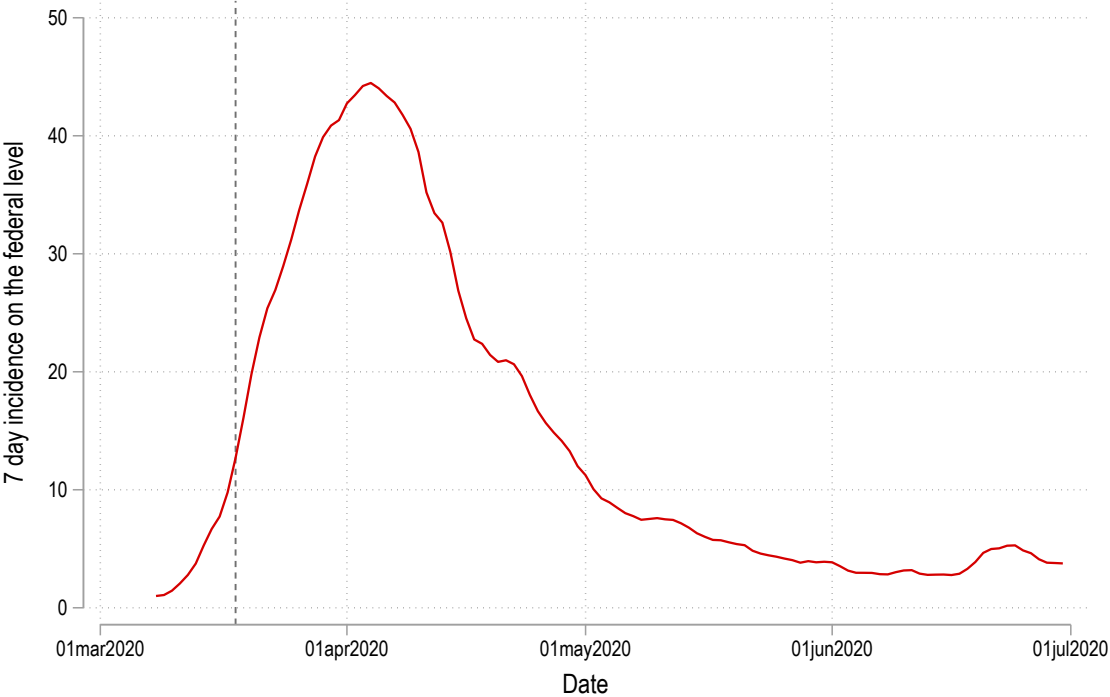
Notes: Placebo regression using the concerns reported in 2018. The dependent variables are concerns, measured in standard deviations of the control group, about the impacts of climate change in column (1), environmental protection in column (2), the economy in general in column (3), and own economic situation in column (4). The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after 18 March 2018 and a linear trend in the number of days relative to this date. In all regressions, we use a 20 days bandwidth, and apply triangular kernel weights. In panel (A) we control for interview mode effects, while in panel (B) we do not. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

Table A.6: The effects of Angela Merkel’s address on climate and environmental concerns relative to other concerns

	(1)	(2)	(3)	(4)
	Both	Climate	Environment	Any other concerns
Interview after 18 March	0.001 (0.015)	0.004 (0.017)	-0.001 (0.014)	0.047* (0.026)
N	7330	7333	7333	7699

Notes: The dependent variables are climate and environmental concerns relative to the average concerns and the presence of any other concerns in column (1), concerns about the impacts of climate change relative to all other concerns in column (2), concerns about environmental protection relative to all other concerns in column (3), and any other concerns in column (4). The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a linear trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators, use a 20 days bandwidth, and apply triangular kernel weights. The standard errors, in parentheses, are clustered on the level of the running variable. A */**/** next to coefficient indicates significance at the 10/5/1% level.

Figure A.1: Time series of seven-day incidence per 100,000 inhabitants of COVID-19 cases on the federal level in Germany



Note: The vertical dashed line indicates the date of Angela Merkel’s address on 18 March 2020.

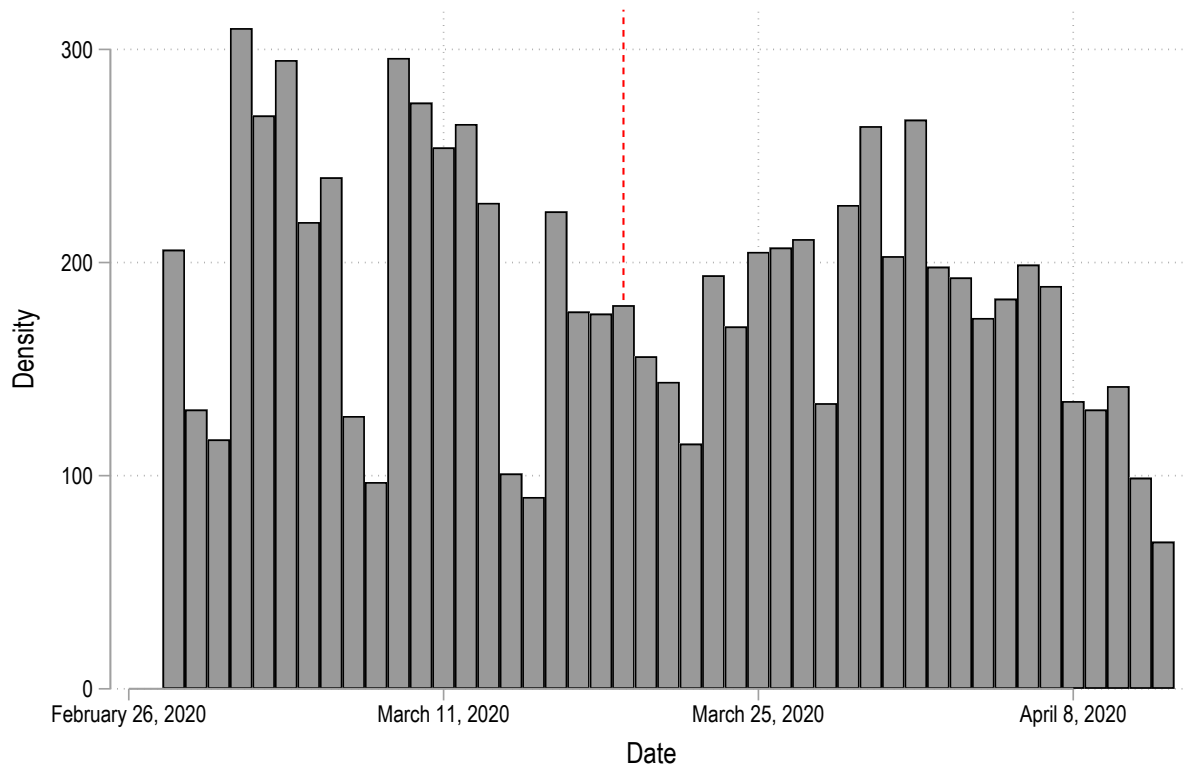
Figure A.2: The concerns question in SOEP 2020

168. How concerned are you about the following issues?

	Very concerned	Somewhat concerned	Not concerned at all
The economy in general.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your own economic situation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your own retirement pension.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The impacts of climate change.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintaining peace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crime in Germany	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social cohesion in society	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immigration to Germany.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hostility towards foreigners or minorities in Germany.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
That you won't be able to keep up with technological progress.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
That your occupational qualifications are being devalued.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
That it is impossible to balance professional and private life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>If you are employed:</i>			
Your job security.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Or what else are you concerned about?			

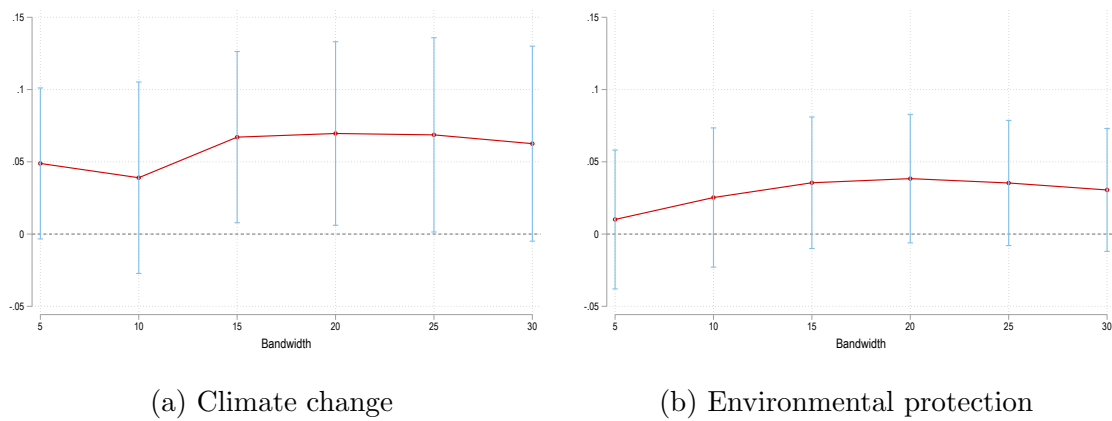
Note: Data source: SOEPv.37eu.

Figure A.3: Empirical distribution of interview dates in 2020



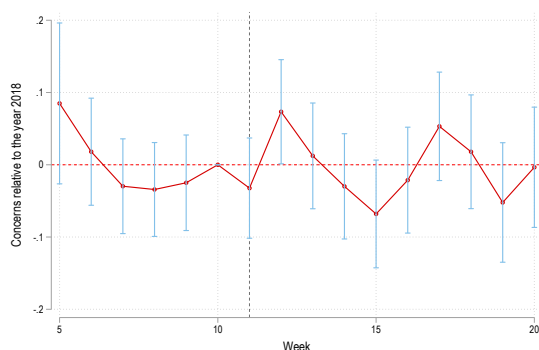
Note: The vertical dashed line indicates the date of Angela Merkel's address on 18 March 2020.

Figure A.4: Robustness of main result to bandwidth choice

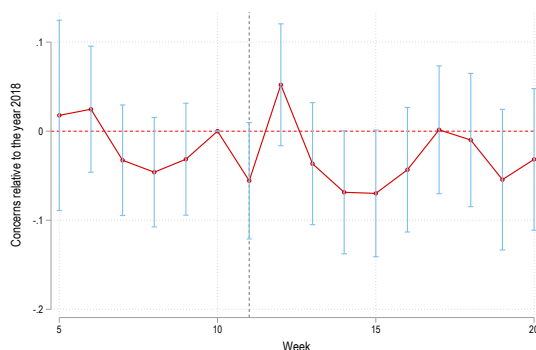


Note: The dependent variable is concerns about the impacts of climate change in panel (a) and about environmental protection in panel (b). The coefficient estimates and 95% confidence intervals (vertical blue lines) are shown for various bandwidth choices when estimation equation (1). The estimates are from a regression of the outcome on an indicator that is equal to one if an individual was interviewed after Angela Merkel’s address and a linear trend in the number of days relative to Merkel’s address. In all regressions, we control for a full set of interview mode indicators and apply triangular kernel weights.

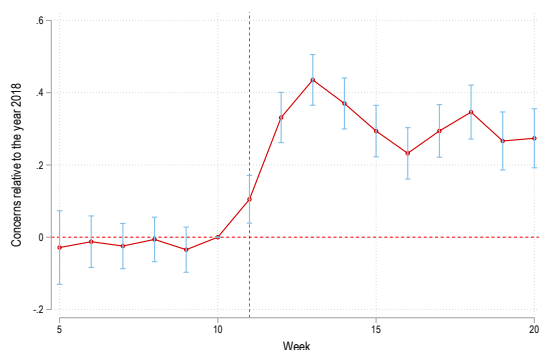
Figure A.5: Event style analysis



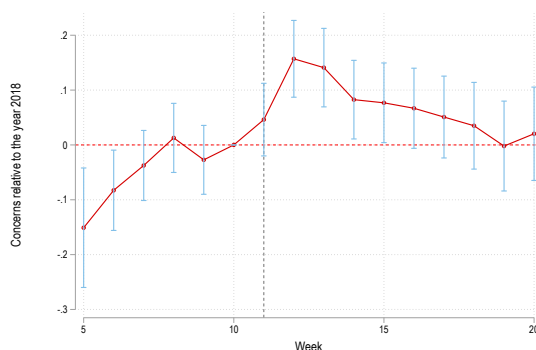
(a) Impacts of climate change



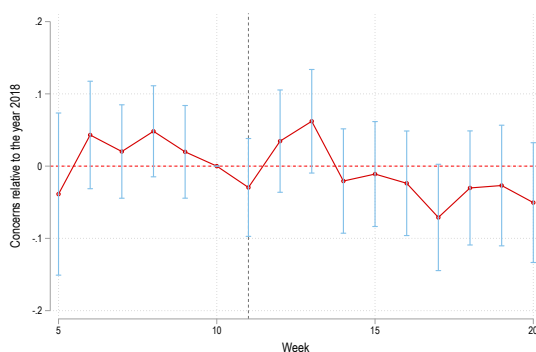
(b) Environmental protection



(c) The economy in general



(d) Own economic situation



(e) Own health

Note: The vertical dashed line indicates the date of Angela Merkel's address on 18 March 2020. Each dot corresponds to the average concerns within each bin of days of the week. Red dots are estimates of the coefficients of the interactions of the indicator equal to one if the survey year is 2020 and a full set of indicators for the week in the respective years. The 95% confidence intervals are based on a piece-wise polynomial of degree three with three smoothness constraints.