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The Appeasement Effect of a UN Climate Summit on the German Public

- Final accepted manuscript-

Published as Advance Online Publication (AOP) by Nature Climate Change, 9.10.2017

DOI: 10.1038/nclimate3409

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Keywords:

climate change, media event, media effects, knowledge gains, Paris climate summit

Acknowledgement:

This paper presents findings from the research project “Down to Earth” directed by M. Brüggemann and funded by the German Research Foundations’ cluster of Excellence “Integrated Climate System Analysis and Prediction” (CliSAP), Universität Hamburg. Further information:

<http://www.climate-matters.hamburg/down-to-earth/>.

The Appeasement Effect of a UN Climate Summit on the German Public

The annual UN climate summits receive intense global media coverage¹⁻³, and as such could engage local publics around the world, stimulate debate and knowledge about climate politics, and, ultimately, mobilize people to combat climate change. Here we show that, in contrast to these hopes, although the German public were exposed to news about the 2015 Paris summit, they did not engage with it in a more active way. Comparing knowledge and attitudes before, during and after the summit using a three-wave online panel survey (quota sample, N = 1121), we find that respondents learnt a few basic facts about the conference but they continue to lack basic background knowledge about climate policy. Trust in global climate policy increased a little, but citizens were less inclined to support a leading role for Germany in climate politics. Moreover, they were not more likely to engage personally in climate protection. These results suggest that this global media event had a modest appeasing rather than mobilizing effect.

The 21st COP (Conference of the Parties of the United Nations Framework Convention on Climate Change) held in Paris from 30th November to 12th December 2015 drew substantial coverage from newspapers around the world that was only topped by the media attention paid to the epic failure of the climate summit in Copenhagen in 2009⁴⁻⁶. Intense media coverage of the Paris summit could be expected, as it was the biggest COP ever, with more than 30,000 official participants⁷, and it resulted in a global agreement to fight climate change.

The Paris summit as an outstanding COP summit that brought a global climate agreement may thus be understood as a global media event. This concept implies an extraordinary focus of media attention across national borders but also includes the assumption that publics at large engage with the event. In the original formulation of the concept, this would imply a ritual function: people celebrate and positively identify with, in this case, global climate politics⁸. More recent approaches also ascribe a discursive dimension to media events, expecting people to engage in a political and critical debate^{2,9-11}. Thus, one might hope that a climate summit could enhance understanding of climate politics or mobilize people for political and personal action.

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Past research has analysed climate summits mainly in terms of the content of media coverage and the production of this content through the interaction of non-governmental organisations, journalists and politicians^{12–14}. The question of whether climate summits as media events actually get audiences involved has not yet been researched. Our study therefore explores whether climate summits serve as transnational political media events that engage national publics in a way that affects their knowledge and attitudes towards climate politics.

A basis for engagement with summit news is taking notice of the climate summit through media reporting. More active communicative involvement includes seeking information or talking about the conference, which arguably would make stronger climate summit effects more likely¹⁵.

Normative theories of the media expect journalists to provide critical scrutiny and background knowledge on politics so as to enable audiences to participate actively in political life (see Supplementary Discussion 1). Yet, empirical studies find that media coverage does not automatically enhance understanding and mobilize people. Depending on the content, it may also disengage and confuse them^{19, 20}. Reporting on climate change has been criticized for lacking to provide the necessary context for enhancing understanding²¹. Also, past research suggests that media exposure to climate coverage is far more likely to increase climate change awareness and knowledge than to change behavioural intentions, let alone to mobilize for climate protection^{20, 22–24}.

So far, there is a lack of studies that examine the effects of intense media coverage of a climate-related event in a real-world setting such as a climate conference, rather than in an experimental setting²⁵. Existing survey studies mostly look at correlations (e.g. between media use and knowledge, attitudes etc.) at one point in time rather than exploring whether an intensely covered event made a difference^{2, 20, 22–24}.

We take Germany as a likely case for intensive audience engagement with the climate summit, as many German journalists attended the conference and the national government is highly engaged in global climate governance as part of the group of “ambitious” countries. The green movement is also well established in German parliaments. Finally, news value research has identified cultural and geographical proximity as one of the most powerful

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predictors of news coverage²⁶, and the summit took place in a neighbouring country with close cultural ties to Germany. For all of these reasons, the German case is likely to be characterized by intense media coverage and audience engagement with the climate summit. However, the results of a three-wave online panel survey (two weeks before, during and four weeks after COP 21, see Methods) show that the climate summit had no or a fairly limited public impact. This limited effect is not due to an absence of media coverage reaching the audience.

Communicative Engagement with the Climate Conference

Most respondents noticed coverage of the climate summit at least once a week, mostly on television (see Figure 1). Almost every second respondent remembered hearing about the COP on the radio, every third had noticed coverage in a newspaper. Online newspapers were mentioned less often, and social networks provided even less news on the climate summit. Almost one in four respondents did not notice coverage of the COP in any of these media during the summit.

While most of the population reports being exposed to media coverage on the summit, much less people engaged more actively with the summit by talking about it with family, friends or colleagues (see Figure 2). Also, lower shares of respondents actively searched for information or commented online. Almost 70 percent of all respondents from the survey did not engage with information from the climate summit in any of these more active ways: being exposed to climate summit news did not translate into communicative engagement.

Impact on Knowledge and Attitudes

We explore potential changes in attitudes and knowledge along six dimensions. The first dimension is climate change awareness, a concept that includes both the cognitive element of knowing that anthropogenic climate change exists and the affective element of feeling that it constitutes a relevant problem^{16–18}. The second and third dimensions explore knowledge gains on event-related information about the Paris summit and on climate policy in general. We explored the understanding of basic terms and contexts (e.g. mitigation, different levels of per capita emissions in different countries, 2-degree target) as this is a precondition for understanding the negotiations and results of COP21. Further dimensions

concern different kinds of attitudes related to climate policy: watching or reading about climate politics might affect beliefs in the efficacy of action at the individual, national or global level. Related to these beliefs are attributions of responsibility to act directed to either the national government or to other countries. The final dimension examines intentions to personally take action. Such actions encompass becoming more active as a citizen (political action) or as a consumer through consumption choices. Thus, analytically, we consider a range of public responses from merely taking note of the summit to fully engaging with the challenge of climate change (see Methods and Supplementary Tables 1-12 for a full description of the measures and descriptive results).

Significant changes over time along the above mentioned five dimensions were identified by calculating *t*-tests for paired samples. Because large samples increase the Type I error rate, and thus increase the chances of achieving statistical significance, we only mention and interpret those changes that are both highly significant ($p < .001$) and also account for a change of at least 4 to 5 percent.

Following the modest level of active communicative engagement with the climate summit, its impact on knowledge and attitudes was fairly limited as well. We find stable levels of climate change awareness. Across all three waves of the survey, only nine percent of respondents doubted the scientific consensus (see Table 1), a much lower share than, for example, in the United States²⁷. More than two-thirds reported that climate change is an important problem, yet only 30 percent believe it is very important, in line with other surveys in Germany that show climate change is recognized as a relevant problem, but not of very high personal concern²⁸. These basic attitudes seem settled already before the summit and not subject to influence from the subsequent coverage. This is likely to be different when we look at climate policy, where people still are confronted with new ideas, information and arguments.

Public knowledge of climate politics is fairly limited, and so are learning effects during the summit. We asked seven multiple-choice questions of varying levels of difficulty, on different aspects of climate policy. A closer look at the different questions reveals that learning effects only concern items immediately related to the event while not much background knowledge is acquired.

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Table 1: Comparing knowledge and attitudes before, during and after the summit

Dimension		Scale	Number of items	T1 in %	T2 in %	T3 in %
Climate Change Awareness	adhering to the scientific consensus (i)	5-point Likert	4	62%	61%	64%
	personal relevance of topic	5-point Likert	1	67%	67%	65%
General Knowledge about Climate Politics	Kyoto protocol	correct/incorrect	1	56%	58%	57%
	worldwide emission reductions	correct/incorrect	1	20%	20%	20%
	emission trading	correct/incorrect	1	65%	67%	67%
	mitigation	correct/incorrect	1	48%	49%	50%
	lowest CO ₂ emissions per capita	correct/incorrect	1	11%	13%	14%
Event-Related Knowledge	key objective of COP 21	correct/incorrect	1	28%	36%	36%
	2-degree limit	correct/incorrect	1	14%	21%	21%
Efficacy of Actions	personal self-efficacy	5-point Likert	1	47%	45%	44%
	collective efficacy	5-point Likert	1	41%	41%	40%
	efficacy of global climate change agreement	5-point Likert	1	25%	26%	30%
Attribution of Responsibility	industrial nations are responsible	5-point Likert	1	73%	71%	72%
	emerging countries are responsible	5-point Likert	1	86%	84%	85%
	Germany should play a leading role	5-point Likert	1	61%	56%	56%
Behavioural Intentions	future political engagement (i)	5-point (bipolar)	2	28%	24%	27%
	future food choices	5-point (bipolar)	1	49%	46%	51%
	future mobility	5-point (bipolar)	1	47%	45%	47%

Notes: (i) stands for “index”; for the wording of the questions and scales see Supplementary Tables 3-12. Percentages show the share of responses that agreed “somewhat” or “strongly”. For knowledge questions, the table shows the share of correct responses.

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In order to evaluate climate policy making, citizens arguably should have a rough knowledge of different levels and trends of emitting CO₂. Yet, a stable share of around 80 percent of the respondents did not know that humanity has so far failed to reduce global average emissions. Actual levels of knowledge may be even lower, as multiple choice questions can be answered correctly by chance. Also, by asking the same question three times, our survey might have encouraged learning effects.

Table 2 (see also Supplementary Table 13 for additional statistical measures) shows significant learning effects on information that is very closely tied to the climate summit as an event, such as the key objective of the conference, and the explanation of the two-degree limit – with the share of correct answers increasing for both questions by seven percentage points. This finding shows that people do learn basic event-related information, yet their knowledge with regards to relevant background facts remains limited (for a discussion of different learning effects between media users and non-users, see Supplementary Discussion 2, Supplementary Figures 1-3, Supplementary Tables 15,16). This learning pattern is in line with studies on political knowledge²⁹.

Turning towards attitudes with regards to climate policy, beliefs in the efficacy of action differ depending on whether they apply to the personal or the political level. People rather believe that they can personally make a difference (above 40 percent, see Table 1) than in the efficacy of a global climate agreement (below 30 percent). When allocating responsibility at the national level, respondents rather stress the responsibility of other countries, specifically emerging economies, to join climate protection measures than demanding a leading role for their own country, Germany. We found consistently even less willingness to take personal action than to attribute responsibility at the collective, national or global level. There is also a striking difference between intentions to act politically and as a consumer: while almost half of the participants expressed an intention to choose more climate-friendly food and transportation, only a quarter wanted to engage with climate change politically, consistent with previous literature³⁰.

Table 2: Changes in knowledge and attitudes

Dimension		T1 M (SD)	T2 M (SD)	T3 M (SD)	Changes (Δ T1 → T2)	Changes (Δ T2 → T3)	Changes (Δ T1 → T3)
Climate Change Awareness	adhering to the scientific consensus (i)	3.8 (0.8)	3.8 (0.9)	3.8 (0.9)	0.0	0.0	0.0
	personal relevance of topic	3.8 (1.0)	3.8 (1.0)	3.8 (1.0)	0.0	0.0	0.0
General Knowledge about Climate Politics	Kyoto protocol	56.0%	58.2%	57.4%	+2.2%	-0.6%	+1.4%
	Worldwide emission reductions	19.8%	19.8%	19.7%	0.0%	-0.1%	-0.1%
	emission trading	65.4%	66.6%	67.3%	+1.2%	+0.7%	+1.9%
	mitigation	48.0%	49.5%	50.0%	+1.5%	+0.5%	+2.0%
	lowest CO ₂ emissions per capita	11.0%	13.0%	14.3%	+2.0%	+1.3%	+3.3%**
Event-Related Knowledge	key objective of COP 21	28.4%	36.1%	35.6%	+7.7%***	-0.5%	+7.2%***
	2-degree limit	13.9%	21.1%	20.6%	+7.2%***	-0.5%	+6.7%***
Efficacy of Actions	personal self-efficacy	3.4 (1.1)	3.4 (1.1)	3.3 (1.1)	-0.1*	0.0	-0.1**
	collective efficacy	3.2 (1.1)	3.2 (1.1)	3.2 (1.1)	0.0	0.0	0.0
	efficacy of global climate change agreement	2.9 (1.1)	2.9 (1.0)	3.0 (1.0)	0.0	+0.1***	+0.2***
Attribution of Responsibility	industrial nations are responsible	4.1 (1.0)	4.0 (1.0)	4.0 (1.0)	-0.1*	0.0	-0.1*
	emerging countries are responsible	4.5 (0.9)	4.5 (0.9)	4.5 (0.9)	0.0	0.0	0.0
	Germany should play a leading role	3.7 (1.1)	3.6 (1.1)	3.6 (1.1)	-0.1***	0.0	-0.1***
Behavioural Intentions	future political engagement (i)	2.7 (1.1)	2.5 (1.1)	2.6 (1.2)	-0.1***	+0.1**	-0.1
	future food choices	3.4 (1.2)	3.3 (1.2)	3.3 (1.2)	-0.1*	+0.1*	0.0
	future mobility	3.4 (1.3)	3.3 (1.2)	3.3 (1.3)	-0.1*	0.0	-0.1*

Notes: (i) stands for “index”; *** $p < .001$, ** $p < .01$, * $p < .05$. For the t-tests, $n_{\min} = 1023$, $n_{\max} = 1121$. For exact p -values, t -values, N and df , see Supplementary Table 13.

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Changes of attitudes are small and can be detected only for a few variables (for a measure of effect sizes see Supplementary Table 13): we find an increase in the belief that global climate agreements are effective at fighting climate change, probably due to the fact that the Paris conference actually resulted in a global agreement. At the same time, a pioneer role of Germany receives less average support after the summit and we see that the summit has a temporary discouraging effect on intentions to take personal political action against climate change (Wave 2 as compared to Wave 1).

Discussion

Two overarching findings evolve from this analysis. First, national audiences were reached by media coverage about the summit and this does have a modest effect: knowledge very closely related to the summit has increased slightly, as has belief in the efficacy of global climate agreements. Yet, second, a large majority of the national audience did not engage more actively with climate news. They did not learn background knowledge on climate politics. The summit reduced the feeling that one's own country (in this case: Germany) should take a leading role and it did not encourage personal climate-friendly engagement. In short, the summit rather had an appeasing than mobilizing effect, decreasing rather than increasing the motivation to take the lead as a country, as a citizen or as a consumer.

From an analytical perspective, these findings are very much in line with the original conception of media events as celebrations that affirm the status quo⁸, in our case the belief in a global climate agreement. From a normative perspective of public sphere theory that values citizens' communicative engagement in democracy, these findings are worrying: People are appeased rather than encouraged to take action and put pressure on their national government to take a leading role in climate protection. Citizens seem satisfied that a global deal has been negotiated and seem to infer that no increased engagement on their own part is necessary. Yet, given that the Paris agreement is based on voluntary pledges from governments that still await implementation, civic engagement would be needed more than ever.

A number of questions await careful explanation in future research. Is the lack of active engagement with climate policy news and the absence of learning relevant background knowledge a failure of journalism to provide content that engages the public and also

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provides the necessary contextual information? What other factors can explain the appeasement effect on national audiences? And, how do different segments of the audience vary in this respect? Answering these questions will not only advance our understanding of the impact of transnational media events but also generate conclusions about how to better involve citizens in the global debate on climate change.

References

1. Schmidt, A., Ivanova, A. & Schäfer, M.S. Media Attention for Climate Change Around the World. A Comparative Analysis of Newspaper Coverage in 27 countries. *Global Environmental Change* **23**, 1233–1248 (2013).
2. Liu, X., Lindquist, E. & Vedlitz, A. Explaining Media and Congressional Attention to Global Climate Change, 1969—2005: An Empirical Test of Agenda-Setting Theory. *Political Research Quarterly* **64**, 405–419 (2011).
3. Wessler, H., Wozniak, A., Hofer, L. & Lück, J. Global Multimodal News Frames on Climate Change. A Comparison of Five Democracies around the World. *The International Journal of Press/Politics* **21**, 423–445 (2016).
4. Painter, J. in *Something Old, Something New: Digital Media and the Coverage of Climate Change*, edited by J. Painter, M.C. Erviti, *et al.* (Reuters Institute for the Study of Journalism, Oxford, 2016), pp. 37-46.
5. Schäfer, M.S., Kristiansen, S. & Ouakrat, A. in *Something Old, Something New: Digital Media and the Coverage of Climate Change*, edited by J. Painter, M.C. Erviti, *et al.* (Reuters Institute for the Study of Journalism, Oxford, 2016), pp. 47–62.
6. Boykoff, M. *et al.* World Newspaper Coverage of Climate Change or Global Warming, 2004-2016. Available at http://sciencepolicy.colorado.edu/media_coverage (2016).
7. UNFCCC. List of participants. Available at http://unfccc.int/documentation/documents/advanced_search/items/6911.php?preref=600008750 (2015).
8. Dayan, D. & Katz, E. *Media Events. The Live Broadcasting of History* (Harvard University, London, 1992).
9. Kunelius, R. & Eide, E. in *Media and Global Climate Knowledge: Journalism and the IPCC*, edited by R. Kunelius, E. Eide, M. Tegelberg & D. Yagodin (Palgrave, New York, 2016), pp. 1–32.
10. N. Couldry, A. Hepp & F. Krotz eds. *Media Events in a Global Age* (Routledge, London / New York, 2009).
11. Brüggemann, M. & Wessler, H. Transnational Communication as Deliberation, Ritual, and Strategy. *Communication Theory* **24**, 394–414 (2014).
12. Lück, J., Wozniak, A. & Wessler, H. Networks of Coproduction: How Journalists and Environmental NGOs Create Common Interpretations of the UN Climate Change Conferences. *The International Journal of Press/Politics* **21**, 25–47 (2016).
13. Kunelius, R. & Eide, E. Moment of Hope, Mode of Realism: On the Dynamics of a Transnational Journalistic Field During UN Climate Change Summits. *International Journal of Communication* **6**, 266–285 (2012).

Brüggemann, Michael; De Silva-Schmidt, Fenja; Hoppe, Imke; Arlt, Dorothee; Schmitt, Josephine B. (2017): The appeasement effect of a United Nations climate summit on the German public. In *Nature Climate Change* 7 (11), pp. 783–787. Available online at <https://www.nature.com/articles/nclimate3409.pdf>.

14. Adolphsen, M. & Lück, J. Non-Routine Interactions Behind the Scenes of a Global Media Event: How Journalists and Political PR Professionals Coproduced the 2010 UN Climate Conference in Cancún. In H. Wessler, & S. Averbek-Lietz (Eds.) *Medien & Kommunikationswissenschaft, Sonderband Nr.2 „Grenzüberschreitende Medienkommunikation“*, 141–158 (2012).
15. Roser-Renouf, C., Maibach, E.W., Leiserowitz, A. & Zhao, X. The Genesis of Climate Change Activism. From Key Beliefs to Political Action. *Climatic Change* **125**, 163–178 (2014).
16. Cabecinhas, R., Lázaro, A. & Carvalho, A. Media Uses and Social Representations of Climate Change. *Communicating Climate Change: Discourses, Mediations and Perceptions*, 170–189 (2008).
17. Binder, A.R. Routes to Attention or Shortcuts to Apathy? Exploring Domain-Specific Communication Pathways and Their Implications for Public Perceptions of Controversial Science. *Science Communication* **32**, 383–411 (2010).
18. Brulle, R.J., Carmichael, J. & Jenkins, J.C. Shifting Public Opinion on Climate Change: An Empirical Assessment of Factors Influencing Concern Over Climate Change in the U.S., 2002–2010. *Climatic Change* **114**, 169–188 (2012).
19. O’Neill, S. & Nicholson-Cole, S. “Fear Won’t Do It”: Promoting Positive Engagement With Climate Change Through Visual and Iconic Representations. *Science Communication* **30**, 355–379 (2009).
20. Arlt, D., Hoppe, I. & Wolling, J. Climate Change and Media Usage. Effects on Problem Awareness and Behavioural Intentions. *International Communication Gazette* **73**, 45–63 (2011).
21. Boykoff, M. T.: *Who Speaks for the Climate? Making Sense of Media Reporting on Climate Change*. Cambridge: Cambridge University Press (2011).
22. Stamm, K.R., Clark, F. & Eblacas, P.R. Mass Communication and Public Understanding of Environmental Problems: the Case of Global Warming. *Public Understanding of Science* **9**, 219–237 (2000).
23. Taddicken, M. Climate Change From the User’s Perspective. The Impact of Mass Media and Internet Use and Individual and Moderating Variables on Knowledge and Attitudes. *Journal of Media Psychology* **25**, 39–52 (2013).
24. Feldman, L., Maibach, E.W., Roser-Renouf, C. & Leiserowitz, A. Climate on Cable. The Nature and Impact of Global Warming Coverage on Fox News, CNN, and MSNBC. *The International Journal of Press/Politics* **17**, 3–31 (2012).
25. Schäfer, M.S. in *International Encyclopedia of the Social & Behavioral Sciences*, edited by J. Wright (Elsevier, Oxford, 2015), pp. 853–859.
26. Wu, D.H. Systemic Determinants of International News Coverage. A Comparison of 38 Countries. *Journal of Communication* **50**, 110–130 (2000).
27. Leiserowitz, A., Maibach, E., Roser-Renouf, C., Feinberg, G. & Rosenthal, S. Climate Change in the American Mind. Available at <http://climatecommunication.yale.edu/wp-content/uploads/2016/06/Climate-Change-American-Mind-March-2016-FINAL.pdf> (2016).
28. Stokes, B., Wike, R. & Carle, J. Global Concern about Climate Change, Broad Support for Limiting Emissions. Available at <http://www.pewglobal.org/2015/11/05/1-concern-about-climate-change-and-its-consequences/> (2015).
29. Price, V. in *Measures of political attitudes*, edited by J.P. Robinson, P.R. Shaver & L.S. Wrightsman (Academic Press, San Diego, 1999), pp. 591–639.
30. Whitmarsh, L. & O’Neill, S. Green Identity, Green Living? The Role of Pro-Environmental Self-Identity in Determining Consistency Across Diverse Pro-Environmental Behaviours. *Journal of Environmental Psychology* **30**, 305–314 (2010).

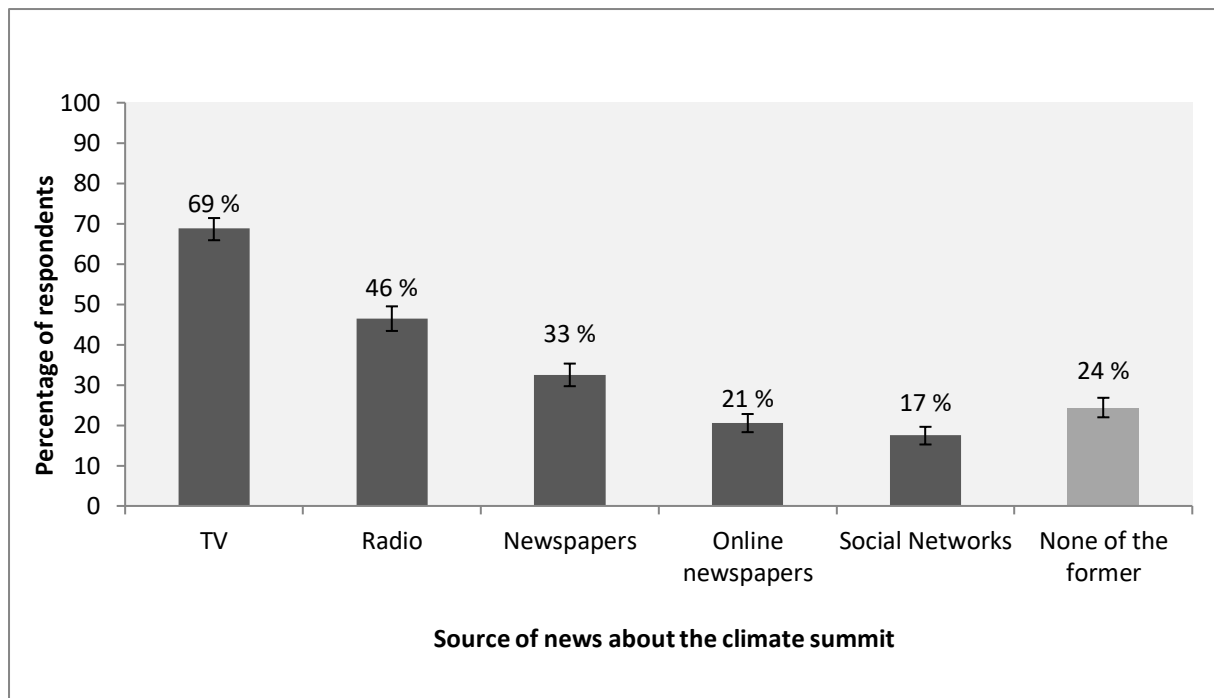


Figure 1: Source of news about the climate summit. The percentage of respondents who reported receiving news about the climate summit at least once a week from each media source based on the sum up the scale points “once a week” to “several times daily”, asked during Wave 2 ($n = 1121$). Error bars show 95% confidence intervals: $P \pm 1,96 * \sqrt{(P*(100-P)/n)}$, where P is the respective percentage value und 1,96 is the z-value from the standard normal distribution for the desired confidence level.

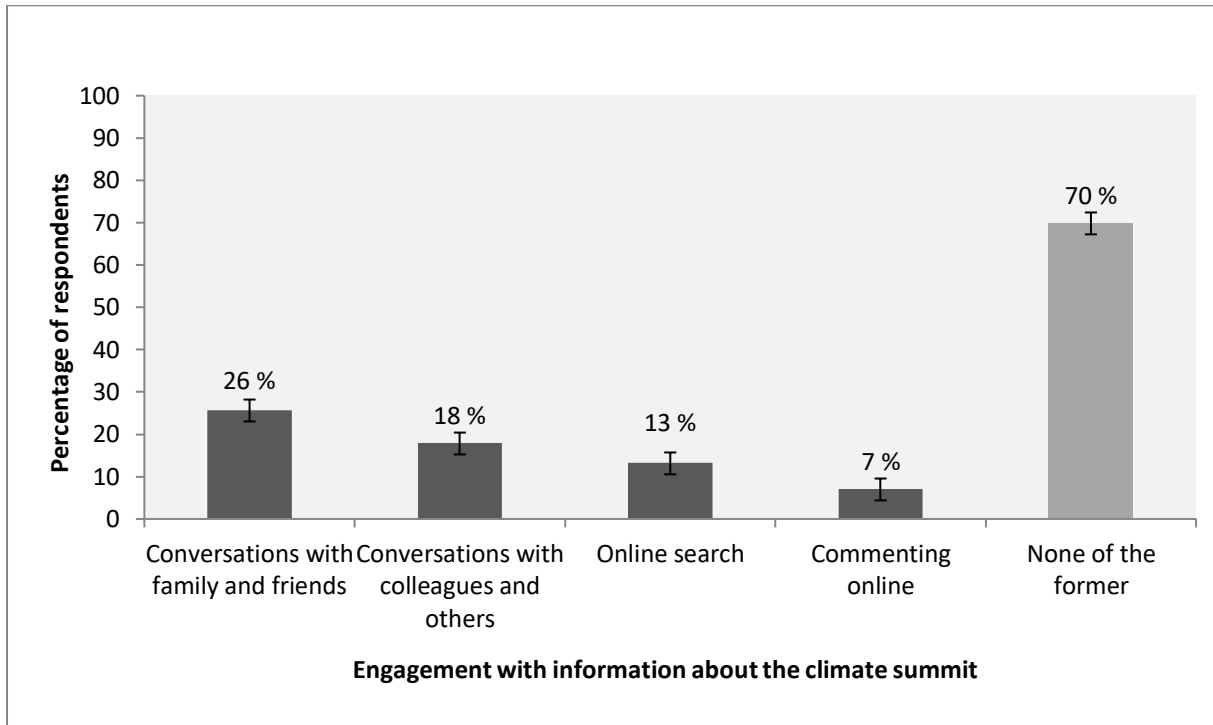


Figure 2: Engagement with information about the climate summit. The percentage of respondents who reported engaging with news about the climate summit at least once a week for each avenue of engagement based on the sum up the scale points “once a week” to “several times daily”, asked during Wave 2 ($n = 1121$). Error bars show 95% confidence intervals (as in Figure 1).

METHODS

Panel Survey. We conducted a three-wave online panel survey, two weeks before, during and four weeks after the UN climate conference 2015 (COP 21). The respondents were recruited via an online access panel of the external panel provider *respondi*, which is certified according to Global ISO 26362, a member of the European Society for Opinion and Market Research and of the German Society for Online Research (DGOF). The online access panel comprises 100,000 respondents in Germany, from which participants were randomly invited to participate in the survey. In a second step, the first-wave sample was quoted for age and sex, federal state and formal education to represent the distribution of these variables within the German population aged 18–69. The final sample comprised $n = 1121$ participants who participated in all three surveys. A detailed description of the time frame, number of respondents and sociodemographic data of each wave are presented in Supplementary Table 1.

Testing for educational bias. Online access panels tend to suffer from educational bias³¹. To test for this, we compared our data to the micro-census data of the German Federal Bureau of Statistics for 2015 (see Supplementary Table 2). Small differences can be explained by the fact that our survey included people aged 18 and older while the micro-census data include adolescents from 15 years. Consequently, our data included less respondents without a school diploma and a slightly higher share in all other educational groups. Yet, particularly in the two most educated groups, we find almost no deviations from the official micro-census data. In the following, we will provide an overview of the measures used in the survey. The concrete wording of the survey questions is provided in the Supplementary Tables 2-12.

Taking note of news from COP 21. In the second wave of the panel survey, which took place during the climate summit, we asked the respondents how frequently they had noticed news about COP 21 in five media sources (television news and informational programs, radio, printed newspapers and magazines, online newspapers and social networks) on a seven-point scale ranging from 0 (“never”) to 6 (“several times daily”).

Engagement with information about COP 21. In addition to the passive reception of news about the climate conference, we were also interested in whether the respondents engaged actively with information about the COP 21 – either in personal discussions with family, friends and colleagues, or online in the form of searching for further information or writing online comments. These four items were also measured using a seven-point scale from 0 (“never”) to 6 (“several times daily”).

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The following measures were included in all three waves in order to map changes on six dimensions: climate change awareness, general knowledge about climate politics, event-related knowledge, efficacy of actions, attribution of responsibility, and behavioural intentions.

Climate change awareness. The concept of climate change awareness is an established idea in social science that summarizes two kinds of attitudes towards climate change. It comprises a cognitive element (knowing and accepting that anthropogenic climate change exists), and an affective element (feeling that it constitutes a relevant problem)^{32, 33–35}. Thus, our study contains two different measures for awareness: Adhering to the scientific consensus and personal relevance of climate change. Adherence to scientific consensus was measured using items that covered the main points of the Intergovernmental Panel on Climate Change consensus: the existence of a global warming trend, its anthropogenicity, its potentially serious consequences – and the claim that scientific statements are true. The first three items were adapted from a study on climate scepticism among journalists³⁶. Agreement with the scientific consensus was measured from 1 (“strongly disagree”) to 5 (“strongly agree”). It was possible to decline to answer a question. For each wave, all four items were combined into a mean index (Cronbach’s $\alpha = 0.78$). Personal relevance of climate change was assessed with one item in which respondents were asked to evaluate the personal importance of the issue on a five-point scale from 1 (“not important at all”) to 5 (“very important”).

Knowledge. We measure knowledge with regards to two dimensions that are both relevant for understanding the discussions around COP 21. One dimension concerns basic background knowledge, the other dimension concerns knowledge that is more closely related to the specific summit. Since current studies of climate-related knowledge do not cover knowledge regarding climate politics^{37–40}, the items were only partly based on extant literature. Two items (concerning the Kyoto Protocol and emissions trading) were modified from a study on political knowledge⁴¹, the other items were developed for the current study. We consider our knowledge test an explorative measure since we cover aspects of climate policy that have not yet been analysed in previous surveys. The questions were designed to vary in their level of difficulty and include event-specific information (such as the aim of the conference) as well as important background knowledge that is necessary to understand climate politics. The questions do not aspire to cover all relevant aspects of the field. The knowledge test was qualitatively pre-tested by a group of graduate students of journalism and validated by an independent expert from the Climate Service Center Germany of the Helmholtz-Zentrum Geesthacht. Each item provided four alternative answers plus the option to respond with “don’t know”. The items and answer options were rotated randomly. For the analysis

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presented in this paper, correct answers were coded as 1, while incorrect and “don’t know” answers were coded as 0.

General knowledge about climate politics. We measured people’s general factual knowledge using five multiple choice items concerning the Kyoto Protocol, the development of CO₂ emissions over the last two decades, emissions trading, mitigation, and different countries’ per capita CO₂ emissions. These items are important, as citizens arguably should have a rough knowledge of different levels and trends of emitting CO₂ in different countries in order to assess the respective roles assigned to e.g. emerging economies and Western industrialized countries. Also, people need to understand terms like mitigation or the Kyoto protocol in order to make sense of the debate around COP 21.

Event-related knowledge. We measured the respondents’ factual knowledge closely related to the political event COP 21 with two multiple choice items asking for the main goal of the summit and for the correct explication of the two-degree target. The latter was one of the main issues during the Paris conference and thus a recurring topic in media reporting on COP 21. The questions were posed in the same way as the general knowledge items.

Belief in efficacy of actions. Confidence in personal and collective efficacy as well as belief in the efficacy of a global climate agreement were each measured with one item^{42, 43}. Agreement was measured on a five-point scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”), including the option not to specify an answer.

Attribution of responsibility. We assessed who the respondents saw as responsible for combatting climate change using three items. Two items were newly developed; the item referring to Germany’s national responsibility was taken from a previous survey⁴⁴. The items measured agreement with the responsibility of emerging countries, industrial nations and Germany to serve as a leading actor, again on a five-point scale with the option to refuse an answer.

Behavioural intentions. People’s intentions to take personal responsibility in the form of future actions against climate change were measured for political actions and consumer choices: one item covered climate-friendly food choices, another item asked about climate-friendly transportation (similar items are used e.g. in the Eurobarometer⁴⁵) and two items related to engaging politically in climate matters (through online petitions or engaging in environmental grassroots initiatives; both items have been tested in a previous study⁴⁶). The five-point scale ranged from 1 (“I would not like to do this in the future”) to 5 (“I would like to do more of this in the future”). Both items regarding the willingness to participate in future political engagement were combined into a mean index (Cronbach’s $\alpha = 0.74$). The other behavioural intentions were treated as single items.

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Ethics statement. The study was conducted in compliance with the Guidelines for Safeguarding Good Scientific Practice at Universität Hamburg. Informed consent was obtained from all respondents in the survey.

Data availability. The full survey questionnaire and further information about the study is available at URL: www.climate matters.hamburg. The datasets generated during the current study are available to the scientific community from the corresponding author upon reasonable request.

Methods' References

31. Hays, R.D., Liu, H. & Kapteyn, A. Use of Internet panels to conduct surveys. *Behavior research methods* **47**, 685–690 (2015).
32. Arlt, D., Hoppe, I. & Wolling, J. Climate change and media usage. Effects on problem awareness and behavioural intentions. *International Communication Gazette* **73**, 45–63 (2011).
33. Cabecinhas, R., Lázaro, A. & Carvalho, A. Media uses and social representations of climate change. *Communicating Climate Change: Discourses, Mediations and Perceptions*, 170–189 (2008).
34. Zhao, X. Media Use and Global Warming Perceptions. A Snapshot of the Reinforcing Spirals. *Communication Research* **36**, 698–723 (2009).
35. Binder, A.R. Routes to Attention or Shortcuts to Apathy? Exploring Domain-Specific Communication Pathways and Their Implications for Public Perceptions of Controversial Science. *Science Communication* **32**, 383–411 (2010).
36. Brüggemann, M. & Engesser, S. Between Consensus and Denial: Climate Journalists as Interpretive Community. *Science Communication* **36**, 399–427 (2014).
37. Tobler, C., Visschers, V.H.M. & Siegrist, M. Consumers' knowledge about climate change. *Climatic Change* **114**, 189–209 (2012).
38. Shi, J., Visschers, V.H.M., Siegrist, M. & Arvai, J. Knowledge as a driver of public perceptions about climate change reassessed. *Nature Climate Change* **6**, 759–762 (2016).
39. Sundblad, E.-L., Biel, A. & Garling, T. Knowledge and Confidence in Knowledge About Climate Change Among Experts, Journalists, Politicians, and Laypersons. *Environment and Behavior* **41**, 281–302 (2009).
40. Reynolds, T.W., Bostrom, A., Read, D. & Morgan, M.G. Now What Do People Know About Global Climate Change? Survey Studies of Educated Laypeople. *Risk Analysis* **30**, 1520–1538 (2010).
41. Trepte, S., Loy, L.S., Schmitt, J.B. & Otto, S. Hohenheimer Inventar zum Politikwissen (HIP): Konstruktion und Skalierung. *Diagnostica*, 10.1026/0012-1924/a000180 (2017).
42. Kellstedt, P.M., Zahran, S. & Vedlitz, A. Personal efficacy, the information environment, and attitudes toward global warming and climate change in the United States. *Risk Analysis* **28**, 113–126 (2008).

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43. Chen, M.-F. Self-efficacy or collective efficacy within the cognitive theory of stress model. Which more effectively explains people's self-reported pro-environmental behavior? *Journal of Environmental Psychology* **42**, 66–75 (2015).
44. Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit. Umweltbewusstsein in Deutschland 2008. Ergebnisse einer repräsentativen Bevölkerungsumfrage (2008).
45. Europäische Kommission. *Eurobarometer 72.1* (Aug-Sep 2009) (2012).
46. Hoppe, I. Klimaschutz als Medienwirkung. Eine kommunikationswissenschaftliche Studie zur Konzeption, Rezeption und Wirkung eines Online-Spiels zum Stromsparen (Universitätsverlag Ilmenau, Ilmenau, 2016).