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Researching and Shaping Climate Futures

**J. Baehr, J. Behrens, L. Borchert, M. Brüggemann,
L. Kutzbach, K. Linscott, A. Oberg**

7th course day – May 28th, 2026

Moderator: Michael Brüggemann

Course coordination: Michael Brüggemann, Lars Kutzbach, Kat Linscott

Contact: Kat Linscott (katherine.linscott@studium.uni-hamburg.de)



Today's Schedule

- **Q & A Poster content and design** *30 min*
- **Communicating climate futures + Discussion** *45 min*
- **Homework # 6** *15 min*



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Q & A: Poster Content and Design

Lars Kutzbach & Kat Linscott



Poster Design Refresher

What are the core elements of good poster?

What to keep in mind when making your poster?

- In the content?
- In the structure?
- In the visual design?

Poster Design Refresher

Tell a clear and compelling story

- Don't data dump. Find a story and guide your readers smoothly from start to end.
- Flow > details: Sketch structure and experiment before jumping into design.
- Know your audience: keep it easy to scan and audience-appropriate

Effective and accessible design

- Requirements: A0 size, with proper citations & logos (UHH, CLICCS)
- Layout & design: choose between column or Z-pattern structure or find your own style.
- Text:
 - Keep fonts simple and consistent (1-2 max)
 - Minimum of 32 pt for body text, 48 pt+ for headings.
 - Use sans-serif, and avoid excessive italics, underlines, or bold.
- Colour:
 - Balance palette (60-30-10 color rule)
 - Contrast check (4.5:1 minimum between text colour and background colour)
 - Colour-blind friendly

What is the point of citations?

... so, they need to be useful (add value, legible)

Normal Academic Poster Session:

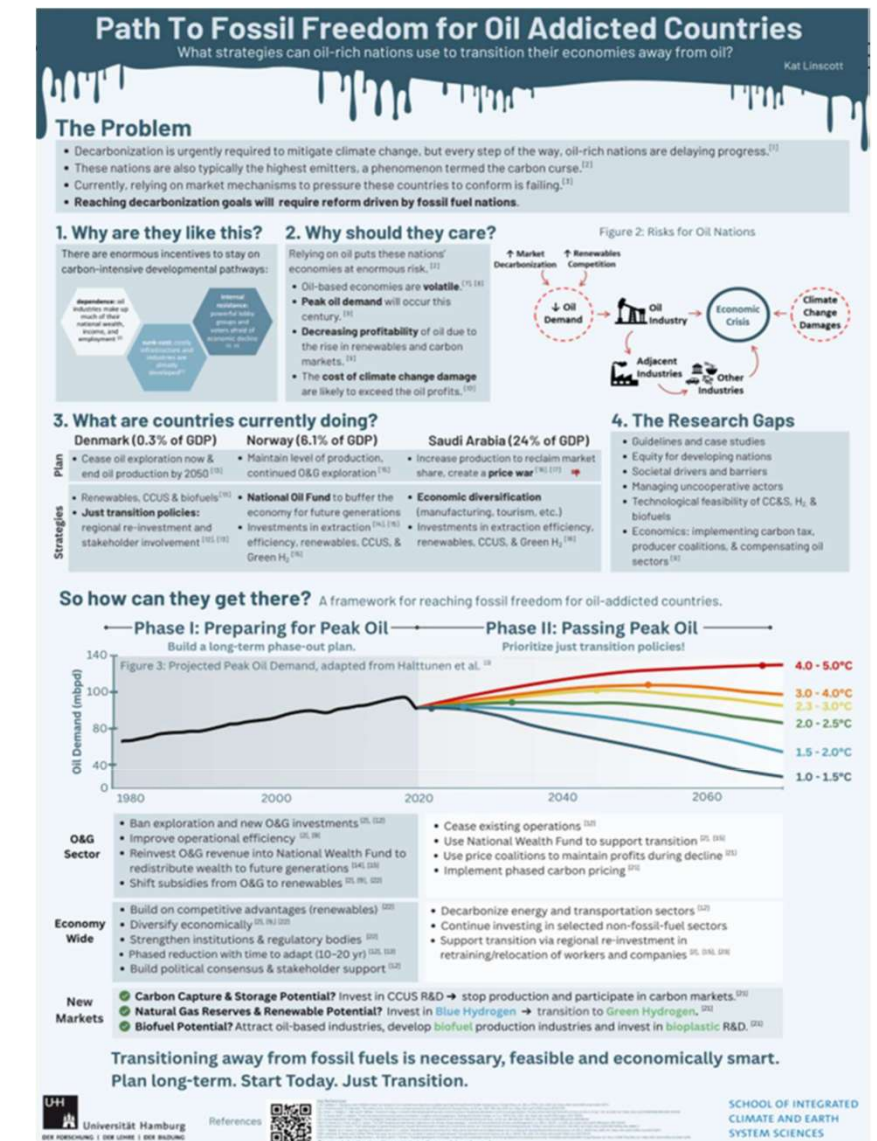
- Limited sources, all citations on the poster

If that doesn't work, you can use a QR code...

+ Put most important citations directly on the poster

+ bring printed reference list with you day-of

Tip: Use QR code that does not expire...



References



Key References:

- [1] S. Tadjieu, H. Njangang, and A. Woldemichael, "Are resource-rich countries less responsive to global warming? Oil wealth and climate change policy," *Energy Policy*, vol. 182, p. 113774, Nov. 2023, doi: <https://doi.org/10.1016/j.enpol.2023.113774>.
- [2] J. Friedrichs and O. R. Inderwildi, "The carbon curse: Are fuel rich countries doomed to high CO2 intensities?," *Energy Policy*, vol. 62, pp. 1356-1365, Nov. 2013, doi: <https://doi.org/10.1016/j.enpol.2013.07.076>.
- [3] J. Green, J. Hadden, T. Hale, and P. Mahdavi, "Transition, hedge, or resist? Understanding political and economic behavior toward decarbonization in the oil and gas industry," *Review of International Political Economy*, vol. 29, no. 6, pp. 1-28, Jul. 2021, doi: <https://doi.org/10.1080/09692290.2021.1946708>.
- [4] T. O. Ayinde and F. A. Adeyemi, "Fossil fuel prices and economic policy uncertainty- A regime-switching approach," *Energy and Climate Change*, vol. 5, p. 100140, Dec. 2024, doi: <https://doi.org/10.1016/j.egycc.2024.100140>.
- [5] T. Van de Graaf and A. Verbruggen, "The oil endgame: Strategies of oil exporters in a carbon-constrained world," *Environmental Science & Policy*, vol. 54, pp. 456-462, Dec. 2015, doi: <https://doi.org/10.1016/j.envsci.2015.08.004>.
- [6] R. G. Newell, B. C. Prest, and S. E. Sexton, "The GDP-Temperature relationship: Implications for climate change damages," *Journal of Environmental Economics and Management*, vol. 108, p. 102445, Jul. 2021, doi: <https://doi.org/10.1016/j.jeem.2021.102445>.
- [7] S. Greene and A. V. Carter, "From national ban to global climate policy renewal: Denmark's path to leading on oil extraction phase out," *International Environmental Agreements: Politics, Law and Economics*, Feb. 2024, doi: <https://doi.org/10.1007/s10784-024-09625-1>.
- [8] P. T. Madsen, D. S. Hansen, K. Sperling, C. Houeland, and K. E. H. Jenkins, "Abandoning fossil fuel production: What can be learned from the Danish phase-out of oil and gas?," *Energy Research & Social Science*, vol. 103, p. 103211, Sep. 2023, doi: <https://doi.org/10.1016/j.erss.2023.103211>.
- [9] K. Halttunen, R. Slade, and I. Staffell, "What if we never run out of oil? From certainty of 'peak oil' to 'peak demand,'" *Energy Research & Social Science*, vol. 85, p. 102407, Mar. 2022, doi: <https://doi.org/10.1016/j.erss.2021.102407>.
- [10] J. D. Hunt, A. Nascimento, N. Nascimento, L. W. Vieira, and O. J. Romero, "Possible pathways for oil and gas companies in a sustainable future: From the perspective of a hydrogen economy," *Renewable and Sustainable Energy Reviews*, vol. 160, p. 112291, May 2022, doi: <https://doi.org/10.1016/j.rser.2022.112291>.

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Poster Design Refresher

- How far are all of you in the poster design?
- Any questions/concerns/confusions?

On scope & argument

On content & research

On design & format

On the presentation?



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Communicating climate futures

Michael Brüggemann

How we imagine the future in the present has very little to do with how the future will turn out when it becomes the present. Instead, it's a strong reflection of how we perceive the present: Tell me what you think about the future, and I will tell you how you feel about the present.

Communicating climate futures means shaping climate futures

Journalistic constructions of climate futures



Prof. Dr. Michael Brüggemann

Chair for Climate and Science Communication
Journalism and Media Research

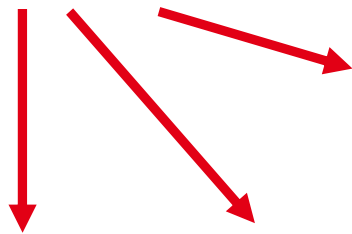
DER SPIEGEL 9/2015



Der Spiegel 33/1986



Temporalities of Journalism



Past: Journalists as historians
Journalism as *the first draft of history*

Present : Immediacy as central feature of journalism

„professional paradigm of fact-based, post hoc reporting“ (Pentzold/Fechner 2021, 715)

Journalism is about taming the ***anarchy of events*** (Schudson 2007)

Journalism does this by ***routinizing the unexpected*** (Tuchman 1973):

Deciding quickly in uncertain situations by typification (e.g. frames) and other routines

Future:

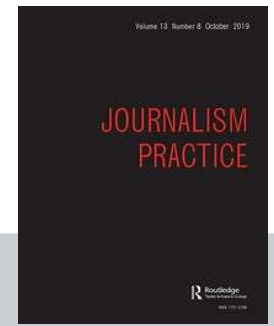
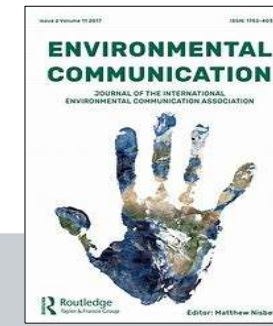
„one of the main roles of journalism is to refer to future events“ (Neiger 2007) ?

Conceptual background

- Imaginaries of the future (“present futures”) shape actual futures (“future presents” Luhmann; also see sociology of the future/expectations: e.g. Adam 2011, Brown/Mike 2003)
- Journalists often project upcoming events, analyze potential outcomes, and thus shape *collective expectations* (e.g., Tenenboim-Weinblatt & Neiger, 2015)
- Few studies looked at representations/frames of climate futures (e.g., Fløttum et al., 2014; Hellsten et al., 2014; Kumpu, 2013) → (un)desirable futures: doomsday
- *Psychological distance* (e.g., Trope & Liberman, 2010) as a challenge for climate communication (e.g., Duan et al., 2017, 2021): geographical, time scale, social, hypothetical (uncertainty)
- Theories of change: Futures of sustainability as modernization, transformation and control (Adloff & Neckel, 2019)

Our Research in CLICCS 2018-2025: Framing Climate Futures in the News

- Systematic review: Framing studies in climate change communication
- Qualitative long-term assessment: multimodal framing of climate futures in news magazines
- Quantitative content analysis: Framing of climate futures across four countries (plus second paper on psychological distance)
- Interviews + content analysis: Understanding the practices of (climate) journalists



Content analyses

Sample of print/online quality/tabloid/weekly/regional newspapers in Germany, India, South Africa, and the US
Qualitative analysis of news magazine cover stories related to climate change in Germany, India, UK, and the US

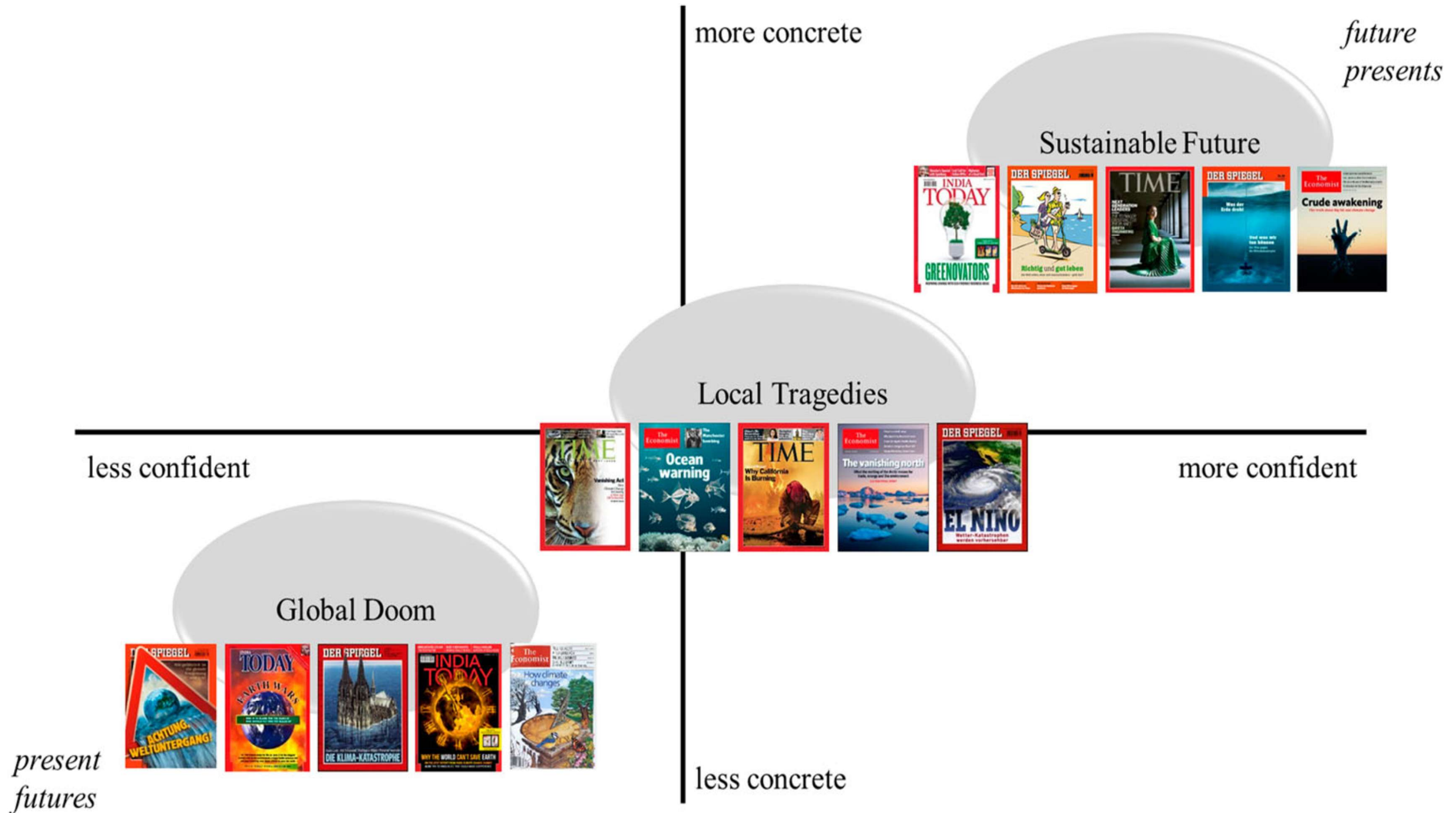
Use of 5 databases: Corpus on climate news $n = 56.394$ articles
Qualitative analysis 1980–2019 $n = 62$
Quantitative analysis 2017–2020 $n = 1.010$

Validated search strings (DE/EN) to find climate change articles
precision = .79–.80; recall = .80–.97; F1 = .80–.87

Dictionary-derivation approach: climate future passages in 700 articles $\rightarrow$ dictionary $\rightarrow$ “future score”

Quantitative analysis: Coding at scenario level ($n = 1.262$); frame identification via cluster analysis
(94% fit in discriminant analysis)

Findings from the qualitative analysis: *Global Doom* frame complemented by *Local Tragedies* and *Sustainable Futures* frames



Method: Coding future scenarios quantitatively

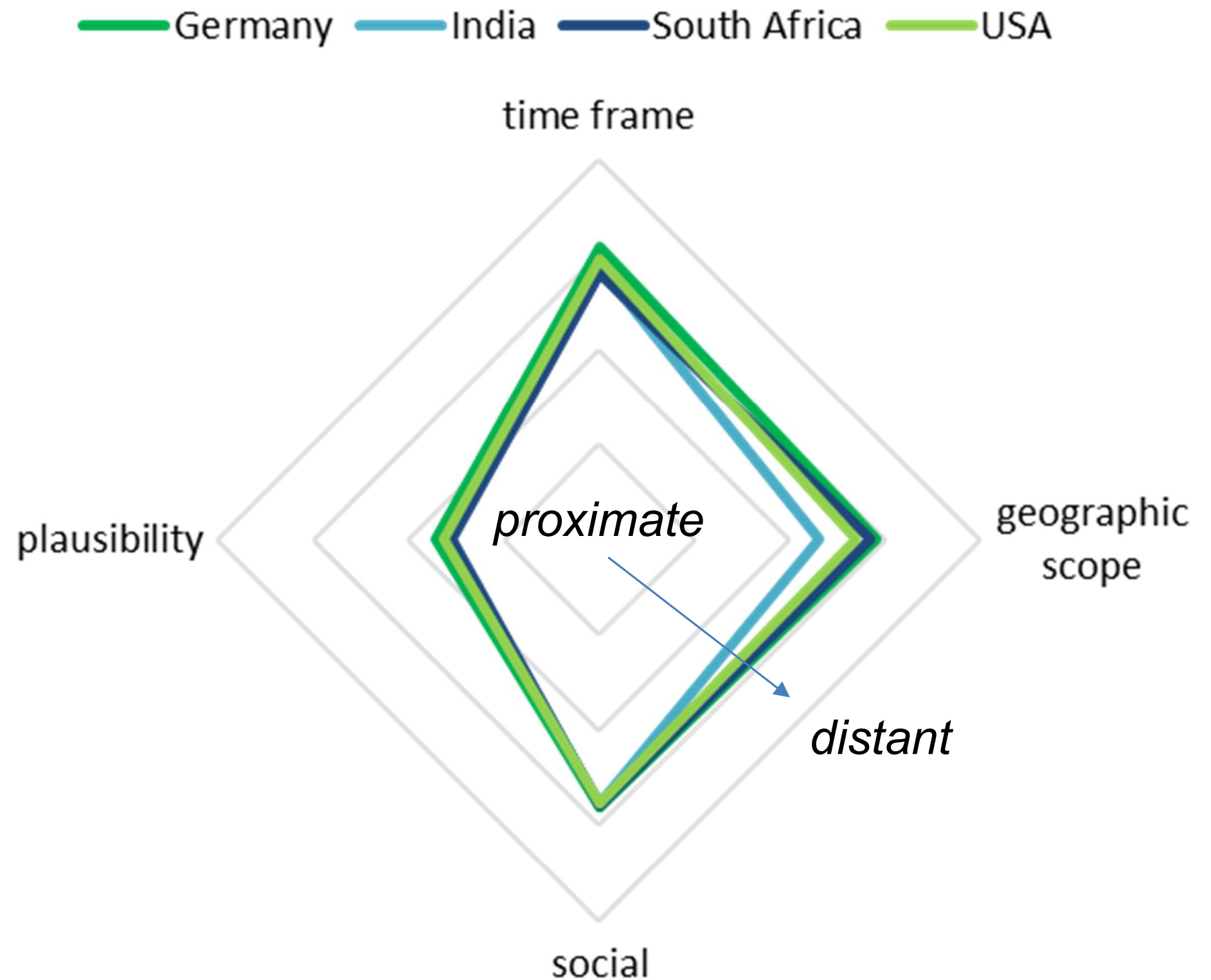
					knowledge base
					science
type of scenario	time frame	scope	(un)certainty	actor(s)	political
a. ecosystem	current/next year	local/regional	very unlikely	scientist	opinion
b. economic	up to 5 years	national	unlikely	politician	evaluation
c. social	up to 10 years	continent	likely	economist	negative
d. individual	up to 25 years	other part of the world	very likely	NGOs/activist	mixed
e. other	up to 50 years	global		civil society	positive
	up to 100 years			journalist	
				citizen/individual	
Other categories (frame elements): causal attributions and treatment recommendations, responsibility attributions					

Method: Coding future scenarios quantitatively

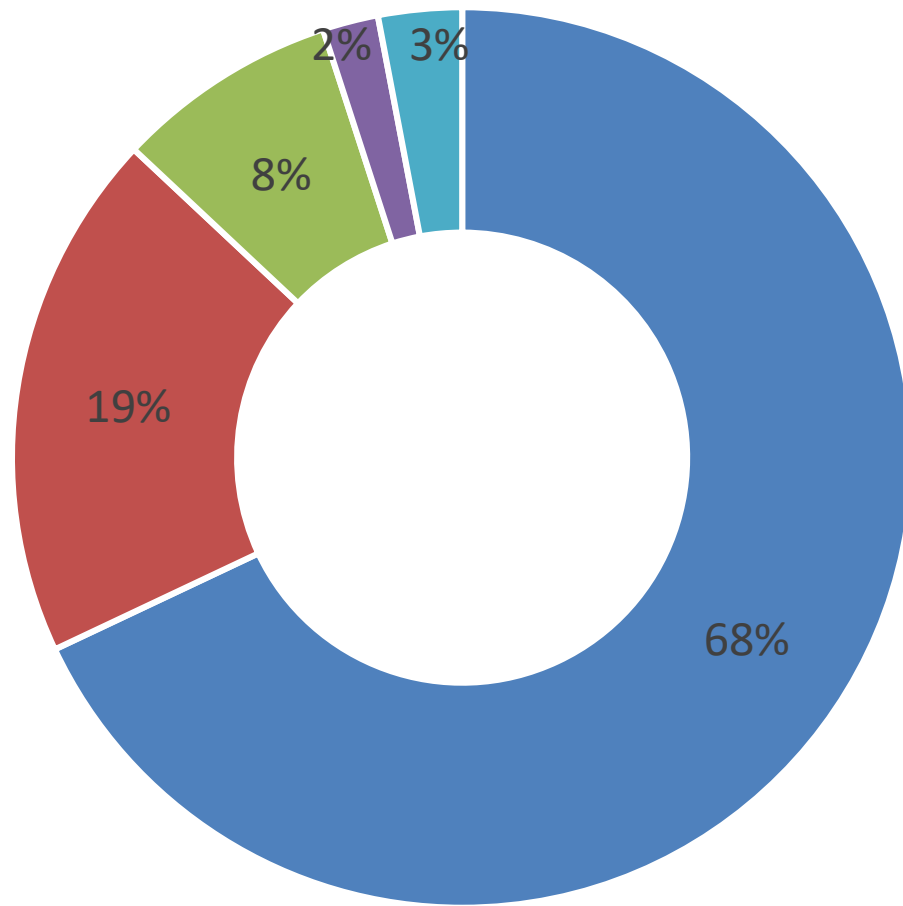
					knowledge base
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e. other	up to 50 years	global		civil society	positive
	up to 100 years			journalist	
				citizen/individual	

Findings Quantitative Analysis: Climate futures are certain - but *not here, not soon, not me*

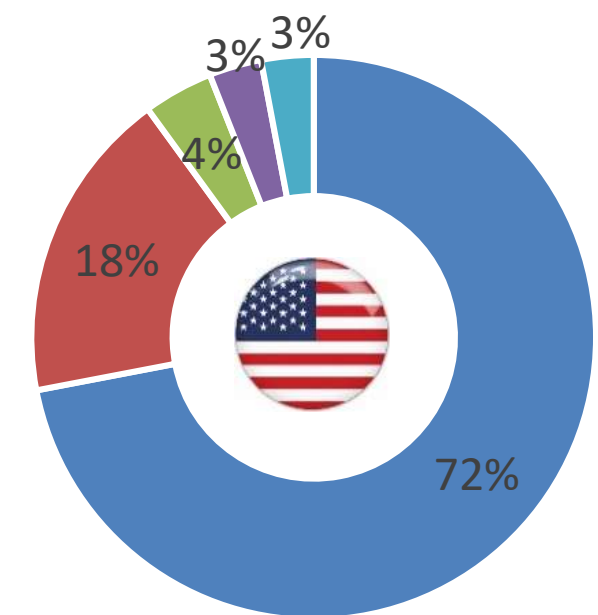
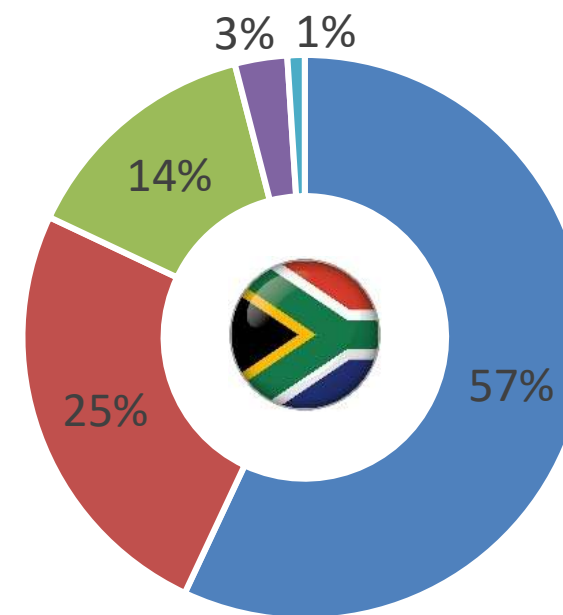
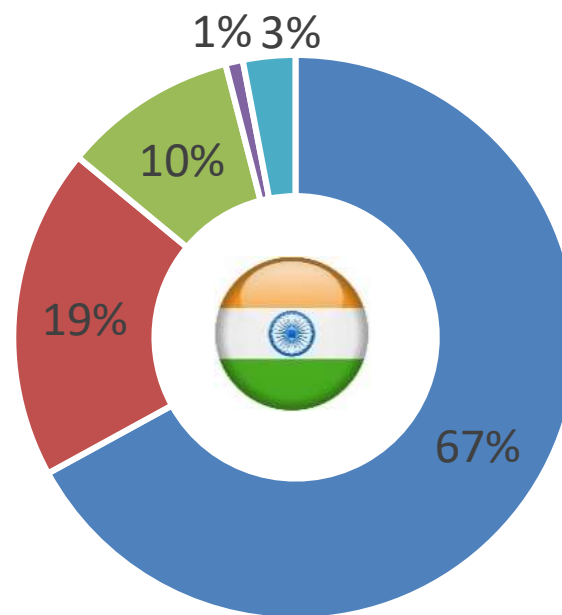
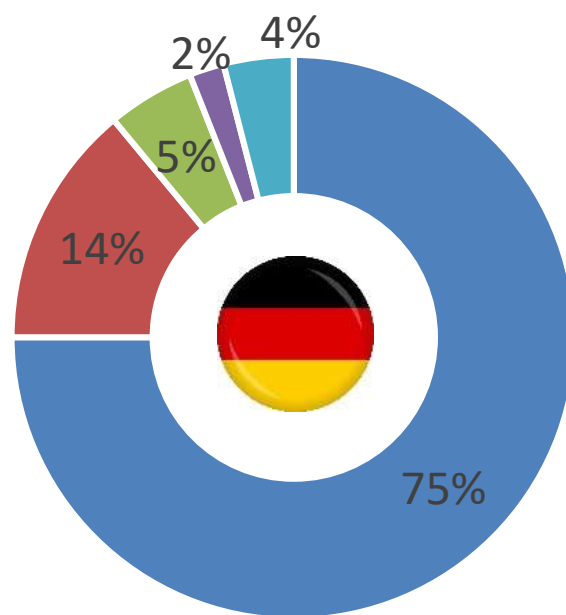
Four dimensions of
psychological distance



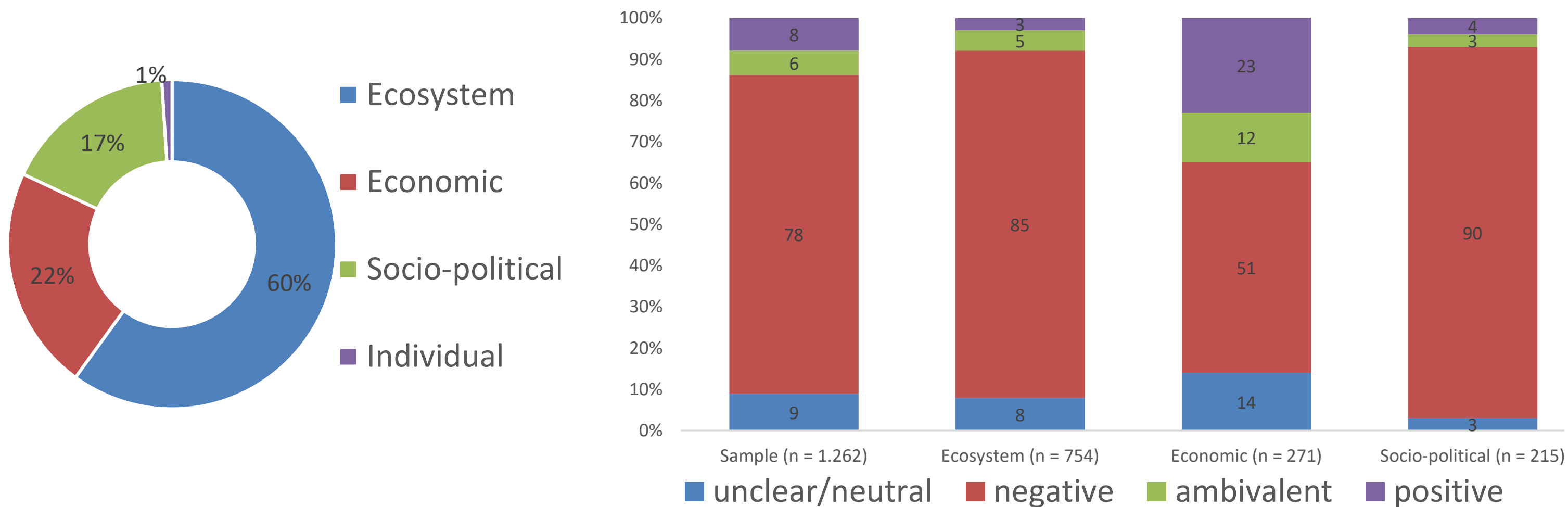
Findings quantitative analysis: Focus on the problem = Impacts of climate change



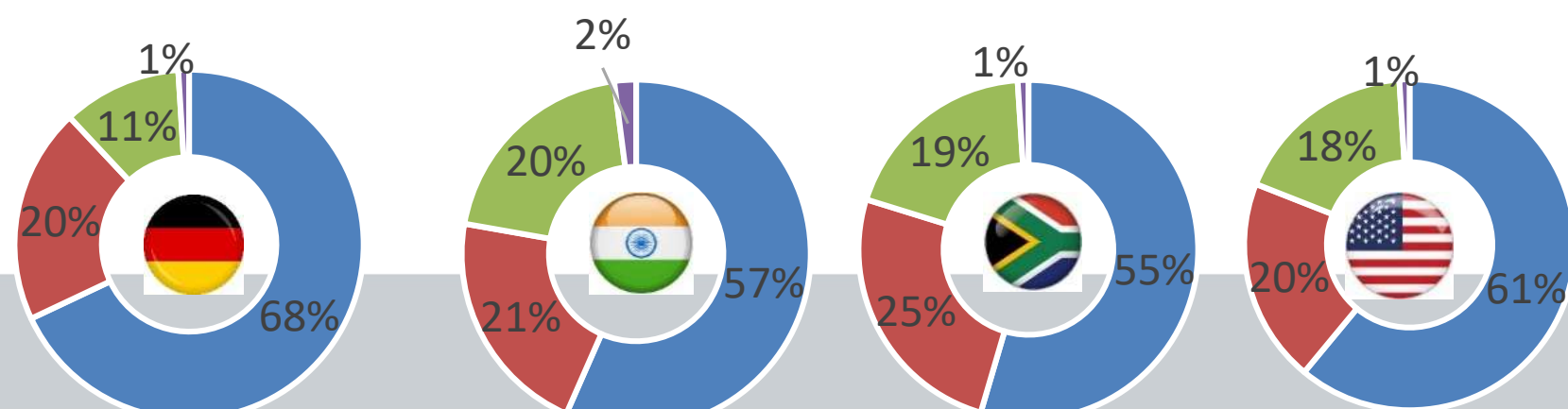
- Consequences/effects of climate change
- Mitigation/climate protection/prevention of climate change
- Adaptation to the consequences of climate change
- Mobilization/awareness
- Others



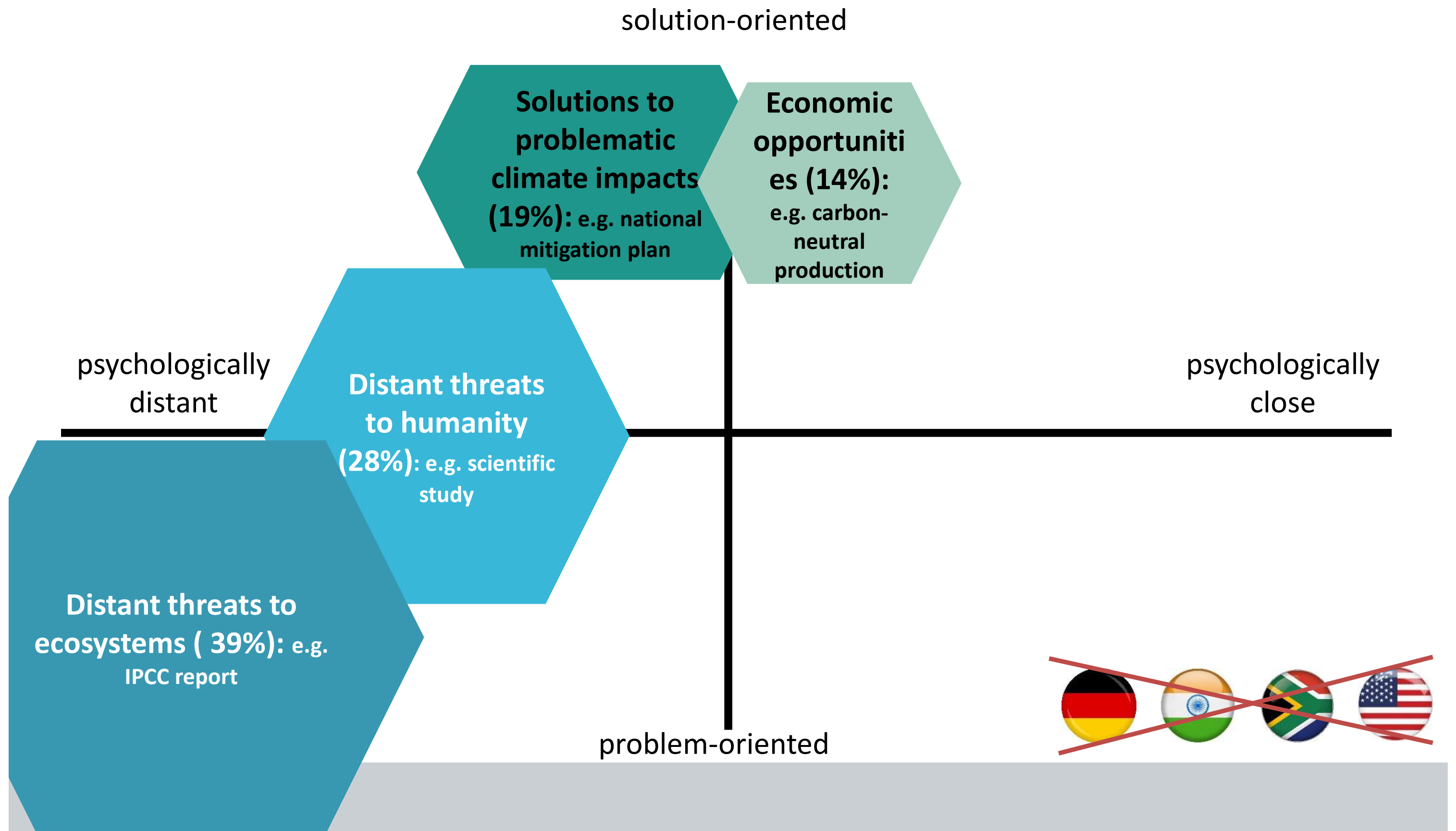
Negative scenarios concerning ecosystems



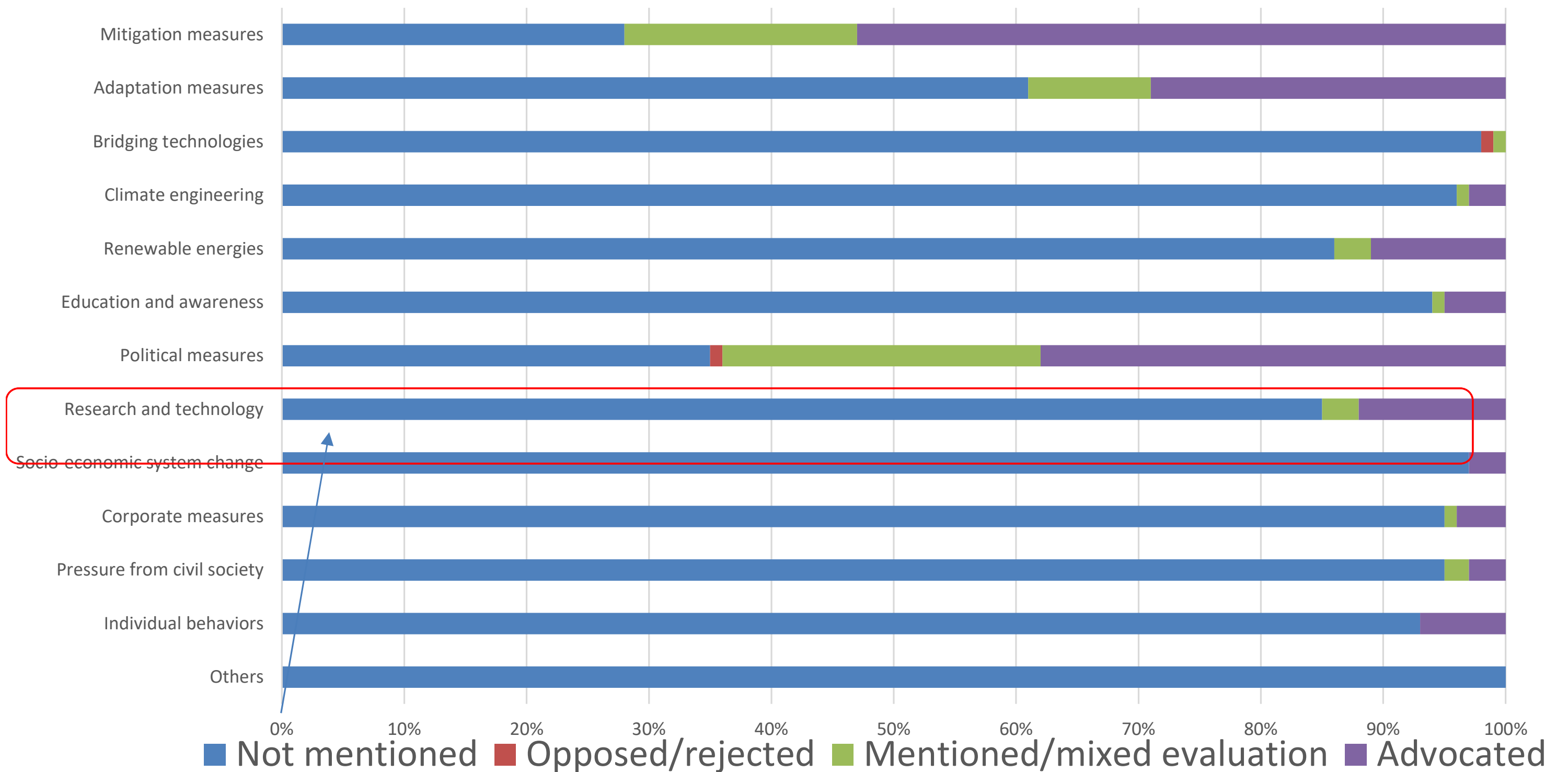
Type of scenarios (per country; $n = 1.262$, in %)



Distant threats: Psychologically distant and problem-oriented as most salient cluster



The blind spot: Transformation of the economic system: No cluster and rarely discussed as a solution



The limits of local journalism in covering climate futures

Explorative case study

Expert interviews with 10 journalists in local German newspapers

Three types of cognitive frames:

Status Quo Advocates: „Der Klimawandel wird nicht in Duisburg entschieden“

Cautious warners: „Nichts übers Knie brechen“

Transformation advocates: Klimawandel „größte systemische Herausforderung der Gegenwart“

<- Ressource limits as most important determinant of their coverage
(time/expertise/status)

(Jörges et al. 2024)

Diverse mind-sets -> homogeneous coverage

Explorative case study:: Rekonstruktive interviews

13 Journalists: D, SA, IN, US

Cognitive Frames:

Apeasing vs. raising alarm:

Climate futures **Not the end of the world** <-> **Towards apocalypse**

Tecnocratic vs. political

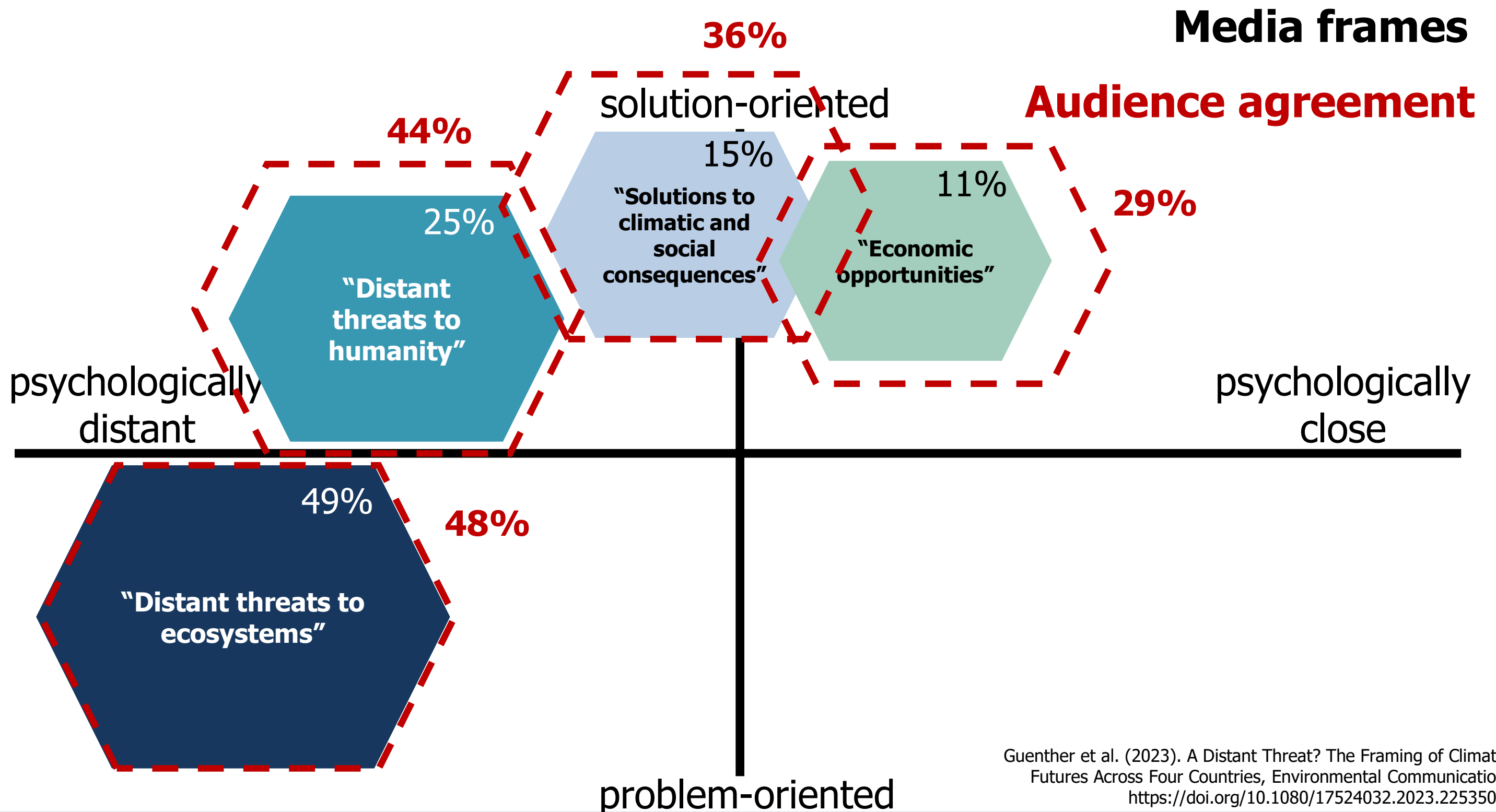
Type of solution **Technology for future** <-> **Blaming industrialized countries**
Voting for transition

Actual imaginations about the future only weakly connected to news frames:

- *Weakening the diagnosis* <- “we are no activists” as a common statement
- *Less political*
- *Less focus on solutions*

(Kirchner et al. 2024)

Audience Agreement somewhat matches media frames, but higher confidence regarding economic solutions



Note: Percentages show the share of responses that agreed 'somewhat' or 'strongly'.

-
- Transnational rather than national patterns of framing climate futures
 - Climate futures mostly described as
(1) negative, (2) distant (3) impacts of climate change, (4) without discussing solutions
 - Solutions are small scale innovations, economic opportunities
 - > Journalists depict a future of problems rather than solutions
 - > Solutions: incremental changes, not “talking about a revolution”:
- Lack of a “Great Transformation” frame as debated by academics and intellectuals
- > Strong connect to climate sciences as natural sciences
 - > Weak connect to social science’s futures
 - > Disconnect from intellectual debates about alternatives to the current economic order

What is the impact of this kind of journalism?

What is the impact of this kind of journalism?

“I have **no idea how the world is going to look**,” she said. Either the world will have tackled the problem in time, she went on, or it will have crossed what scientists call “tipping points,” beyond which it’s impossible to return to normal weather patterns.

“I **can’t really start planning my future**,” she said.

That **profound uncertainty animates the activism of many people of her generation**.

The New York Times

Greta Thunberg Sets Sail for U.N. Climate Talks



Key variables: 1. Fear (threat affects me)
 2. Efficacy (can do something)

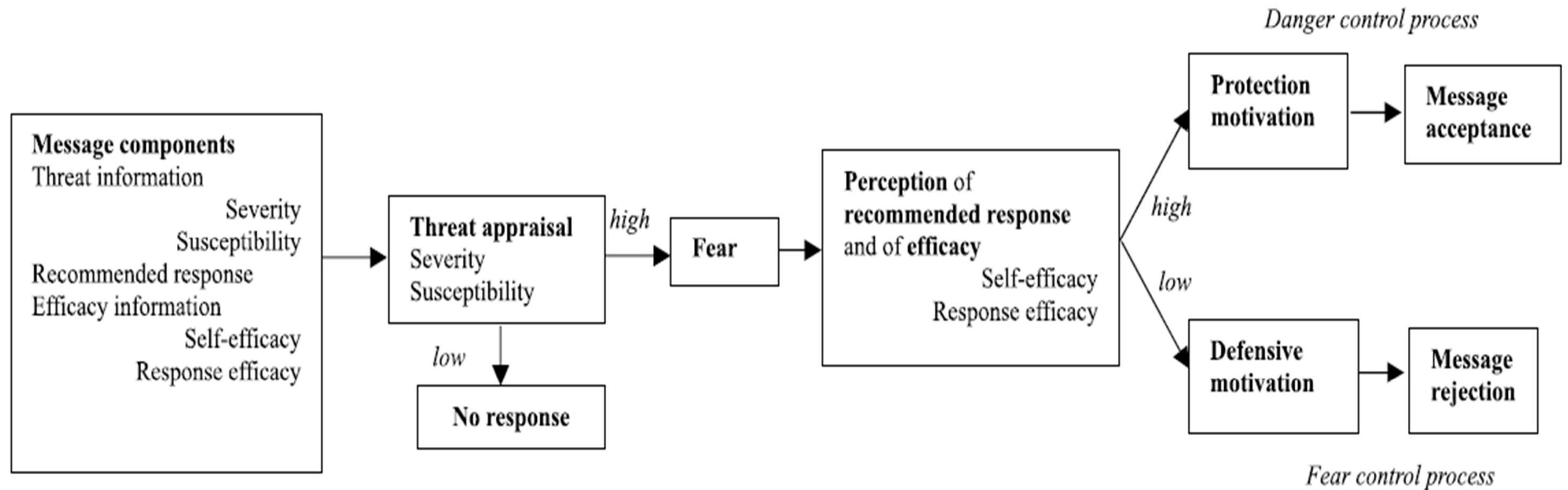


Figure 1. The extended parallel process model.

Note: EPPM, according to Witte (1992).

Comparing US and German News Coverage

Automated content analysis 2006-2023

Table 1. Coding.

Variable	Values	Example/explanation
Impact mentioned	At least one; none	Rising sea levels threaten coastal cities
Location	Domestic; International	Flooding in Texas (<i>Domestic</i>); Drought in Africa (<i>International</i>)
Timing	Past; Present; Future	Current heatwaves (<i>Present</i>); Potential crop failures (<i>Future</i>)
Action mentioned	At least one; none	Funding public transport
Actor	Government; Individual; Civil Society; Industry and Research	Citizens should recycle (<i>Individual</i>); The government must enact laws (<i>Government</i>)
Response efficacy	Low; Neutral; Positive	Switching to renewables can significantly reduce emissions (<i>High</i>); Proposed measures are unlikely to succeed (<i>Low</i>)
Self-efficacy	Low; Neutral; Positive	Everyone can make a difference by reducing emissions (<i>High</i>); Individual actions have minimal impact (<i>Low</i>)
Efficacy	$(\#Positive - \#Low) / (\#Positive + \#Low + \#Neutral)$	Balance measure of positive and negative efficacy information in an article (taking together both efficacy type)

Note: Codes and code variations that were used, plus examples.

Lohkamp, M., Farjam, M., & Brüggemann, M. (2026). Assessing Threat and Efficacy: Ideological Influences in Climate Change Reporting in US and German Newspapers (2006–2023). *Environmental Communication*, 1–15.

<https://doi.org/10.1080/17524032.2026.2616456>

Liberal/Left-leaning papers with more climate coverage

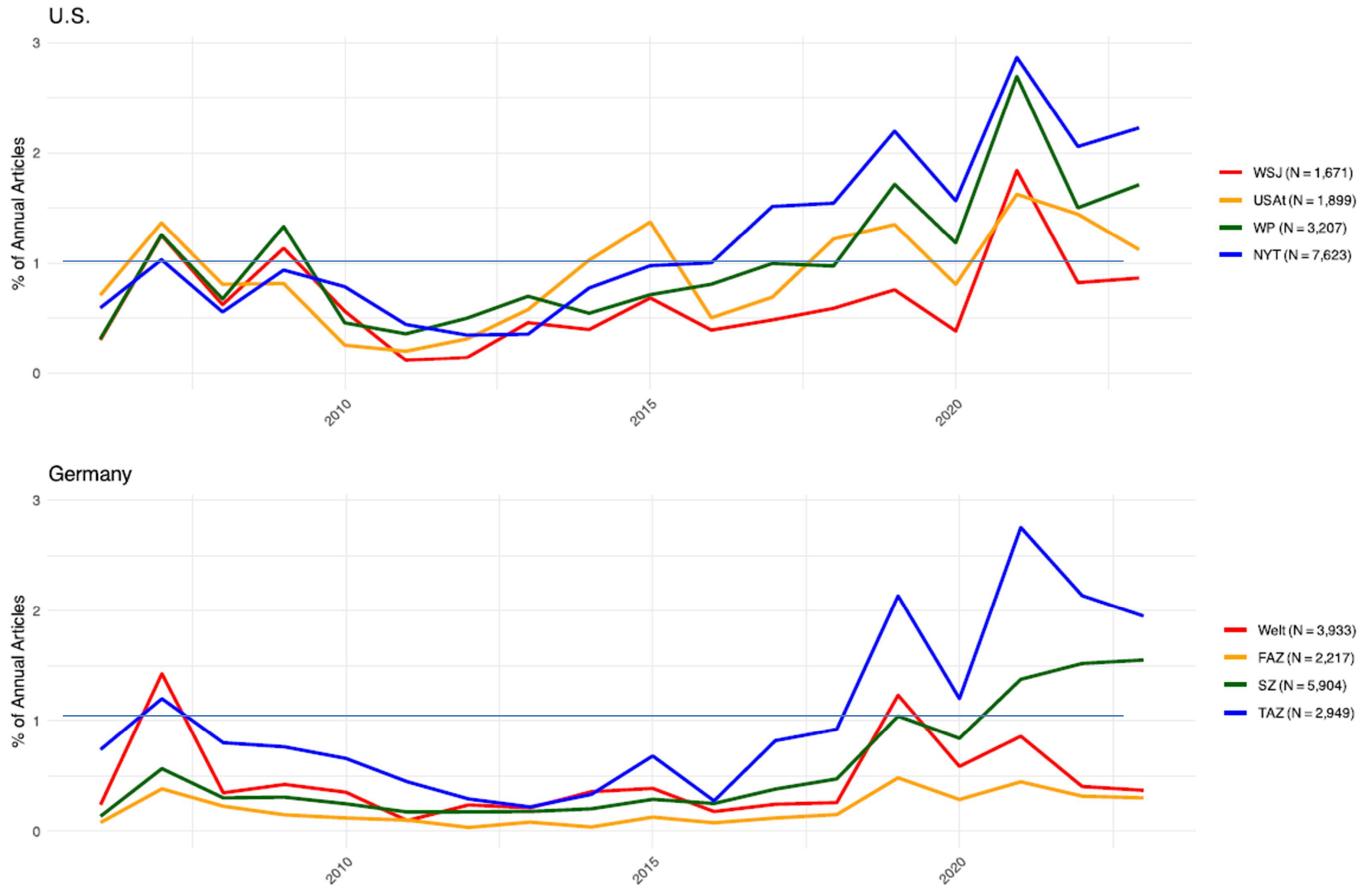


Figure 2. Distribution of articles on climate change per year and newspaper.

Note: The y-axis shows the percentage of articles in the sample relative to the overall article output of a newspaper during a year.



Impact and action mentioned together in every 2nd article, but with negative efficacy information

Metric	Total	WSJ
Impact mentioned in article	71.5	55.6 _{H1} ***
Location: Domestic / All locations mentioned	31.2	21.9 _{H2} ***
Timing: Present / All time cues mentioned	19.1	13.3 _{H3} ***
Action mentioned in article	87.6	87.2
Efficacy: Positive – Negative mentions	–12.0	–19.2 _{H5} ***
Action and Impact jointly	49.5	43.3**
N	10,145	1,059

What could be alternative ways of communicating climate futures?

What could be alternative ways of communicating climate futures?

- Idea of **constructive journalism**: exploring solutions as part of...
- > „**Transformative journalism**s“ (Brüggemann et al. 2022):
 - emerging practices of journalism
 - transparent about values: journalism may help society to democratically embrace socio-ecological transformations
 - Changes:
 - Meta-discourse
 - Editorial structures
 - Media content: More coverage affecting me + efficacy information
 - Interactions with sources and audiences

Thank you very much for your attention!

Get in touch:

Michael.Brueggemann@uni-hamburg.de

Homework # 7

If we want to research *and shape* climate futures, it is useful also to think about which climate futures are desirable from your point of view...

Homework # 7

... So, we invite you to write a short blog post (150-300 Words) on your vision of climate futures in 15 years.

Rather than writing broadly about climate, zoom in on something concrete from your own life -- for example, how you travel, where you work, what you eat, what taxes you pay, or how you interact with AI.

Excellent posts:

- outline where do you wish to go and how you (or we as a society) can get there
- address potential obstacles (and solutions) to implementation
- include some creative element

Work in pairs: one post per pair, work together to streamline your thoughts and correct your writing. You may reference literature, where appropriate.

Deadline for posts: 2nd of June.

Explanation of homework

Michael Brüggemann

Homework # 7

Homework #7a: Blog post on your “Desired Climate Futures” (due June 2nd EOD)

Homework #7b: Please also read the posts and be ready to recommend one for publication at climatematters.de and for the role play in class, when discussing the posts in the session, June 4th.

Homework #7c: Begin considering the content/structure/design of your poster. Include the feedback you received on the proposal within this. We recommend creating an draft outline of your poster this week, as the first draft of your poster will be due June 11th (for the feedback speed-dating).

... as per usual, also progress further with the poster session organization.

Poster: Updated Timeline

Task	until
Class: Introduction to poster tasks and grading (Lars)	23.04.26
Homework: Post first ideas for a poster on the blog (100-200 words)	30.04.26
Class: Input on poster design (Kat); Starting organisation of self-organized poster session (Kat)	30.04.26
Homework: Comment on the blog on one poster idea (50-100 words)	14.05.26
Homework: Post proposal for your poster topic including references (300-400 words)	21.05.26
Class: Peer-peer feedback session; Poster session organization (Lars and Kat)	21.05.26
Q&A poster task	28.05.26
Homework: prepare first version of poster (digital and A4 printout)	11.06.26
Class: Poster drafts feedback - speed dating	11.06.26
Time for students to prepare poster session	18.06.26
Poster clinic; Time for students to prepare poster session	25.06.26
Poster Session events I and II	02.07.26, 09.07.26
CLICCS Retreat: Presentation of awarded posters	30.09.-02.10.26

Updated preliminary session plan

09.04.	Introduction to the course (L. Kutzbach); Introduction to the course blog (J. Behrens); Introduction to <i>Climate Futures</i> (L. Kutzbach)
16.04.	Mapping natural and societal dynamics constituting climate futures (A. Oberg);
23.04.	Introduction to poster task and grading criteria; poster session task (L. Kutzbach); Input on <i>Epistemic Pluralism in Climate Science</i> (K. Linscott et al.); Input on <i>Transformative Science</i> (M. Brüggemann)
30.04.	<i>Mathematical perspectives on climate futures</i> (J. Behrens); Introduction to poster design and starting organisation of poster session task (K. Linscott)
07.05.	<i>Can we predict climate?</i> (Johanna Baehr); 1 st role-play on <i>epistemic plurality and transformative science in CLICSS</i> (students)
21.05.	Peer-peer feedback session; Poster session organization (K. Linscott and L. Kutzbach)
28.05.	<i>Communicating climate futures</i> (Michael Brüggemann); Q&A poster task
04.06.	<i>Narrative-based near-term prediction of climate futures</i> (Leo Borchert); discussion on desired futures
11.06.	Poster drafts feedback - speed dating
18.06.	Organisation of poster session; 2nd role-play (students)
25.06.	Poster clinic; preparation of poster session
02.07.	Poster presentation practice session
09.07.	Poster Session event (10:00-15:00)
16.07.	Feedback and Conclusions (students and lecturers)