



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

CLUSTER OF EXCELLENCE
CLIMATE, CLIMATIC CHANGE,
AND SOCIETY (CLICCS)

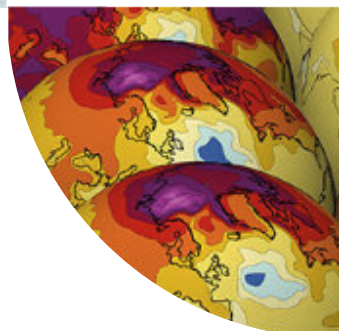
FROM GLOBAL DOOM TO SUSTAINABLE SOLUTIONS

HOW NEWS MAGAZINES FRAME OUR FUTURE WITH CLIMATE CHANGE



01

MAR 2022



CLICCS QUARTERLY

NEWS FROM CLIMATE RESEARCH



HOW NEWS MAGAZINES FRAME OUR CLIMATE FUTURE

When it comes to climate change, many people rely on the media to keep informed. But how our future could look like is portrayed in a variety of ways. Journalists create powerful visions that can promote climate-friendly behavior. A team led by Prof. Michael Brüggemann and Dr. Lars Guenther has investigated how these images of our future with climate change are constructed.

How are visions of our climate future created in the media?

Michael Brüggemann: Journalists not only “translate” climate research for the public; they also select specific notions about the future. In the process, they embed information in different interpretational frameworks – which we refer to as “frames”. This has nothing to do with manipulation; it’s simply due to the fact that human communications always take place in specific contexts.

Could you give us a few examples?

Lars Guenther: These interpretational patterns apply to positive and negative climate futures alike. Sustainability and opportunities stand for positive visions, while the catastrophic impacts of global warming represent negative ones. We analyzed four international newsmagazines from the 1980s to 2019, and gathered issues of India Today, Der Spiegel, The Economist and Time Magazine with a reference to climate change on the cover page. One exciting aspect here are the combined frames of the texts and images.

And what do they predict for our future?

Brüggemann: Especially some of the early cover stories from the 1980s and 1990s show a vision of the future that could essentially be described as “global doom” – and portray it using extreme scenarios for our planet. These stories use alarming and apocalyptic terminology and imagery. The second frame, “local tragedies”, is similar but more regionally focused and therefore more concrete. It concentrates on the impacts of climate change in specific regions. Here, the covers and articles are characterized by photographs of storm damage, dead fish, bleached-out corals, or people fighting wildfires in the Amazon or California.

And the more optimistic perspective?

Guenther: The third frame is more concerned with “sustainable solutions”: many of these articles treat global warming of 1.5 or 2 degrees Celsius as a fact and focus on ways of limiting warming to the respective level. Here, many of the cover images have a global motif and use individuals like Greta Thunberg or address local topics, but use symbolic

images to do so, for instance a picture of a tree inside a lightbulb to symbolize innovative ideas.

What are the effects of these portrayals?

Brüggemann: Generally speaking, the frames have become more diverse and complement one another. That’s a good way to encourage climate-friendly choices. They show the very serious problems that climate change entails, while also highlighting our options. Images of potential solutions and measures give people hope. We’ve also seen that portrayals of local impacts can be particularly effective in terms of increasing people’s awareness of the problem and their willingness to support political measures. Since the 2000s, a shift toward portrayals of a more sustainable future can be seen.

TIPPING SYSTEMS

Tipping points aren't just found in the physical climate system. In societies, too, there can be massive, abrupt and irreversible upheavals, e.g. when widespread dissatisfaction leads to revolutions or escalates into spirals of violence.

We still know too little about the mutual influences between climate change and society. In computer models, the two systems are most often viewed separately. Prof. Jürgen Scheffran advocates the use of integrated models to combine complex interactions in plausible future scenarios. Climate-related events can lead to social tipping points, which are subsequently spreading through cascading effects and remote connections.

One example are extreme weather events, which lead to failed harvests, rising global grain prices and social unrest. Like a domino effect, during the Arab Spring governments were overthrown, civil war broke out in Syria and Yemen, and refugee movements were triggered, reaching to Europe. At Lake Chad, a lack of prospects,



food and water shortages, combined with religious violence and persecution have created a dangerous situation.

In contrast, positive tipping points are also possible, e.g. when climate protests drive a sustainable energy transition. Integrated models can help identify the conditions for negative and positive tipping points alike.

<http://iopscience.iop.org/article/10.1088/1748-9326/ac42fd>



LOCAL CLIMATE KNOWLEDGE

In countless regions, many people's livelihoods depend on natural resources. If they also face poverty the effects of climate change are especially serious.

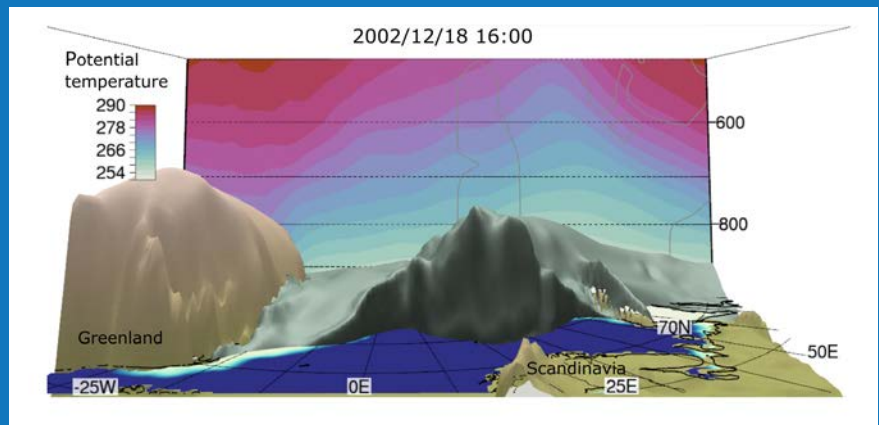
In Nepal, Dr. Prem Raj Neupane and Kumar Darjee conducted interviews in 337 households located near six meteorological monitoring stations. The forestry researchers asked the interviewees to share their views on climate change and how they can recognize its effects. Those living in a low-lying region reported that they were now bringing in their rice harvest in the last week of September – instead of early November, as was the tradition – in response to rising temperatures. Rainfall is also becoming much less dependable. As a result, 67 percent had since abandoned rice farming. Among interviewees from a mountainous region, 66 percent reported that many nearby peaks often remain snow-free. And the meteorological data confirms that local temperatures rose by 1.9 degrees since 1988.

As such, there are many observations of nature that match climate measurements. Both together represent the reality of life of the population. Accordingly, they should be used together as a basis for adaptation and protection. <https://doi.org/10.1175/WCAS-D-21-0081.1>

USING 3D IMAGES TO BETTER UNDERSTAND POLAR LOWS

On December 18, 2002, a massive cold-air front forms in the Arctic Ocean. The icy air blows from the North Pole and across the Arctic sea ice. Over open waters it swells into a several-hundred-meter-high wall between Greenland and Russia. When this cold dry air meets warm moist air over the ice-free ocean, turbulences develop. The cold-air front's three-dimensional structure is visualized as a gray "mountain"; the surface of the mountain is drawn along air-masses with temperatures of minus 15 degrees Celsius (257 Kelvin) and colder.

Marine cold air outbreaks like this one can produce polar lows or cyclones accompanied by strong wind gusts, heavy snowfall and sleet. These winterstorms pose a serious risk for fishing, transport ships and offshore oil rigs. With the aid



of interactive 3D visual data analysis, Dr. Marcel Meyer and Dr. Iuliia Polkova have now determined that the higher these air masses stack up, the more likely it is that a polar low will develop – an important finding for early-warning systems.

In their work, they used Met.3D, a new program now further developed at

Universität Hamburg that can display meteorological data in a variety of ways. As a result, phenomena can be directly and intuitively analyzed. At the end of the [video clip](#), the resulting polar low is shown as a brown funnel on the right-hand side of the screen.

<https://doi.org/10.5194/wcd-2-867-2021>

NEWS IN BRIEF

NEWLY ELECTED

Since the beginning of the year, Dr. Franziska Hanf and Dr. Jan Wilkens have represented the interests of doctoral candidates and postdocs at the CLICCS: Franziska Hanf has been doing so as part of the CLICCS Steering Committee, while Jan Wilkens has been representing young researchers on the Early Career Committee of the Graduate School SICSS. uhh.de/cliccs-earlycareer

CLIMATE PROTECTION IN OUR OWN BACKYARD

In March, „Klimafit“ courses were launched throughout Germany to provide information on the regional effects of climate change. Under the motto „imparting knowledge, networking and highlighting opportunities for action,“ anyone interested can register. Co-initiator Prof. Beate Ratter is providing scientific support for the project. Universität Hamburg is a project partner. www.klimafit-kurs.de/

NEW MANAGING DIRECTOR FOR CEN AND CLICCS

Dr. Nora Dörmann has been managing the Center for Earth System Research and Sustainability (CEN) at the Universität Hamburg and the Cluster of Excellence CLICCS since the beginning of the year. Dörmann, who holds a Ph.D. in Economics, previously served as Managing Coordinator of a Collaborative Research Centre at the University of Duisburg-Essen. Welcome on board! uhh.de/cliccs-contact-doermann

PUBLISHED BY

Climate, Climatic Change, and Society (CLICCS)
Cluster of Excellence at Universität Hamburg

Center for Earth System Research and
Sustainability (CEN)
CEN Office
Bundesstraße 53, 20146 Hamburg

Editorial staff: Stephanie Janssen, Franziska Neigenfind,
Julika Doerffer, Ute Kreis
cliccs@uni-hamburg.de
www.cliccs.uni-hamburg.de
[www.twitter.com/CENunihh](https://twitter.com/CENunihh)

Image credits

Title: Anders Hellberg (CC-BY-SA-4.0); PIRO4D, Sebastian Marty, Bianca Van Dijk, Ianur/all on Pixabay; John Middelkoop/Unsplash; p.2: Cristian Ibarra/Pixabay; p.3 above: Enoch Lai/English Wikipedia (CC-BY-SA-3.0); p.3 below: Prem Raj Neupane; p.4: Marcel Meyer et al.