

## Conference Report

Image Politics.

Pictur(e)ing Climate – Visualizations, Imaginations, Documentations

19<sup>th</sup>/20<sup>th</sup> January 2012

Organizers:

Dr. Birgit Schneider, Institute for Arts and Media, University of Potsdam  
in conjunction with Dr. Thomas Nocke, Potsdam Institute for Climate Impact Research  
and the Potsdam Graduate School “Visualization and Visuality”

Conference location:

Potsdam-Institut für Klimafolgenforschung (PIK)

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The conference “Image Politics – Pictur(e)ing Climate” sought to combine various perspectives on climate visualization from a climate studies and a humanities viewpoint. It took place at Potsdam Institute for Climate Impact Research, Germany from January 18<sup>th</sup>–19<sup>th</sup> 2012 and was organized by Birgit Schneider (University of Potsdam) and Thomas Nocke (Potsdam Institute for Climate Impact Research).

In her introduction Birgit Schneider (Art History & Visual Media Studies, Institute for Arts and Media, Potsdam University, Germany) highlighted the general potential of and need for climate visualization to make visible the invisible, as in many cases of meteorological data and observation series. She took as an example A. v. Humboldt’s isotherm map depicting climate zones on the northern hemisphere in the year 1817. Using this example she explained the interdependency of climate science and visualization methods, which historically evolved together. To the present day, the connection between analytical graphics and scientific climate knowledge has not only been maintained, it has actually intensified. She addressed the question of what happens when explorative visualization strategies are transformed into presentations for policy members or the broader public. When expert graphics are transferred to other contexts, they collide with new interests such as the demands of politics and society for a stable decision-making basis, and also with emotional issues.

### **SECTION: The Status of Climate Expert Graphs in IPCC Reports**

Timm Zwickel (Physics/Artificial Intelligence/Computational Neuroscience, Technical Support Unit, IPCC-Working Group III, Potsdam) commented critically on the use of figures in the everyday work of report writing for the IPCC, using examples from the recent Special Report on Renewable Energy Sources and Climate Change Mitigation (SREN) of IPCC WG III. He showed how the authors of the reports struggle to find the clearest, most understandable and concise ways of transferring their knowledge into figures with the help of graphic designers. Figures function here as aggregations of otherwise hard-to-access data from a multitude of diverse sources. Their role is highly valued, as they are the key to successful communication of the assessment’s outcome. Zwickel outlined the difficult challenge of communicating the results in a condensed way – as figures alone can never show the whole scientific basis: their job is to reduce complexity – while staying true to the science. He discussed the possibilities of developing an even more coherent figurative language in order to control the communication concerning the outcomes. He also discussed the idea of giving access to the IPCC figures interactively in order to connect more directly with the data behind the graphics and make its complexity visible.

Lynda Walsh (English Language and Linguistics, English Department, University of Nevada/Reno) took up the issue of graphics in the *IPCC Summary for Policy Makers* of 2007 in a profound rhetorical analysis. She made clear the great difference between “ethos” and “stasis” by focussing on the contradictory notions of and expectations towards science in the United States, although her interpretation could be valid for other countries as well. Walsh explained how climatologists have to perform two ‘schizophrenic’ roles. When climate future scenarios are used to communicate key scientific findings about possible climate change futures, layers of facts (science) get mixed up with layers of value judgements (ethos, prophetism). In public and in policy contexts scientific scenarios based on probabilistic theory are mistaken for predictions: They are interpreted as value judgements (like “industry causes warming” = “industry is bad!”) although they are only produced to communicate scientific facts of cause and effect. She proposed to discuss very clearly the differences

between scientific uncertainty and political uncertainty and she reasoned that it might be helpful to find individuals other than scientists to perform the prophetic ethos.

Georg Feulner (Physics, Potsdam Institute for Climate Impact Research) employed many examples to give an overview of strategies concerning how graphics and photographs are used within the sceptical climate blogosphere. After showing how photographs are used as emotional teasers or as a way of maligning certain scientists he showed examples of the most widespread use of figures in a method he called “cherry picking”. With this he meant the widespread strategy of focusing on a small detail among the findings while at the same time blocking out others in order to contradict the IPCC findings (e.g. “But some glaciers are growing!”). Key examples for “misleading graphs” were: the detail of a curve of only twelve years presenting the idea “that global warming actually stopped in 1998” and the correlation of the Keeling Curve and temperatures within the short period of 1995 to 2010 which is used to argue that there is no correlation of CO<sub>2</sub> and temperatures. Feulner observed that the use of misleading graphs is more widespread than deliberately faked graphs. As climate science is so complex, misleading graphs published on the internet can very easily confuse internet users: the web, as Feulner pointed out, is actually helping the sceptics. In the discussion it was asked at what point “misleading strategies” start, as graphic designers always have to think about extracts and scaling and if there is a way of controlling climate graphics better, in the age of copy and paste, by producing them with more standardization.

### **SECTION: Enlightening and Convincing via the Internet**

Markus Wrobel (Computer and Information Science, Potsdam Institute for Climate Impact Research, Germany) and Dominik Reusser (Applied System Sciences, Potsdam Institute for Climate Impact Research, Germany) gave insights into the challenges of communicating results of climate change research with web-based applications for a wide range of users. Wrobel presented results from a survey about the usefulness of such applications they had undertaken at PIK. Both analysed different visualization tools, such as the IPCC Data Visualization Tool, which allows web users to explore climate data interactively. By focussing on digital tools and interactivity, rather than on static PDF or printed figures, as a different way to access the issue, they demonstrated how interactivity does better justice to the complexity of climate data. They criticized the fact that climate visualization often acts as the last link in the chain of knowledge production in climate sciences; more money would be needed to explore new methods and produce yet better visualizations. With that, inconsistencies in visualization could be minimized and the challenge of how to depict different kinds of uncertainty could also be better explored.

### **SECTION: Climate Change, Media and Activism**

Julie Doyle (English Literature and Media Studies, School of Arts and Media, University of Brighton) started her talk with a general media studies perspective on images of climate change. By doing so she introduced the focus of the second part of the conference, which was on cultural visualizations and imaginations. She explained how science, environmentalism and mass media have shaped the notion of climate change within recent decades and how, with the issue of climate change, concepts of nature, vision and time come into play. Doyle discussed the failures of visualizations when it comes to imagining and sensing climate change. She noted that the photography of climatically changed landscapes fails to engage the viewer and that it is nearly impossible to transform knowledge into experience, habits and practices. As a consequence, in the second half of her presentation she gave insights into her own experiences of collaborating with the British artist David Harradine in 2010 in order to produce “moving images of climate change”. One result of this was the critical reworking of the polar bear symbol realized within a performance video done by Harradine.

During the United Nations Climate Change Conference in Copenhagen in 2009, Elke Grittmann (Communication Studies, Department of Communication, University of Muenster, Germany) presented a case study on the visualization of climate change within the German print and online media. She stressed that not only science but also the media developed a very individual language to highlight and make visible climate change and climate change risks. The language used by the press, she found, is highly conventionalized. Media are ruled by an ethos of credibility and they claim to present an objective truthful coverage, which accompanies the presentation of “facts” and the benefit of the “here and now” against the background of the slowly developing catastrophe of climate change. The issue of climate change within the media gets constructed and “framed” visually and verbally by selection, moral evaluation and causal interpretations. This framing is key to organizing the issue. In her examples, documentary photographs outweighed other genres. She differentiated between different types of visual strategies like iconographies of vulnerabilities, mitigations and

adaptions in certain regions or landscape photography visualizing the sublime. Causes of climate change, she observed, are mostly presented from a detached, bird's-eye view.

In her talk, Vera Tollmann (Cultural Scientist/Freelance writer, Berlin, Germany) presented visual strategies invented by eco-activists. With an in-depth analysis of a movie produced by "Plane Stupid" she showed how the conventionalized media representations of climate change get transformed and broken down into critical forms of protest. Activist image production often takes its starting point from known pictures of climate change but destroys and drastically dramatizes them to evoke the horror which in media coverage is downplayed and smoothed over. Polar bears are falling from the sky: here the taboo of the bloody impact with the ground is explicitly shown. Tollmann analysed such rhetoric strategies of "shock propaganda" as deliberate acts of affirmation, over-identification and alienation by which the activists seek to intervene in media coverage standardization. She concluded that for activist usage the construction icons like the polar bear are not useful as they present something hierarchical; instead images are sought which stop the normalized perception of customization.

### **SECTION: Making the Invisible imaginable through Art and Photography**

The talk was followed by Ulrike Heine (Art History and Cultural Studies, Research Training Group „Transnational Media Events“, Justus-Liebig-University Giessen/Germany). She presented an analysis of several elaborate photo books which have been published on the subject of climate change within the last decade. She mapped a typology of four different visual strategies in the books. "Illustrations" she called pictures which are mainly generated to demonstrate what the text is explaining; they are often given to prove scientific findings and impacts. "Inscriptions" is what she termed the complex collages which combine photographs with figures and texts. "Comparisons" are used to show temporal changes within landscapes, above all glacier documentation; they are the most imposing way to make clear the changes already going on. Finally, "contemplation" is what she called images which present first and foremost landscape photography in a sublime way, and also portraits of affected people or animals. She posed the question of whether static photography can successfully depict the loss of landscapes and the on-going change in living conditions. She stated that this only works on the basis of previous cultural knowledge which is then projected into the images.

Edward Morris (Artist, Department of Transmedia, Syracuse University/USA) from the artist duo "The Canary Project" took an even stronger critical perspective on the power of images to depict climate change at all. He presented several artistic works on which he has collaborated in recent years with the photographer Susannah Saylor to make the impact of climate change more accessible and meaningful to the public. He took a very critical look at landscape photography in its neo-romantic, sublime and detached relation to nature. He noted that the artist's experience of travelling to sites all over the world, which are already apparently affected by climate changes, made it clear to them that "the earth doesn't care" as geological scales of time rule here. Today the artists concluded that their large photographs of affected landscapes haven't depicted climate change in a "successful" way and alluded to the general failure of photography for this purpose. To elucidate this failure they began covering the large wooden frames with black sheets when presenting them at exhibitions in order to amplify the absence shown; they have since directed their artistic strategies to more activist ones. Morris asked if it is in any case enough, for the issue of climate catastrophe, to stick to one's professional (scientific) role and what might be done to reach emotions of urgency, anger, hope and solidarity.

### **SECTION: Climate Knowledge, Climate Control**

In the afternoon, the focus shifted to the history of climate impact on agriculture and climate control. Gisela Parak (Art History, Academy of Arts, Stuttgart/Germany, Washington University St. Louis, USA) took a close look at the early collections of aerial survey photography in the United States from the 1940s to the 1970s. She showed how the remote bird's-eye view was used here to demonstrate climatic conditions of territory and indicate manageability by focusing on technologically formed urban and rural landscape patterns. The photographs presented patterns of linear manmade marks in strong contrast to any notion of "wild nature": the very regular patterns made by drills, the parcelled-up structure of fields and the regular grids of streets and settlements. Simultaneously, the aerial photographs revealed the negative impacts of technological changes of nature like environmental damage and air pollution. Parak elaborated how the early picture patterns and motives developed into common icons which visualized environmental and climatic issues.

James Fleming (Astronomy, Atmospheric Science and History, Science, Technology, and Society Program, Colby College, Waterville, Maine, USA) took a critical look at the history of climate and

geo-engineering. He contrasted the ideas of vast geo-engineering concepts with science fiction and Greek mythology by showing a collection of works from art history and cartoons from the 20th century on the subject. The pictures he presented had something in common: they demonstrated human supremacy over nature through technology within a simple logic of cause and effect, most clearly epitomized in an image of a white man controlling the weather by turning the paddle of a machine while looking into the sky or by shooting a vast chemical weather weapon up into the clouds. He analysed how ideas of weather control have always been based on a certain mythical notion of human ability to control the atmosphere which doesn't sufficiently acknowledge its tremendous complexity. He questioned the reasons for the proximity of military developments and geo-engineering.

### **SECTION: The Epistemic Value of Visualization in Climate Sciences**

Sebastian Grevsmühl (Cultural & Media Studies, History of Science, Centre Alexandre Koyré CNRS / EHESS, Paris/France) took as an example the development in the 1980s of the visual metaphor of the "ozone hole" to explain how the visual creation of geophysical invisible phenomena takes place. He described how, with the scientific method of isolines, the hole was rendered visible as an imaginable object which hadn't been obvious at all with the help of other methods like curve charts. By going back to the early history of isolines he showed what difference it makes epistemically to draw isolines to envisage geographical data patterns. Only with the help of the isoline method could a hole could be "created". Such visualization methods are key methods for climate sciences as they are powerful instruments for making visible invisible measurements and data. With the help of visualization methods, powerful images have been created with which to communicate and discuss scientific climate issues. Grevsmühl very subtly discussed the difference between the "ozone hole" metaphor and the scientific object, and why it became natural to speak of a hole in the sky.

In his talk, Thomas Nocke (Computer Graphics, Potsdam Institute for Climate Impact Research, Germany) gave many examples of present visual data exploration methods for the purpose of climate research and presentation purposes. He differentiated between tasks and user groups of visualization methods, pointing out that a "graphic is not drawn once and for all" (J. Bertin). He explained that graphic analytics always seek to find the golden mean through antagonisms like aesthetics versus scientific quality regarding the complexity of the climate system versus the need for graphic simplification. He presented data visualization software which meets these requirements by giving a multi-view interactive visual analysis of climate data. This means that users can surf through the data and change parameters and perspectives by themselves. Nocke used the examples of ensemble visualizations, network analysis systems and visualizations with parallel coordinates.

The conference brought together a great variety of images picturing climate and climate change. It gave an overview of a large spectrum of languages, styles and strategies which all seek to make climate phenomena, climate change or climate impacts visible. These included scientific ways of creating evidence like isolines; cartographic and statistical ways and heuristic ways; styles of normalizing or alarming, rhetoric, artistic, activist, cultural, imaginary, misleading or deceptive/tricky, provoking or shocking, playful and entertaining styles; educationally instructive ways; ways which seek to be evident, true or objective; and finally perspectives of manageability and science-fictional styles. It finished with a discussion of the limits images have in helping to make climate change more meaningful: there remains a large gap between knowledge and action which images alone might not be able to bridge.

For more information see <http://www.climatepictures.net>