

Workshop “Integrated History and Philosophy of Climate Data”

Organisers: Dania Achermann and Julie Jebeile (both University of Bern, Oeschger Centre for Climate Change Research)

Date: 25-27 August 2021

Location: University of Bern, Switzerland

Deadline for abstract submission: 22 March 2021

Confirmed keynote speakers: Alisa Bokulich (Boston University), Stefan Brönnimann (University of Bern, OCCR), and Matthias Heymann (Aarhus University)

Climate data encompass a broad range of heterogeneous data, from paleoclimate proxies to climate model outputs. In the scientific practice, there are inherent issues of production and use of climate data. In this workshop we will investigate the potentials and limits of *Integrated History and Philosophy of Science* (IHPS) for analysing climate data production and use.

History of science studies the development of science in its socio-cultural context while philosophy of science aims to reflect, on a normative basis, on the instruments and methods used to produce scientific knowledge. *Integrated History and Philosophy of Science* (IHPS) contains the idea that history of science and philosophy of science could and should benefit from each other. On the one hand, philosophical concepts of science are used in history of science. Reflecting on these concepts “can elucidate historiographical categories, justify historiographical choices and, thereby, enrich and improve the stories that historians tell about past science as a knowledge-producing enterprise” (Arabatzis 2017: 70). On the other hand, philosophical concepts of science are supposed to apply to practices situated in a social and cultural world. Therefore, they should be elaborated or revised in the light of the socio-cultural contexts that historical studies provide. However, the HSP discussion does rarely leave the disciplinary boundaries of philosophy, and the dialogue across the disciplines is challenged due to diverging goals and understandings of what *history* or *philosophy* should achieve.

This workshop therefore wants to bring historians and philosophers interested in climate science into a conversation with each other. Our goal is 1) evaluating how philosophy and history can benefit from each other’s work and approach, and 2) discussing how we can combine our approaches in order to study climate data in an innovative way.

We believe that an integrated history and philosophy of science perspective is particularly relevant to study climate data. Philosophical questions related to data ask to which extent data count as evidence, and how scientists can gain understanding from data models. Historical research shows that the methods, technologies and practices in producing climate data have a history, and how they are shaped by their social, cultural and political contexts. We agree with Leonelli that “thinking about the complex history, processing and use of data can encourage philosophers to avoid ahistorical, uncontextualized approaches to questions of evidence, and instead consider the methods, skills, technologies and practices involved in handling data ... as crucial to understanding empirical knowledge-making” (Leonelli 2020). We want to further explore how can historical insights into the role of socio-political agenda, institutions and instruments in scientific research and data production enrich or change epistemological inquiry? And vice-versa, (how) can we make historical studies on climate data richer and more coherent by integrating underlying philosophical concepts? And beyond “enriching” historical research, what *new* historical questions may be asked when including philosophical considerations?

Possible questions and topics for presentations may address, but are not limited to the following:

- What are climate data? How have climate data been generated and analysed in the past?
- How have their multidisciplinary origins been negotiated in climate science?
- How have such data “travelled” through space, time and disciplines? Does data travelling come with specific methodological difficulties?
- How have instruments, institutions, disciplinary cultures, politics etc. influenced the generation of climate data and data travelling?
- How has the heterogeneity of data sources (ranging from satellite observations to paleoclimate proxies) and data quality been negotiated in the past? What epistemological issues does this heterogeneity of data sources raise?
- With respect to evaluation of data and scientific understanding: what are the differences between the various methods of data production (computer models, scientific instruments, proxies)?
- What are the historical and epistemological reasons why climate data are uncertain, of limited reliability and incomplete? How do these limitations impact our historical and philosophical understanding of data as a basis of evidence?
- What are the concepts that need philosophical clarifications for historical inquiry? What can a conceptual analysis of data, proxies, models, representations, or idealisations bring to history of science?
- What does historical contextualisation bring to philosophical analysis of data practices and analysis and the evidence derived from it?
- ...

The workshop is intended as an exploratory and interdisciplinary meeting to bring together historians, philosophers and climate scientists interested in climate data and in discussing the potential and limits of IHPS in this context. If interested in participating, please send an abstract of max. 300 words and a short bio to: achermann@uni-wuppertal.de and julie.jebeile@philo.unibe.ch. Deadline for abstract submission: 22 March 2021. Please indicate in your application whether you need travel funding, as there might be external support for young researchers in particular.

Cited literature:

Arabatzis, Theodore 2017. "What's in It for the Historian of Science? Reflections on the Value of Philosophy of Science for History of Science", *International Studies in the Philosophy of Science* 31: 1. pp. 69-82.

Leonelli, Sabina 2020. "Scientific Research and Big Data", *The Stanford Encyclopedia of Philosophy* (Summer 2020 edition), Zalta, Edward N. (ed.). <https://plato.stanford.edu/archives/sum2020/entries/science-big-data/>.