

Introduction

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With 1 Figure

On November 14th and 15th, 2007, the German National Academy of Sciences Leopoldina held a workshop at the Georg August University Göttingen in collaboration with the Research Training Program 1024 (*Graduiertenkolleg*) “Interdisciplinary Environmental History” of the German Science Foundation (DFG). The subjects of this workshop offered a certain but programmatic ambiguity: “Elements and Continents”.

Why is it that “Elements and Continents” can be worth of being discussed prominently in environmental history in the days of climatic change, global dimming, flooding Central America, impending volcano eruptions etc.? In fact, hazards and catastrophes were core subjects of environmental history at its beginning. Evenly the beginning of German environmental history is marked by the famous analysis of the large earthquake and landslide of medieval Villach, which was published by Arno BORST in 1981. But environmental history has turned into broader scopes and views of what is usually addressed as the two-realm-area of “Man and Environment” in history during follow-up studies. The interest in events later to become issues of environmental history has never been the interest in events as such but is has always been the interest in structures behind those events. This is not talking about structures in terms of natural principles or laws that govern the natural. It is about structural components of the human action in coping with challenges of their natural and culturally transformed environment. It is mentalities and human perception that form the character of human responses. Those responses necessarily depend on times and places, depend on cultures, on attitudes, and whatever features else. Thus they might be judged as arbitrary, or random, or superstitious, enlightened or sophisticated. But they are the result of a specific and structured concept of and towards the natural. More than that, they are “rational” in terms of stringent patters of actions within a given society. If they were merely consistent, any historical study would be useless.

Historical studies turn the past into experience by recollection. If we are interested in a continuing and sustainable environment, we ought to understand how humans interact with their environment. There is no understanding of this interaction if we do not understand the structures that shape and influence human perceptions and human concepts of the environment. There is a clear difference between a reflected action and a reflex action, as the reflex is usually considered of being free of reflection. However, as any human action, even reflexes are influenced. They are influenced for example by the tacit knowledge that underlies a given society. We are not taught superstition, we live it. We might be educated in style, but mostly, we live it. We are not introduced to matters of course, we live them. All these form powerful influences on our reflexes as well as on our reflections. But, if history was only a sequence of enlightened positions and rational arguments, any attempt of historicization and historic analysis would be unnecessary. Instead, historic analyses refer to factors and conditions that influenced aims of actions and thoughts of individuals beyond the obvious and beyond the rational.

During the past two decades Environmental History, especially in the German speaking countries, has slowly changed from an “uncommon ground” towards a “common ground” in historic sciences and the humanities. Mostly because of solid, sometimes popular work, and in a few cases even through world sellers like John MCNEILL’s *Something New Under the Sun*. The daily business in environmental history has identified so many interesting fields of research and dedicated its work to subjects so various, that quite a few contributions have already left far behind basic questions of epistemic significance and of shaping the field. In fact, many papers not even refer to epistemological issues. It appears as if there was a common feeling for the underlying structures. Scholars seem more attracted by their actual problem and take the crude assumption for granted that environmental history is what environmental historians do. But we (BH and CD) were brought up in our sciences that one should never explain a phenomenon through the phenomenon itself. Therefore, we appreciate William BEINART’s presence at this conference, since he was one of the first scholars to attempt a definition for environmental history. Definitions however provide an inclusive epistemological framework.

Given this situation, what would be the guideline for graduate students to orientate, to see and understand mainstream epistemes in environmental history rather than developing a vague feeling for them?

In the field of history of science there is an approved strategy to get down to the essence of a field by a set of operations. Most common is “the rethinking-approach ...”. So, rethinking environmental history does mean to newly discover or invent its basics, while the full knowledge that has been brought up since its beginning is in the back and available. If one prefers, this is sort of an “*against the grain*”- or an “*a rebours*”-strategy to locate *ex negativo* the basic ideas.

The major prerequisite for environmental history is space, where humans can exist. And space is made of and filled with matter. There are different spaces on earth suitable for human living. These spaces differ not by matter but by arrangements of matter, shaping the unique challenges of those spaces for human responses. Therefore we have identified matter and space as a baseline for environmental history. Humans entered those spaces only long after the spaces had been formed. However, once in those places the coevolution of the two systems “man” and “environment” started. Coevolution is the process where human opinions come into play, opinions provided by experience and ontological assignments. Neither “man” nor the “environment” does exist in sheer objective and absolute way. Jakob VON UEXKÜLL discovered the specific and species depending “environment” (which is admittedly far from his ideas, today). Ernst CASSIRER transformed this idea into his definition of man as “animal symbolicum”, demonstrating that the only approach where humans can experience the environment is through symbolic forms.

So, whoever deals with environmental history has to be aware not only of the natural principles that govern matter and space, but has to consider predominantly human opinions about matter and space. If there is any doubt about that, just recall human attitudes of using the environment. A society practicing a natural religion surely has different opinions on matter, space and the bio-components than a technically improved and enlightened society.

It is remarkable that opinions about the matter that influenced human ideas about “nature” and the “natural”, not only in European societies but in many other cultures, basically refer to the elements “fire, water, soil, and air”. It is not necessary to go into details of presocratic philosophy and its influence on harmonistic concepts (cf. BÖHME and BÖHME 1996). The ancient ideas were transformed into corresponding scientific concepts as the four directions, associated with deities, colours, landscapes and human compositions. What became the ancient

humoric system of GALEN survived in a very practical way and coined concepts of science during the transformation process from magic to experimental science, to enlightened and rational positions.



Fig. 1 This Map by Henricus HONDIUS from the early 17th century exhibits the founding influence of the “four elements” and related ideas based on the number four for the emergence of science and for the reception of the natural world. At that time only four continents were known. They were corresponding to four seasons, four winds and four large rivers. (Atlas Major of 1665 [2005], p. 44; by courtesy of: Bijzondere Collecties, Universiteitsbibliotheek Amsterdam – UvA.)

This and related reasoning finally brought up the idea of this conference: “Elements – Continents – Approaches to determinants of environmental history and their reifications”. Two main fields have determined the relations between man and nature in the course of history. Our intention was to encourage rethinking by linking the features of the two fields with modern environmental history approaches.

The first main realm refers to those elementary qualities which have been relevant since the beginning of history because of their material quality and, at least since antiquity, because of their metaphysical quality. These “elements” are fire, water, air and soil. They mediate directly between man and nature used and exploited by him.

Stephen PYNE pioneered the environmental history of fire. Fire is the element that has shaped a whole continent (Australia) in a specific way and accompanies humans in history in so many and culturally important ways. Britta ALLGÖWER’s (Zürich, CH) approach demonstrates the impact of fire on natural and cultural issues in an ideal type of a microhistoric study.

The overview on water by Petra VAN DAM (Amsterdam, NL) has much to do with her Dutch homeland that was in some ways water born. It was not only the purveyor of what became the Netherlands but helped also to defend and protect the country. It provided an infrastructure and helped the Dutch early exploiting their bogs as fossil energy source. Since water comes in different conditions of aggregation, her paper also focuses on aspects of steam and ice. As a surprising outcome Petra VAN DAM points to a desideratum in research since knowledge on fresh water supply during the frost season has not yet been investigated in detail.

“Air” probably is the most investigated element on earth at present, since it carries climate, microorganisms, pollution, and energy in terms of storms that scare people. We are understanding the role of “air” within the climate context, the most important issue for humans within forthcoming years. Thus the contribution of Wolfgang LUCHT (Potsdam, D) is the timely approach to link insights from science with humanities. Climate change turned out to provide very strong push and pull factors for the development of civilizations during human history (e.g. ISSAR and ZOHAR 2004).

All life depends on water, but most organisms cannot survive without being linked with soil, be it directly or indirectly. In fact, there is more life (biomass) in soils than on top of its surface. However, humans walk on the ground and tie their cultures to it. Obviously this is done more intensively than we would expect. For example, only for a short time we have known that “untouched pristine rainforests” of the Amazon have a long lasting history of anthropogenic soils (WOODS et al. 2008), but the anthropology of soil (HERRMANN 2006) has still to be written. Hans-Rudolf BORK (Kiel, D) and colleagues outline the principles of scientific understanding of soil.

By introducing a fifth element along with the four, the Göttingen workshop presented a special variant: the diversity of organisms. This corresponds to a minor extent to a philosophical understanding, where “life” cannot only be seen as a mere additional quality of material components. Here it rather corresponds to a rhetorical gestus, by which the workshop focused on the truly “elementary” importance of biodiversity. By giving his abbreviated version of life on earth Max VON TILZER (Konstanz, D) illuminates the many facets and the importance of biota for whatever approach to environmental history. His contribution was given as the public evening lecture.

The second main realm refers to the material equipment of large human living areas for which the term “continent” stands. The natural determinants fauna, flora, microorganisms and qualities of soil determine the spectrum of possibilities of anthropogenic land use but also set limits for human activities. We have looked for scholars that will either provide outlines of environmental history for given continents, or who are specifically concentrating on aspects that are underrepresented in environmental history approaches. We appreciated that this idea could successfully be realised.

Concentrating on its “special course” Rolf-Peter SIEFERLE (St. Gallen, CH) opened the second section with a concise environmental history of Europe. William BEINART (Oxford, GB) made accessible how mistaken Afrika’s contribution is to resources that are nowadays used globally by humans. Since “Asia” is far too big to be dealt with in a short conference contribution, Mark ELVIN (Canberra, AUS/ London, GB) kindly concentrated on the hottest spot of human history in Asia, namely China. The experience of Thomas BARGATZKY (Bayreuth, D) as ethnologist doing field work in Australia and Oceania reminds us that ideas of “continents”, “land”, and “soil” are all concepts of the mind. He pointed out how deeply they interfere with human approaches of nature, the natural and the self-understanding.

As one could assume, there is no “special message” from the workshop, the outcome is in the papers that could be jointly published through the help of the Academy. It was important at least to us, that the workshop helped to recall that environmental history owes a lot to previous ideas, thinkers and scientists and how lively and even fruitful it can be to change directions of viewing.

The workshop would not have been possible without the help and assistance of many people. First, our thanks go to those scholars who made the workshop possible by their lectures. All of them are renowned colleagues from the environmental history community. Most of them turned into friends over the years, which brings us to a very personal “Thank you” for their support and cooperative friendship in realizing this event.

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