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Confronting the Pitfalls of Current Environmental History: An Argument for an Organisational Approach

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SUMMARY

The essay outlines and criticises three prominent features of current environmental history writing: the idea of history as negative progress, the rhetoric of 'on the one hand' – 'on the other hand', and the use of the term 'capitalism'. It is argued that these notions impede rather than help historical analysis and should be abandoned in favour of more differentiated concepts. As an alternative, the essay proposes focusing on the process of organising responses to perceived environmental problems. This process is subdivided into six stages, with special obstacles and problems to be solved at each of them. The 'organisational approach' offers a useful analytic tool for understanding the rationale behind the seemingly irrational, and allows analysis of the degree in which societies were able to control and regulate their environmental impact. After discussing the advantages of this approach over current ways of writing environmental history, the essay concludes with a brief reflection on how an organisational approach would allow historians to contribute to contemporary environmental discussions in a more productive way.

There is something strange about environmental history. While solid historical research still is a desideratum in a large number of fields, optimistic prospects on its future abound, with high hopes that it will transcend disciplinary boundaries and lead to a new green paradigm.[1] While German environmental historians discuss the far-reaching theoretical concepts of Rolf Peter Sieferle and Paul Leidinger, there is not a single essay which uses these approaches in practice.[2] And when two students at the University of Basel set out to write the conclusion of a series of lectures on environmental history, they found that the result was confusion rather than clarification.[3] In spite of fifteen years of research and an

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even longer tradition in the United States, confusion prevails in the field.[4] It is no exaggeration to say that the present state of environmental history is set somewhere between a new, promising field of historical research and a temporary fashion.

This situation needs an open discussion of the methodology of environmental history, and this essay intends to contribute to such a discussion. It is my intention to analyse several recurring themes in environmental history writing, namely the idea of history as negative progress, the rhetoric of 'on the one hand' – 'on the other hand', and the use of the term 'capitalism'. These notions may have played an important role in the process of establishing the field of environmental history; but for the further development of research, it is necessary to analyse them in terms of heuristics, and it is the intention of this essay to demonstrate that these notions impede rather than help historical analysis. Their attractiveness is mainly normative; in the interest of historical understanding, environmental historians should seek for more differentiated concepts.

As an alternative, this essay puts forward an organisational approach to environmental problems in history, which means that historians should focus on the process of organising responses to perceived environmental problems. In this perspective, the definition of an environmental problem always results from the perception of a divergence between objective natural conditions and certain political, economic or cultural norms and values. This understanding of environmental problems keeps its distance both from cultural relativism and from environmental determinism, which assumes that a single definite 'interest of nature' provides an exhaustive guideline for the human use of natural resources. The organisational approach then focuses on the political process that followed from the perception of the environmental problem, to analyse how the problem's definition was transformed into reformative action. Such a perspective will allow historians to understand the potential for environmental reform in a given historical context. After describing the heuristic advantages of the organisational approach, the essay finally presents a different concept of how environmental history might contribute in a more productive way to contemporary environmental discussions. For practical reasons, the primary focus is on the history of Western countries in the 19th and 20th centuries. It is beyond my competence to determine whether this approach may be useful for earlier times and societies other than modern.

But it seems necessary to point out as well what this article does *not* intend to do. First of all, I do not intend to address the general questions of normativity and positivism, or even to argue for a supposedly value-free environmental history. Neither do I want to criticise the set of values that environmental historians subscribe to, nor argue for the adoption of new values, not least because I agree with a number of these values. But even the most noble of all values can be useless for the historian, e.g. if it leads him to repeat the same type of story over and over again or if it makes all cats look grey at night. In other

words, it is not the normative assumptions themselves that I want to discuss, but their usefulness for historical analysis. A normative standpoint that is extremely important in contemporary political life may be completely useless in heuristic terms, and it is the latter perspective that I am adopting in this article.[5]

Secondly, it seems important to stress that I did not intend to write a review article. An adequate review of the books referred to would require a much broader and more intensive discussion than the one that follows.[6] My concern is with certain recurring notions in environmental history writing, and to make my points, it is necessary to trace these notions in different books, while leaving other aspects of those works undiscussed. Environmental history is sufficiently self-conscious to know about its merits but has shied from discussing its weaknesses, and if I am emphasising the latter, this neither means nor implies that I am denying its accomplishments. The main concern of this article is not to describe the state of knowledge environmental history has reached, but to show where self-criticism is necessary for the further advancement of research.

1. HISTORY AS NEGATIVE PROGRESS

Few people would argue that environmental historians believe in progress. In fact, it has been a recurrent theme in their writing to criticise this notion.[7] But still, a critical reader of environmental history books sometimes notices a feeling of déjà vu: the old idea that history is a more or less linear path toward a certain goal is still alive, in spite of determined abjurations to the contrary. Thus, the idea of progress is leading a strange afterlife: environmental historians have turned its vector upside down, but retained the idea of linearity. The notion of history as negative progress is an important motive in environmental history writing, and sometimes, it is even the dominant theme.[8]

There is a wealth of literature that could serve to illustrate this point. The book that I have selected is Clive Ponting's *A Green History of the World*. In this synthesis of human history from an ecological point of view, the central question in history is whether humans have been successful 'in finding a way of life that does not fatally deplete the resources that are available to them and irreversibly damage their life support system'.[9] In other words, permanent ecological stability is the standard by which history is measured; and not surprisingly, mankind has almost everywhere failed to live up to this standard and live in harmony with the environment. In this perspective, hunting and gathering 'was without doubt the most successful and flexible way of life adopted by humans and the one that caused the least damage to natural ecosystems'. But far from being the heroes of the story, hunting groups may have caused the extinction of the mammoth and other large animals, while 'the first American settlers [i.e. the ancestors of today's Native Americans] left a trail of destruction across the continent'.[10] In essence, Ponting has diligently compiled a list of mankind's environmental sins,

and the basic trend is that, with few exceptions, our impact on the environment has continued to grow. Consequently, the present crisis of industrial society is only 'the most intense phase' of a development that 'has been under way for thousands of years since the first potters and metal workers, the introduction of the first water power sources two thousand years ago and the increasing use of machinery in Europe and China after about 1000'.[11] 'From an ecological perspective, the process [of developing new techniques and modes of production] appears as a succession of more complex and environmentally damaging ways of meeting the same basic human needs.'[12] World history is portrayed as one great path of parasitical abuse and destruction, so when he finally states that 'it is clearly far too soon to judge whether modern industrialised societies [...] are ecologically sustainable',[13] this seems like sheer hypocrisy.

Pointing's book shows that the notion of environmental history as negative progress serves excellently for writing a fulminatory indictment of the whole of world history. But in analytic terms, the idea of a negative linearity is not much more convincing than a positive one. It squeezes complex developments into simple schemes, and this narrative only tells *what* happened, but does not offer any explanation *why*. In addition to this heuristic banality, the notion causes conceptual problems. One of them is discussed in the following section. Time and again, environmental historians have faced a difficult question: how should they eveluate environmental losses if they entailed positive effects on society? So far, these two conflicting perspectives have only been reconciled rhetorically.

2. HOW A HISTORY OF LOSSES DEALS WITH THE GAINS: THE RHETORIC OF 'ON THE ONE HAND' – 'ON THE OTHER HAND'

Whenever environmental historians have talked about the merits of industrialisation and urbanisation they have used a certain idiomatic expression. Either implicitly or explicitly, historians employ a rhetoric of 'on the one hand' – 'on the other hand'. Donald Worster does so, writing on the evolution of civilisation, 'Some will insist that there have been significant gains in that shift and strong, compelling reasons for making it. True enough, but all the same the transformation did not come without costs, ecological as well as social, and a large part of the new planetary history must entail calculating those costs and determining who or what paid them and why.'[14] So does Robert Gottlieb in *Forcing the Spring*: 'On the one hand, the industrial city became a source of great wealth and a symbol of progress for those directly benefiting from the industrial and urban expansion of the period. On the other hand, this very same expansion, with its belching factories, polluted waterways, and untreated and sometimes uncollected wastes, became, for many poor and industrial workers, an environmental nightmare that seemed impossible to escape.'[15] So does Christian Pfister on the relative decrease of energy costs: 'On the one hand, it opened new scopes of

action and ways for satisfying human needs; on the other hand, this initiated the vicious circle of unreflected, wasteful, environmentally harmful use of resources'.[16] So does Franz-Josef Brüggemeier: 'Industrial production did not just result in a steady increase of products for purchase, it also produced wastes and pollutants' on an unprecedented scale.[17] So do Arne Andersen and Jakob Tanner: 'We all need to ask ourselves whether the path of consumerism [...] with its promise of the land of milk and honey equally meant an expulsion from Paradise, with the result that a social perception of nature evolved that put at risk the foundations of human production and reproduction.'[18]

The words may differ, but the idea is the same. The authors acknowledge positive aspects of the process of modernisation, but in doing so, they apparently feel compelled to add that the same process also created severe environmental problems. In this way, gains and losses are juxtaposed, but not discussed any further. The authors give no suggestion on how to weigh them against each other. The message is a rather subliminal one: 'Never forget the environmental losses!'

It is rewarding to analyse the rationale behind these statements. The basic assumption is that a narrative of environmental deterioration alone does not do justice to the complex process of industrialisation. The authors accept that the very same processes that led to environmental degradation also had important and irrefutable advantages in several respects. As a result, the authors need somehow to assess the merits of civilisation and industrialisation. But for historians who see environmental problems primarily through normative lenses, this creates a dilemma: through acknowledging certain merits, they risk legitimating environmental losses that accompany social gains. The authors want to accept certain gains for society, but not the corresponding losses in environmental terms. Simultaneously, it is very difficult to weigh up the merits against the costs; the environmental movement has not developed undisputed criteria for comparing the value of a tree in ecological terms with the value of a book in social terms, and one may doubt that these criteria can be found at all.

The rhetoric of 'on the one hand' – 'on the other hand' is simply a stylistic trick to evade this dilemma. Using this expression, the authors divide a single historic process into two narratives that are intrinsically linked but separated in their evaluation. The one deals with the positive side of industrialisation and urbanisation – from a safe and abundant supply of food to improved sanitary conditions. The other story is about the process of environmental degradation – the negative side. Jost Hermand calls this ambiguity the 'dialectics of prosperity and exploitation of nature'.[19] However, defying the rules of dialectics, neither Hermand nor anybody else has yet tried to outline a synthesis. The tension between the two perspectives is not dissolved; the rhetoric of 'on the one hand' – 'on the other hand' merely skilfully conceals the paradox that the very same historic process is simultaneously evaluated positively and negatively.

It remains doubtful whether the dilemma can actually be solved.[20] However, it is quite easy to avoid it altogether, for the dilemma is essentially a home-made

problem. It only exists because environmental historians have treated industri-alisation primarily as a development 'at the expense of nature' (Brüggemeier). Thus, they make a normative assumption their primary standard of evaluation.[21] But nobody forces environmental historians to make normative assumptions on the non-desirability of environmental degradation the cornerstones of their interpretation, still less since these assumptions are of little heuristic value. For the paradigm of decline and the dialectics of 'on the one hand' – 'on the other hand' has stopped historians at a point where they should start asking their questions. It suggests industrial growth to be proportional to environmental losses, thereby reiterating an old-fashioned view of linear progress with different valuations. But the notion of negative linearity does not fit historic realities any better than its progressive counterpart. For almost every new technology, different paths of development were possible, the setting of courses was eminently a social event, and environmental aspects have always been a factor in the processes that decided upon paths (though they may not have been expressed in ecological terms). Modern history of technology abstains from technological determinism and instead acknowledges the complexity of past developments, and it is time for environmental historians equally to search for concepts that do not squeeze complicated processes into the corset of a linear development. Joachim Radkau emphasises the need for medium-range theories in environmental history as an alternative to simplistic teleological models, and one way to fulfil his postulate – though certainly not the only way – is the organisational approach.[22]

3. 'CAPITALISM', OR ON THE ECOLOGICAL DESIRABILITY OF INDUSTRIALISATION

It is surprising to see what environmental historians are surprised about some-times. Donald Worster is apparently amazed by the fact that, 'even in this age of high-tech euphoria, agriculture remains essentially a matter of plants growing in the soil'.[23] In all innocence, a stunned Andrew Hurley states that, 'indeed, industrialisation in the United States flourished within a legal system that encouraged the manipulation of both public and private property for productive use'.[24] And Theodore Steinberg wisely notes on modern property rights, 'Nature under such a system is a resource, a simple utility destined to be controlled and manipulated to serve largely economic ends.'[25]

It may be a bit unfair to quote statements of this kind, especially if the authors are presenting some commendable work in other parts of their books. But there is reason to believe that these quotations are not simply excusable 'accidents', but rather the logical outcome of an approach that seems to become increasingly popular in environmental history writing. According to this approach, the key to an understanding of the relationship between man and nature in modern societies

lies in their dominant capitalist culture. Capitalism is defined as a posture that perceives the wealth of nature exclusively in monetary terms, which implies a manipulative and exploitative behaviour that disregards ecological concerns. Therefore, capitalism results in a huge environmental toll. For this approach, it is insufficient to analyse the resulting environmental problems in their own right: these problems are only symptoms of a society's obsession with capitalism. Some historians even suggest a proportional relation of monetary gains and environmental costs: 'The highest economic rewards go to those who have done the most to extract from nature all it can yield.'[26]

One may criticise these assumptions as ideological. However, the central question for the historian is always whether they are fruitful in analysing the environmental aspects of history. Does it provide any new insights when ecological damage is interpreted as a logical consequence of a prevailing capitalist mentality? The idea certainly has its heuristic merits; but equally, it is apparent that capitalist societies have taken a lot of different shapes. There is no prototypical form of capitalism in history but a huge variety of capitalist modes of production which range from the conservationist to the environmentally disastrous. However, present studies use the term 'capitalism' in a monolithic sense that is of little help for interpretation. In Andrew Hurley's thesis on the steelworks of Gary, Indiana, the term 'capitalism' is useful only to condemn politicians and industrialists alike, and to celebrate protest as a 'significant challenge to industrial exploitation of Gary's environment'.[27] The fact that industrialists had an interest in making profit and that this practice was socially accepted is scarcely a new insight resulting from this approach. And describing environmental movements as challengers to 'industry's environmental supremacy'[28] results in confusion rather than clarification. When Hurley states that the capitalists sought to maintain their 'environmental authority',[29] it follows that industrialists allowed air pollution to continue not because of the costs of reducing it, but for the sheer fact that only through emitting pollutants could they preserve their power over nature and labouring people alike. This, of course, is nonsense.

The concept of 'capitalism' causes similar problems in Theodore Steinberg's *Nature Incorporated*. Steinberg refuses to see that the conflicts he describes are simply those between different concepts of water use. He constantly talks of the 'exploitation of waterpower', 'redesign of nature' and 'aggressive stance toward the natural world' that industrial use of water allegedly implied. However, it tells more about the author's normative preferences than about history when Steinberg writes that a dam 'represented power over nature'.[30] Detecting a 'drive to triumph over nature' behind the rise of the Waltham-Lowell system simply perpetuates an old-fashioned history of technology with its belief in progress and the opposite valuation.[31] And when he notes that 'there were others living here who dared to challenge' what he calls 'the intrusion of industrial capital',[32] he seems to think (or maybe to hope – he speculates whether they were defeated in court

because they 'have subscribed to some of the same assumptions as the company'[33]) that the issue at stake in the lawsuits was industrial progress and not conflicting interests and different concepts of water use.

In his *Dust Bowl*, Donald Worster constructs a teleology based on the 'capitalist approach': 'The Dust Bowl [...] was the inevitable outcome of a culture that deliberately, self-consciously, set itself that task of dominating and exploiting the land for all it was worth.' The disaster was predetermined the moment that the white man's settlement reached the southern plains, for 'it came about because the [capitalist] culture was operating in precisely the way it was supposed to'.[34] In other words, the Dust Bowl was something like an environmental nemesis; farmers could not escape their destiny except through renouncing capitalist society, which only 'a few wise farmers' have done meanwhile. But 'from the beginning of settlement, the plainsman was intent on turning the land to more and more gainful use', and as a result there is little hope for reform within the current system.[35] Therefore, the history of the Dust Bowl attests only to the 'social and ecological vulnerability' of that 'mass production-mass consumption economy', which 'holds the community in its grip as firmly as ever'.[36]

No book gives better proof of the fact that this approach is used not because of its heuristic capacity but because of the value judgements it implies than Theodore Steinberg's *Slide Mountain or the Folly of Owning Nature*.[37] It tells the story of five difficult legal disputes where property-related laws had strange consequences. Combining the banal (that property rights are cultural constructions which imply the possession of nature in the sense of natural resources) with the absurd (that the strange consequences of a few fringe cases prove the foolishness of the law itself),[38] Steinberg writes a satiric narrative of these lawsuits, constantly reminding the reader through his rhetoric how inherently stupid these conflicts were. His apparent goal is neither to understand the ecological implications of these legal cases nor to make any other new findings through their study and interpretation. The lawsuits serve only to illustrate what Steinberg already thought from the outset: that capitalism is evil, exploitative and unable to exist permanently, or, to use his terminology, that capitalist society is 'dedicated to control' nature and perceives it exclusively in terms of property; that 'twentieth-century America is a society obsessed with mastering nature technologically [...], no matter what the cost [!]'; and that it is impossible to own nature because of 'the natural world's continual resistance to human meddling'. Taking the exception for the rule, Steinberg believes that his narrative 'suggests the weaknesses of a system of thought that centres so thoroughly on possession', and that, in conclusion, modern U.S. society is 'a culture lost in a fantasy world'.[39]

Steinberg's book is the (temporary?) culmination of the 'capitalist approach'. At the same time, it is the best proof that this approach in its present form is little more than a vehicle for an indictment of industrial society. The heuristic uses of a monolithic concept of capitalism are limited, since it allows no

differentiation between different modes of capitalist production. As a result, the history of modern societies becomes a recurring narrative of ecological sins that stem from the same causes and have more or less identical (i.e. disastrous) results. It is not the least peril of which environmental historians need to be aware that their field may soon earn a reputation for being boring. No less a historian than William Cronon has warned that, 'Were all environmental historians to embark on an analysis of agroecosystems of the sort Worster proposes, I fear they might soon discover themselves telling the same story, albeit in different times and places, over and over again.'[40]

4. OUTLINING AN ORGANISATIONAL APPROACH

In contrast to these dominant streams in current environmental history, an organisational approach does not intend to give any generalised statement on the ecological desirability of a society. Its goal is, in a way, more moderate: it provides a useful analytic tool for understanding environment-related behaviour in modern history. In order to study how people have dealt with environmental issues, this approach traces the process of organising responses to perceived environmental problems. For analytic reasons, this process may be subdivided into six stages. The first one deals with the definition of an environmental problem. From the historian's perspective, a problem exists for either a group or an individual when the observation of the human environment conflicts with normative ideas about its condition. As a result, there is an almost limitless scope for possible definitions of environmental problems; from an organisational perspective, there is no such thing as an objective interest of nature which may serve as a yardstick. Instead, existing definitions need to be analysed for their social, economic, cultural, and ecological implications. The definition of the problem has far-reaching consequences because it implies basic decisions on the nature of the required changes in the environment or in society. At the second stage, the focus is on the possibilities for solving or mitigating the problem that existed within the scope of the actors. Naturally, these possibilities are not static; the process of organising environmental reform may frequently induce a search for new paths. Therefore, the range of reformative options stands in close connection with the third stage, the organisation of political support for reform. Here, the object of study is the evolution of agents – associations, pressure groups, social movements, media etc. – that lobby for change. This step is of special interest for environmental historians because there is no direct, 'natural' representative for environmental issues; therefore, rallying support for environ-mental reform is frequently a difficult task that may result in concessions, compromises or the convergence of environmental and other issues. The fourth stage follows the political struggle about implementing the protagonists' propos-als and ends with the decision in favour of one (or several) of the reformative

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options. The implementation of reform occurs at the fifth stage of the organisational process, and finally the sixth stage deals with the practical consequences and the impact of these changes. Naturally, not every process of organising environmental reform will go through all six stages. The process may be interrupted, e.g. because the designated path of reform involves costs that are refused as being too high. Equally, these stages do not describe a rigid chronology. Stages may overlap up to the point where the historian can only distinguish them analytically, but not chronologically. A process may also fall back to a previous stage; for example, certain events in the process of lobbying in politics may lead to a redefinition of the environmental problem.[41]

An organisational approach thereby provides a scheme which enables the historian to trace the evolution of environmental problems and the ways in which people dealt with them. It helps to understand the reasons why people have chosen certain paths of reform and dismissed others. Each stage of organising environmental reform faces special obstacles and pitfalls, which deserve special attention. Therefore, the process of organising responses to perceived environmental problems includes far more than administrative matters, and it goes without saying that this process is deeply intertwined with social strata, interests, political conditions, and mentalities.

Using this scheme, researchers may frequently perceive that the underlying cause of an environmental problem was a deep split between the individual and the collective rationale.[42] For example, it is completely rational from an individual point of view to dump one's own garbage in the street. For the individual, this solves the problem with the least effort and the lowest costs. But as soon as a larger number of people follow the same rationale, the result is a collective environmental problem. Consequently, there is need for limitations on individual action, to ensure that individual behaviour does not come into conflict with the collective interest in a garbage-free street. And imposing these limitations requires organisational efforts: laws, ordinances, and appeals to the public can establish new guidelines, while organisations – associations, administrative bodies or other types of institutions – are needed to foster, popularise, and enforce them. Organisational efforts are also needed if, depending on the nature of the problem, alternatives to current practices need to be developed, e.g. a municipally-operated garbage collection.[43]

The divergence of individual and collective rationality explains why widespread discontent about an environmental problem frequently coexisted with weak organisational representation. For example, the early spread of the automobile caused a lot of discontent in the population at large. In 1915, Mary Gwynn of Arlington in Maryland/ USA even proclaimed 'a crusade of demolition': 'I suggest one remedy for this monster danger that haunts the waking hours of every pedestrian and hangs like a hideous nightmare over mothers of school children. Let us arm ourselves with hatchets and hack and mutilate every automobile we can get our hands on.'[44] Still in the 1950s, the German Chancellor Konrad

Adenauer was reported to have reasoned, 'If I were not already the leader of Germany's largest party, I would found a party against automobilism, which would be even stronger.'[45] But in the individual rationale improvements that might be accomplished through protesting had to be weighed against the efforts required for political action. Seen in this perspective, the problems caused by automobiles were rarely grave enough to encourage individual action;[46] the automobile was a public nuisance during the first quarter of the 20th century, but not enough of a nuisance to justify serious investments of time and energy in protesting against it.

Apart from avoiding the shortcomings of current ways of writing environmental history, an organisational approach has several heuristic advantages. First of all, it abstains from any tendency to see determinism at work behind environmental decline. It points out that quite frequently, different paths existed for technological development and, in one form or another, environmental considerations played a role in the decision-making process. For example, there was nothing inevitable about the rise of the automobile as the most important means of transportation in post-war Germany. Dietmar Klenke has shown that it was the result of highly controversial policy decisions. His book demonstrates the merits of discussing possible alternative paths against the background of contemporary scientific knowledge and the existing political, social, and economic conditions.[47]

In this context, it is important to note that focusing on the process of organising responses to perceived environmental problems does not, of course, commit historians to a concept of 'trial and error', according to which people are bound to wait until problems emerge before they are able to reconsider and change their activity. Environmental problems can be anticipated and respected from the outset, and the fact that the anticipation of environmental problems frequently resulted in seemingly absurd solutions – e.g. taller smokestacks – should not discourage historians from analysing the rationale behind these responses.[48]

The second major advantage of an organisational approach is that it permits environmental aspects to be expressed in a lot of different manifestations. From an organisational perspective, there is no 'true' or 'ideal' type of environmental protest to which all forms of protest in history may be compared. Instead, it envisions the environment as an immense accumulation of a huge number of animals, plants, landscapes and climates which people can perceive in an almost limitless number of ways. An organisational approach refrains from any a priori definition of nature or environment, apart from a descriptive one. Therefore, an environmental perception is simply every kind of perception that refers to the non-human world. To some of those who have followed the environmental discussions of recent years, this definition may sound insufficient. Environmentalism has reopened the old debate on the definition of nature and the question of how far man is a part of it, and historians have been – and still are – actively

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taking part in these discussions.[49] However, it is far from clear what environmental history will earn through a proper definition of nature. For historians definitions are useful only if they enrich the interpretation; therefore, it is more important for historical interpretation to learn how people envisioned nature and how they dealt with it, rather than defining nature a priori.

This pragmatic interpretation of environmental perceptions poses an alternative to the popular dichotomic distinction between environmentalists and anti-environmentalists (alternately described as 'capitalists', 'industrialists', 'exploiters' or 'experts'). This terminology obscures more than it reveals, for the interesting thing is not *that* a certain number of people were concerned with the environment, but *the way in which* they were concerned. The term 'environmentalism' suggests a basic unity of environmental concerns, which in most cases is constructed from the present point of view.[50] But the present environmental agenda (which is anything but homogeneous itself) is a peculiar result of certain historic developments, and there is simply no reason why past societies should have shared its definition of environmental issues. Using present knowledge as a universal optimum standard impedes rather than helps historical understanding; environmental issues that are intrinsically linked in the current environmental movement may have been separate issues in the past. For example, the antique Roman élite took great care of the fish in their ponds, but equally enjoyed watching these fish being boiled alive because the spectators liked to watch their colour change while dying. Günther Thüry calls this an 'ambivalent' attitude toward animals, but presumably, this behaviour seemed perfectly consistent to these people.[51] This example shows that the application of present environmental standards only reveals how far past environmental awareness overlapped with current concerns, while providing little help for the interpretation of past behaviour. In contrast, an organisational approach does not attempt to squeeze historic modes of perception into a framework that is borrowed from the present environmental discourse. Its seeming vagueness concerning the definition of nature provides exactly the kind of flexibility that is needed for an appropriate interpretation of environmental perceptions and behaviour in history. An organisational approach is not interested in how far past people anticipated themes of current environmentalism; it seeks rather to learn in what way people perceived the environment, which of these observations were found to be problematic, and what kind of action resulted from these definitions.

On the other hand, an organisational approach equally resists the constructivist temptation to analyse perceptions in their own right, without discussing their relationship with factual conditions. Mary Douglas has argued 'that humans pay attention to a particular pattern of disasters, treating them as omens or punishments. On this argument there would always be a mutual adaptation of view about natural dangers and views about how society works: Rewards and punishments are stored in the environment.'[52] Douglas first developed this concept with reference to primitive cultures, but later included modern Western

societies: 'If only because they disagree, we are free to select which of our scientists we will harken to, and our selection is subject to the same sociological analysis as that of any tribe.'[53] Since one cannot treat facts as separate from values, it is illusory to hope for an objective view of pollution perils. Therefore, ideas about pollution are cultural constructions, and scientists need 'to recognise each environment as a mask and support for a certain kind of society'.[54] This model which is agnostic concerning actual dangers of pollution may apply to a limited number of cases, but there is reason to assume that the majority of environment-related conflicts in modern Western societies have a factual basis. This does not mean that there is a correct, 'true' definition. As mentioned above, the definition of an environmental problem is a normative decision by nature. But a lot of norms and values are predetermined through the laws of nature and human condition. Nobody enjoys smelling chlorine, nobody enjoys living in thick coal smoke over an extended period of time, and nobody likes to learn that his food contains poisonous chemicals. It is important for an adequate interpretation of complaints about air pollution to determine the amount of emissions – as far as records permit such statements – and to have a general knowledge of the effects of the substances under discussion; this information illustrates the factual conditions with which norms and values could conflict. Therefore, the point against constructivist interpretations as proposed by Douglas and Wildavsky is that objective conditions, such as natural laws and technological facts, impose limits on perceptions and solutions. The definition of an environmental problem is not an arbitrary construction but the result of a social transformation of certain facts. While a constructivist approach is indifferent concerning the technological feasibility of a remedy, the organisational approach includes the evaluation of the effectiveness of the intended solution as an integral element – for it is unsatisfactory to study the social conflicts that resulted from an environmental problem without asking whether the intended means of confronting the problem were suited to solving it.

The study of institutions and associations is an important part of an organisational approach, although it should have become clear that this approach aims at far more than a traditional institutional history. There is little need to encourage the study of organisations within the environmental movement since this field has always received much attention from environmental historians. However, the incorporation of environmental aspects into the agenda of existing institutional bodies is an issue that has attracted far less attention, maybe because environmental history has no methodology that allows a differentiated treatment of this issue and is hesitant to acknowledge that almost every public administration is compelled to balance environmental matters with other concerns. This hesitation seems to result from the environmental historians' belief that environmental concerns should have received supreme attention in past politics. For example, Andrew Hurley calls it a 'skewed scheme of priorities' that 'the needs of industrial capital clearly took precedence over concerns for the quality of

residential life'.[55] Trading in compassion for interpretation, it is the third advantage of an organisational approach that it allows a dispassionate discussion of the relevance of environmental concerns. The concept places these concerns into the historic context of conflicting goals and competing interests and it acknowledges that an environmental perspective is only one point of view amongst numerous others which all demand attention and constantly collide and overlap with each other during the political process. Most proposals for the solution of environmental problems try to adapt to the political landscape of the time in order to be politically feasible, and many measures of environmental reform imply a compromise with social and economic concerns. From a normative standpoint, this is simply a betrayal of the environmental issue. From an organisational point of view, it is an entirely natural affair which, of course, needs to be analysed as to its causes and consequences, but which is not despicable as such.

The organisational approach also has important implications for studies on environmental ethics. Environmental historians like to talk about environment-related value systems in terms of absolute non-negotiable taboos (rather than norms or values which can be weighed against each other), and tend to assume that action basically followed the normative ideal. For example, when Carolyn Merchant discusses the relevance to human behaviour of the changes in worldview during the 16th and 17th centuries, she takes an absolute standpoint, arguing that perceptions of nature imposed strict limits not to be transgressed: 'The image of the earth as a living organism and nurturing mother had served as a cultural constraint restricting the actions of human beings.'[56] It is certainly true that descriptive statements about nature include normative assumptions, but Merchant grossly overestimates the impact of norms (and 'hidden norms' in particular) when she believes that they exhaustively determined human action. She even argues that, 'The writer or culture may not be conscious of the ethical import yet may act in accordance with its dictates.'[57] Vito Fumagalli's position is even more obscure. He argues that rigid taboos limited the use of environmental resources during the Middle Ages. However, he is unable to give even a vague statement on the nature of these taboos, he only asserts that they apparently worked perfectly.[58]

Environmentalists clearly hesitate to discuss properly the impact of environment-related norms and values. In *Earth's Insights*, J. Baird Callicott notes that, 'of course one can disobey a statute, ignore a custom, transgress a taboo, disregard an ethical principle, or violate a moral rule', only subsequently to amass evidence that makes the possibility of ignorance appear as unimportant as possible.[59] In the case of Callicott, the reason is easy to find: if one seeks to develop a 'postmodern ecological paradigm [which] will, we can be confident, gradually transform today's social, economic, and political institutions',[60] the idea that there may be a disparity between a society's actions and its thinking is necessarily an uncomfortable one. A similar blocking may exist in environmen-

tal history, for some of its protagonists share the faith in 'an environmentalism that talks about ethics and aesthetics rather than resources and economics'.[61]

An organisational approach favours a more realistic perspective on environmental ethics, which is its fourth heuristic advantage. It is of little relevance in this perspective whether environmental values in history sound familiar to present environmentalists or have anticipated some of their motifs. Instead, an organisational approach asks about the impact that these values had or could have had on human behaviour. In this way, it puts environmental values to the test: What was their potential for directing human behaviour, and how much influence did they actually have? With which other values did they come into conflict, and with which did they concur? What types of action did these values encourage or discourage? How did these values lead to organised action, and how did organisations, in turn, sponsor certain values and combat others? An organisational approach does not intend to interpret values in terms of the history of ideas, but rather aims at an intellectual history with special regard to the relevance of ideas for political processes. The emphasis on the political consequences of environmental thinking will show that not every set of environmental values corresponds to viable political plans; we find in history (as well as in certain factions of the present environmental movement) a moralistic rhethoric that may sound wise and attractive to some, but was impossible to transform into concrete action. An organisational approach not only encourages historians to be more critical of the effectiveness of environmental ethics; it also considers the opposite possibility: environmental values may not only direct human behaviour, they may also create a certain blindness concerning the environmental consequences of human actions. For example, Gudula Linck has explored this possibility in the environmental history of China.[62]

It should be clear by now that it is not my intention to reinvent environmental history or to declare that research needs to start anew. In spite of exhibiting a practice that has been rather unfamiliar to environmental historians (namely, criticising fellow researchers), the goal of this essay is a constructive one, namely to preserve the merits of the current literature and to improve the state of research through methodological innovation. An organisational approach provides a framework that connects and integrates issues that environmental historians are already discussing, albeit in an incoherent and unsystematic way. Looking at the perception and definition of environmental problems and the development of environment-related organisations as crucial issues within the larger political process of organising responses to perceived environmental problems offers a context that relates these and other issues to each other, and thereby gives a better idea of the impact and relevance of perceptions and organisations.. Understood in this way, an organisational approach will enable historians to see to what extent a society could control and regulate its environmental impact, and it thereby gives a clearer picture of the opportunities and limits of environmental reform within a certain society at a certain time.

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5. LEARNING FROM ENVIRONMENTAL HISTORY: A DIFFERENT CONCEPT

'I'm sure that many environmental historians measure the "usefulness" of what they do [...] by whether or not it contributes to the health and integrity of natural systems.'[63] William Cronon certainly has a point with this opinion: environmental history has always drawn much of its legitimation from its claim to support and enlighten the current environmental movement.[64] The strange thing is that this relationship has been overwhelmingly harmonious so far. Environmental history has mostly formulated postulates that were already familiar to contemporary environmentalists. Rather than actively contributing to current discussions, environmental historians have frequently borrowed the framework of their interpretation from branches of the current environmental movement. So far, environmental history has followed, rather than inspired, the green movement.

But even if environmental historians take pride in it, it is by no means sure that their writing actually encourages environmental activism. It is quite difficult to formulate an effective policy when environmental historians describe a certain 'point of no return' as the origin of the current crisis. Equally, a pessimistic narrative of the attempts at environmental reform is likely to discourage present environmentalists, by suggesting that they are fighting a battle that has repeatedly been lost already. William Cronon reported that at the end of his environmental history class students were depressed, rather than motivated, concerning the prospects of environmental reform. Cronon attempted to solve this problem with a pep-talk in the final session. However, an organisational approach to environmental problems in history offers a more direct and less artificial way to encourage and inform present environmental reform.

The organisational approach focuses on the questions of how to transform environmental awareness into viable alternatives and how to represent these concerns in the cold and dirty world of politics. These are questions that continually confront contemporary environmentalists, and consequently they may profit from reviewing past experience of efforts for environmental reform. They may learn from analysing the processes that led to certain paths of technological development; from an organisational standpoint there was nothing inevitable about them. An organisational approach may show that there is no fundamental contradiction between economy and environmentalism, as shown, for example, by forms of sustainable development in forestry.[65] It may also challenge certain ideological assumptions of the current environmental movement. Thus, we do not find a human drive to dominate nature in most of modern history. People wanted to live in comfort or make money, and most of them were more or less indifferent to the question of whether their actions toward these ends entailed power over nature or not. Similarly, parts of the environmental movement seek to combine environmental issues with social, racial, or gender

concerns, proclaiming simultaneous reforms in these fields as their goal. In the presence of an environmental movement that has produced concepts as hybrid as 'Ecosocial Feminism',[66] historical evidence suggests that 'the idea of a social movement that intends and accomplishes innovations in the economic, political, and cultural sphere simultaneously is a nice dream. A more realistic model pictures a sequential pursuit with priorities for change in certain areas.'[67] Environmental history could therefore give environmentalism a more realistic idea of its reformative potential. An organisational approach may also show that most environmental reforms did not come without costs, monetary or otherwise, and that environmentalists need to calculate those costs, rather than refuse any compromise from the outset. As a consequence of the paradigm of decline, there is a clear hesitation among environmental historians to emphasise the positive aspects of their story; instead, they search for follow-up problems to suggest that reform was essentially in vain. Richard White once noted, 'To read much environmental history is to become convinced that only a miracle can preserve life on this planet, and that all environmental change has been for the worse.'[68]

Through analysing successful and defeated attempts at organising environmental reform, an organisational approach could enable a more productive and more controversial relationship with the present environmental movement; its most important finding may be that the most exposed and most vigorous 'defenders of nature' have not always been those who achieved the biggest changes. Environmental historians can be sufficiently detached from the hurly-burly of everyday politics to spot weaknesses and inconsistencies and thereby assist the environmental movement by offering critical advice, rather than normative support. An organisational approach therefore meets the demands of an environmental movement which has created widespread environmental awareness, but is now faced with the task of transforming awareness into reformative action.

In conclusion, an organisational approach may significantly enhance our understanding of environmental problems in history. It may not be useful for every single issue that environmental historians have studied so far; ultimately, an organisational approach is no more than an analytic tool for fostering historic understanding and not an overarching concept reaching for the subordination of every topic under its jurisdiction. Nevertheless, it will be more helpful than value-laden approaches which only enable historians to reproduce in history certain normative assumptions that they subscribed to from the outset.

NOTES

[1] E.g. Ilmo Massa, 'The Paradox of Insignificant Change. Perspectives on Environmental History', *Environmental History Newsletter* No.5 (1993), pp. 3-14; and Introduction ('The Vulnerable Earth: Toward a Planetary History') and Appendix in Donald Worster (ed.), *The Ends of the Earth. Perspectives on Modern Environmental History*, (New York:

Cambridge, 1988). For an overview on the prospects of German environmental history, see *Environmental History Newsletter*, Special Issue 1 (1993).

[2] Cf. Paul Leidinger, 'Umwelterziehung im Geschichtsunterricht', in Jörg Calließ, Reinhold E. Lob (ed.), *Handbuch Praxis der Umwelt- und Friedenserziehung*, (2 vols, Düsseldorf, 1987), vol. 2: *Umwelterziehung*, pp. 281-292, for his concept of 'Historische Ökologie'; and Rolf Peter Sieferle, 'Perspektiven einer historischen Umweltforschung', in Sieferle (ed.), *Fortschritte der Naturzerstörung* (Frankfurt/M., 1988), pp. 307-376; and Rolf Peter Sieferle, 'Überlegungen zu einer Naturgeschichte der Umweltkrise', in Jean Pierre Wils (ed.), *Natur als Erinnerung. Annäherung an eine müde Diva*, (Tübingen, 1992), for his systems approach.

[3] Jan Hodel, Monica Kalt, 'Warum ist Umweltgeschichte langweilig?' *Environmental History Newsletter*, Special Issue 1 (1993), pp. 108-127, esp. pp. 122n.

[4] Also see Norman Fuchsloch, 'Einführung in "Methodenfragen der Umweltgeschichte"', in Günter Bayerl, Norman Fuchsloch, Torsten Meyer (eds.), *Umweltgeschichte – Methoden, Themen, Potentiale. Tagung des Hamburger Arbeitskreises für Umweltgeschichte*, (Münster et al 1996), pp. 1-12, esp. p. 12.

[5] There can be little doubt that environmental history is a normative profession and that its normativity has influenced far more than its choice of topics. In a memorable dispute in 1982, Donald Worster and Kendall E. Bailes claimed a 'right of historians to be advocates and moral critics', leaving Joel Tarr as a rather sole defender of a Weberian ideal of non-normativity. (Kendall E. Bailes, 'Critical Issues in Environmental History', in: Bailes [ed.], *Environmental History. Critical Issues in Comparative Perspective* [Lanham MD, 1985], p. 10.)

[6] For review articles on American environmental history, see Richard White, 'American Environmental History: The Development of a New Historical Field', *Pacific Historical Review* **54** (1985), pp. 297-335; Alfred W. Crosby, 'The Past and Present of Environmental History', *American Historical Review* **100** (1995), pp. 1177-1189; and the round table on environmental history in the *Journal of American History*, vol. 76 no. 4 (March 1990), pp. 1087-1147. For German environmental history, see Arne Andersen, 'Umweltgeschichte. Forschungsstand und Perspektiven', *Archiv für Sozialgeschichte* **33** (1993), pp. 672-701; Engelbert Schramm, 'Historische Umweltforschung und Sozialgeschichte des 19. und 20. Jahrhunderts', *Archiv für Sozialgeschichte* **27** (1987), pp. 439-455; Wolf Schmidt, 'Rauchplage, Seuchen, Atomenergie. Neue Literatur zur Umweltgeschichte', *Geschichtsdidaktik* **11** (1986), pp. 265-279.

[7] E.g. Ilmo Massa 1993, p. 10n; Carolyn Merchant, *The Death of Nature. Women, Ecology, and the Scientific Revolution* (New York, 1983), p. xvi; Arne Andersen, 'Umweltgeschichte – Abschied vom Fortschritt', *Environmental History Newsletter* No. 3 (1991), pp. 3-16.

[8] For an excellent analysis of the idea of progress see Reinhart Koselleck, 'Fortschritt', in *Geschichtliche Grundbegriffe. Historisches Lexikon zur politisch-sozialen Sprache in Deutschland*, (Stuttgart, 1975), vol. 2, pp. 351-423.

[9] Clive Ponting, *A Green History of the World* (London, 1992), p. 7.

[10] Ibid., p. 18, 35.

[11] Ibid., p. 400.

[12] Ibid., p. 396.

[13] Ibid., p. 407.

[14] Donald Worster, 'The Vulnerable Earth: Toward a Planetary History', in Worster (ed.), *The Ends of the Earth. Perspectives on Modern Environmental History* (Cambridge, 1988), p. 6. Worster gives no further comment on how this calculation might work.

[15] Robert Gottlieb, *Forcing the Spring. The Transformation of the American Environmental Movement* (Washington, D.C., 1993), p. 54n.

[16] Christian Pfister et al., '"Das 1950er Syndrom": Zusammenfassung und Synthese', in Christian Pfister (ed.), *Das 1950er Syndrom. Der Weg in die Konsumgesellschaft* (Bern, 1995), p. 29.

[17] Franz-Josef Brüggemeier, 'Auf Kosten der Natur. Zu einer Geschichte der Umwelt 1880-1930', in August Nitschke et al. (eds.), *Jahrhundertwende. Der Aufbruch in die Moderne 1880-1930* (Reinbek, 1990), vol. 1, p. 79.

[18] Arne Andersen, Jakob Tanner, 'Die Gleichzeitigkeit von Sparsinn und Wegwerfmentalität. Die 1950er Jahre als Auftakt zur Umweltkrise der Gegenwart', in Arne Andersen (ed.), *Perlon, Petticoats und Pestizide* (Basel, 1994), p. 139.

[19] Jost Hermand, *Grüne Utopien in Deutschland. Zur Geschichte des ökologischen Bewußtseins* (Frankfurt, 1991), p. 7.

[20] Even Ilmo Massa concedes that 'it is difficult to reconcile the received view of society as progress with a reading of history as decline and overexploitation' (Ilmo Massa 1993, p. 11).

[21] Franz-Josef Brüggemeier 1990.

[22] Cf. Joachim Radkau, 'Was ist Umweltgeschichte?' in Werner Abelshauser (ed.), *Umweltgeschichte. Umweltverträgliches Wirtschaften in historischer Perspektive* (Geschichte und Gesellschaft, Sonderheft 15, Göttingen, 1994,), pp. 11-28; and Joachim Radkau, 'Was ist Umweltgeschichte?' *Environmental History Newsletter*, Special Issue 1 (1993), pp. 86-107.

[23] Donald Worster, *The Wealth of Nature. Environmental History and the Ecological Imagination* (New York, 1993), p. 123.

[24] Andrew Hurley, *Environmental Inequalities. Class, Race, and Industrial Pollution in Gary, Indiana, 1945-1980* (Chapel Hill, London, 1995), p. 6.

[25] Theodore Steinberg, *Slide Mountain or The Folly of Owning Nature* (Berkeley, 1995), p. 48.

[26] Donald Worster, *Dust Bowl. The Southern Plains in the 1930s* (Oxford, 1979), p. 6.

[27] Andrew Hurley 1995, p. 45.

[28] Ibid., p. 8.

[29] Ibid., p. 180.

[30] Theodore Steinberg, *Nature Incorporated. Industrialisation and the Waters of New England*, Amherst 1994, p. 42, 43, 134, 204.

[31] Ibid., p. 203.

[32] Ibid., p. 95.

[33] Ibid., p. 159.

[34] Donald Worster 1979, p. 4.

[35] Ibid., p. 6, 234.

[36] Ibid., p. 237.

[37] Theodore Steinberg 1995.

[38] Steinberg does not discuss this question, except for an apodictic statement which proclaims, 'it is the difficult cases at the margins that have the most to teach us' – which seems anything but logical: laws are abstract by nature, and during the process of law-making, it is impossible to anticipate every single case and to preclude strange legal convulsions (ibid., p. 8).

[39] Theodore Steinberg 1995, pp. 6, 10, 23. Strangely enough, Steinberg places Rousseau's famous quotation on the definition of property at the beginning of his narrative, although

according to Rousseau, property rights are no peculiar features of capitalism but of civilisation in general.

[40] William Cronon, 'Modes of Prophecy and Production: Placing Nature in History', *Journal of American History* vol. 76 no. 4 (March, 1990), p. 1130.

[41] This scheme is inspired by the concept of policy analysis which is currently discussed among political scientists. For a good introduction, see Adrienne Windhoff-Héritier, *Policy-Analyse. Eine Einführung* (Frankfurt/M. and New York, 1987). Recent discussions of this approach caution against using this scheme in a rigid, mechanistic way. Nevertheless, it is important to distinguish these stages analytically because it highlights specific obstacles and requirements of the political process and thus helps to understand the long path from a problem's perception to its solution. For a recent synthesis on the chances and problems of policy analysis, see Adrienne Héritier (ed.), *Policy-Analyse. Kritik und Neuorientierung* (Opladen, 1993, *PVS* special issue 24).

[42] For a more intensive discussion of this topic, see Mancur Olson, *The Logic of Collective Action. Public Goods and the Theory of Groups* (Cambridge, 1965). Environmental historians may also be familiar with this phenomenon through Garrett Hardin, 'The Tragedy of the Commons', *Science* **162** (1968), pp. 1243-1248. For a study of this issue in connection with social movements, see Joachim Raschke, *Soziale Bewegungen. Ein historisch-systematischer Grundriß* (Frankfurt and New York, 1988).

[43] Martin Melosi rightly noted on the sanitary reforms of the Progressive Era, 'In street cleaning and refuse collection and disposal, [...] improved administrative and organisational techniques were as important as, if not more important than, technical advances.' (Martin V. Melosi, *Garbage in the Cities. Refuse, Reform, and the Environment, 1880-1980* [Chicago, 1981], p. 237.)

[44] Letter to the editor, *Baltimore Sun*, March 18, 1915, p. 6 c. 6.

[45] Quotation reported by Fritz Berg, President of the BDI (the German association of industrialists), in Dietmar Klenke, *Bundesdeutsche Verkehrspolitik und Motorisierung. Konfliktträchtige Weichenstellungen in den Jahren des Wiederaufstiegs* (Stuttgart, 1993), p. 164.

[46] Joachim Radkau noted in a case study that 'there was a lack of a forceful political alliance that could have driven forward alternative concepts' of automobile use. (Joachim Radkau, '"Ausschreitungen gegen Automobilisten haben überhand genommen". Aus der Zeit des wilden Automobilismus in Ostwestfalen-Lippe', *Lippische Mitteilungen* **56** [1987], p. 21.) Radkau describes a lot of early criticism on automobiles, but only mentions one single organisation that formed out of annoyance about traffic noise. (p. 20.)

[47] Dietmar Klenke, *'Freier Stau für freie Bürger'. Die Geschichte der bundesdeutschen Verkehrspolitik 1949-1994* (Darmstadt, 1995). For more detailed information on this issue, see Dietmar Klenke 1993. I am lacking space to discuss publications that demonstrate the merits of an organisational approach; in addition to the works quoted, I may mention Jürgen Büschenfeld, *Flüsse und Kloaken. Umweltfragen im Zeitalter der Industrialisierung (1870-1918)* (Stuttgart, 1997); Joachim Radkau, *Aufstieg und Krise der deutschen Atomwirtschaft 1945-1975. Verdrängte Alternativen in der Kerntechnik und der Ursprung der nuklearen Kontroverse* (Reinbek, 1983); and Frank Uekoetter, 'Die Rauchfrage. Das erste komplexe Luftverschmutzungsproblem in Deutschland und seine Bekämpfung 1880-1914' (M.A. thesis, Bielefeld University, 1996). With a few reservations, I might add Marc Reisner, *Cadillac Desert. The American West and Its Disappearing Water* (New York, 1986); Richard J. Evans, *Death in Hamburg. Society and Politics in the Cholera-Years 1830-1910* (Oxford, 1987); and Samuel P. Hays, *Beauty, Health, and Permanence. Environmental Politics in the United States, 1955-1985* (Cambridge, 1987).

[48] Arne Andersen has recently revived the concept of Retrospective Technology Assessment (RTA) to study technological developments 'whose risks were already well-known in parts, but which society nevertheless either found tolerable or felt able to cope with through technological standards'. (Arne Andersen, *Historische Technikfolgenabschätzung am Beispiel des Metallhüttenwesens und der Chemieindustrie 1850-1933* [Stuttgart, 1996, p.34]. Also see Joel A. Tarr [ed.], *Retrospective Technology Assessment – 1976* [San Francisco, 1977]). One may dispute whether RTA is the best way to reconstruct the decision making process on technological innovations, but Andersen's work certainly points into the right direction and concurs with the intention of the organisational approach to analyse the rationale behind the seemingly irrational.

[49] Cf. Michael Soule, Gary Lease (eds.), *Reinventing Nature? Responses to Postmodern Deconstruction* (Washington DC, 1994) and William Cronon (ed.), *Uncommon Ground. Rethinking the Human Place in Nature* (new York, London, 1996).

[50] For one example, see the contributions in Jost Hermand (ed.), *Mit den Bäumen sterben die Menschen. Zur Kulturgeschichte der Ökologie* (Köln, 1993), which employ present 'ecocentric' values as a universal optimum standard.

[51] Günther E. Thüry, *Die Wurzeln unserer Umweltkrise und die griechisch-römische Antike* (Salzburg, 1995), p. 37.

[52] Mary Douglas, *Risk Acceptability according to the Social Sciences* (New York, 1985, Social research perspectives, occasional reports on current topics 11), p. 2.

[53] Mary Douglas, *Implicit Meanings. Essays in Anthropology* (London, 1975), p. 239.

[54] Ibid., p. 247. Also see Mary Douglas, *Purity and Danger. An Analysis of the Concepts of Pollution and Taboo* (London, 1966); and Mary Douglas, Aaron Wildavsky, *Risk and Culture. An Essay on the Selection of Technical and Environmental Dangers* (Berkeley, 1982).

[55] Andrew Hurley 1995, p. 2.

[56] Carolyn Merchant 1983, p. 3. For an alternative perspective which pictures early modern history less monolithically and allows conflicts and contradictions between norms and values see Keith Thomas, *Man and the Natural World. Changing Attitudes in England 1500-1800* (London, 1984).

[57] Carolyn Merchant 1983, p. 4.

[58] Vito Fumagalli, *L'uomo e l'ambiente nel medioevo*. German version: *Mensch und Umwelt im Mittelalter* (Berlin, 1992), p. 89. He attributes the loss of this taboo to 'ideologies, social and economic groups, political intentions, peculiar states of minds, temporary conditions and long-term development in the Western world' (ibid) – which should cover everything one could think of.

[59] J. Baird Callicott, *Earth's Insights. A Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback* (Berkeley, 1994), p. 2n.

[60] Ibid., p. 7.

[61] Donald Worster 1993, p. 144.

[62] Gudula Linck, '"Die Welt ist ein heiliges Gefäß, wer sich daran zu schaffen macht, wird Niederlagen erleiden." Konfliktaustragung an der Natur während der Umbrüche der chinesischen Geschichte', in Jörg Calließ, Jörn Rüsen, Meinfried Striegnitz (ed.), *Mensch und Umwelt in der Geschichte* (Pfaffenweiler, 1989), pp. 327-351.

[63] William Cronon, 'The Uses of Environmental History', *Environmental History Review* vol. 17 no. 3 (Fall 1993), p. 7.

[64] For one example, see Christian Pfister's definition of the uses of environmental history in Christian Pfister, 'Ressourcen, Energiepreis und Umweltbelastung – Was die Geschichtswissenschaft zur umweltpolitischen Debatte beitragen könnte', *Environmental History Newsletter*, Special Issue 1 (1993), pp. 13-28; p. 18.

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[65] Cf. Joachim Radkau, Ingrid Schäfer, *Holz. Ein Naturstoff in der Technikgeschichte* (Reinbek, 1987), esp. p. 255.

[66] Cf. Val Plumwood, 'Ecosocial Feminism as a General Theory of Oppression', in Carolyn Merchant (ed.), *Ecology* (Atlantic Highlands, 1994), pp. 207-219.

[67] Joachim Raschke 1988, p. 114.

[68] Richard White, 'Environmental History, Ecology, and Meaning', *Journal of American History* vol. 76 no. 4 (March, 1990), p. 1115n.