The Problem of the Problem of Environmental History – a Re-reading of the Field and Its Purpose

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The expression 'environmental history' was coined, at least within the genealogy that has led to a recognizable field of academic endeavour, by American historian Roderick Nash in 1972.[1] We might reasonably say that the field is a little older than this, although people have been thematising the kind of problems that environmental historians are interested in for almost as long as they have been writing narrative texts at all. The standard reference here remains Clarence Glacken and his superb bird's eye view of geographical ideas, *Traces on the Rhodian Shore* (1967),[2] which, had it been published in 1997, or even 1987 or 1977, might well have been framed as an 'environmental history' of ideas. But 1967 was just too early. Thus 'Environmental history' as a self-conscious field, and in the incarnation of taught courses, is about a generation old. 'Environmental history' also enjoys the vital institutional approbation of having two internationally recognized journals in *Environmental History* and *Environment and History*; a book series from Cambridge University Press and several smaller-scale dedicated publishers such as the University of Ohio Press, Island Press, and the White Horse Press[3]; and of course a fairly large number of scholars who are happy to either call themselves 'environmental historians' or label others as such.

As professional environmental history has now been in the making for more than a generation, the time seems right for some constructive reflection. We would like to present two lines of argument here. Firstly, we want to examine the field from an insiders' perspective, to understand what might give it coherence, meaning, and significance. Perhaps inevitably, years of working from this perspective makes one more keenly conscious of the current weaknesses of the field. But secondly, we want to look at the broader development of the field in the context of history and other disciplinary approaches to the environment. Here we find many gains, but also a sense that environmental history, especially in some countries, has remained marginalized, a

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[1] Roderick Nash, 'American Environmental History: A New Teaching Frontier', *Pacific Historical Review* 41, (1972), pp.362-377.

[2] Clarence J. Glacken, *Traces on the Rhodian shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century* (Berkeley, CA: University of California Press, 1967).

[3] There are indeed more publishers, in the United States in particular, that publish environmental historians reasonably frequently, although not ennobling the books with any particular series title. With the exception of the most major publishers and university presses (Norton, Knopf, Yale, California, Chicago), who occasionally publish environmental history, we can find publishers such as: University of Nebraska Press, University of Arizona Press, University of Nevada Press, University of Washington Press. Maybe the geographical profile is no coincidence since one important root of the field in the United States is the history of the American West.

marginalization we would view as unwarranted. Why is this? We wish to provide an analysis, and move towards remedies.

This is not to say that environmental history has hitherto been unreflective, indeed, it has been quite the opposite, although Jane Carruthers might have overstated the case when she recently commented that, 'It must be seldom, (if ever) that practitioners have dissected the historiography [of a discipline] at such a proximate stage in its evolution.'[4] Environmental History has certainly emerged within a time period where methodological reflection has been prominent in the academic world, indeed far too prominent for many people's tastes. One could take a 'linguistic turn' at this stage and argue that it is not terribly important to reflect more generally on what environmental history has achieved or where it might be headed: the term is now fairly well-entrenched and its future will simply be shaped by its discursive usage, rather than any reflective, theoretical or axiomatic considerations. In fact, we will suggest that the brief history of the term does indeed reflect such a scenario, and that the discipline has relatively little coherence. But if environmental history is to prove *useful,* or even enlightening, we would like to argue that reflection is both timely and necessary.

We are not alone in such thoughts, but we think our approach may be distinct.[5] To better frame the case we would like to make for the uses of environmental history and a project that would develop productive dialogue on the subject, it is worth explaining a little about other reflective work over the past decade or so, whilst trying not to simply repeat the observations of others. There have been quite a number of reflective essays by leading practitioners in the field over the past fifteen years or more: Donald Worster, Alfred Crosby, William Cronon, to name a few.[6] Last year, to celebrate its tenth anniversary, the journal *Environment and History* published a special issue with reflective and bibliographical essays on the field in Africa, the Americas, Australasia, China, and Europe.[7] The tone of these have largely been those of a still-young discipline; reflective, but celebratory and often didactic. This material along with bibliographical essays provided by the website of the American Society for Environmental History, allow for a fairly rapid assessment of the worldwide state of the field.

Recent global trends

The most influential work in the field has been done in the United States, which is also where the first teaching programs emerged and where the large majority of environmental history specialists are active. Numbers of publications, practitioners, and institutional profile are far higher than in Europe, which is the other region with an

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[4] Jane Carruthers, 'Africa: Histories, ecologies and societies', *Environment and History* 10 (2004), p. 379.

[5] See, for example, the recent colloquium on 2-3 December 2004 in Göttingen on 'Interdisciplinary Environmental History', and a European Science Foundation award to the AHRB Centre in Environment and Politics in Stirling/St.Andrew's.

[6] Donald Worster, 'Doing Environmental History', in Worster, D., ed., *The Ends of the Earth* (New York: Cambridge University Press, 1989); Alfred Crosby, 'The Past and Present of Environmental History' *American Historical Review* 100 (October, 1995), pp.1177-89; William Cronon, 'The Uses of Environmental History', *Environmental History Review* 17 (Fall, 1993), pp.1-22.

[7] *Environment and History* 10 (2004).

equivalent number of major universities. Indeed, 'environmental history' is perhaps unusual in the degree to which the field and its best-known practitioners hail from the United States. The geographical features of a low population density, large stretches of 'wilderness', a mobile 'frontier', and a strong tradition of the 'outdoors', have all been significant for the reception and growth of environmental history in North America. This is also perhaps true of other regions where environmental history has gained a foothold: Australasia, and within Europe, in Scandinavia and the Alpine countries. In the last we should perhaps especially mention the enormous contribution of Christian Pfister to climate history, and in the bringing together of historical climatology and history: a process barely begun in the United Kingdom, despite its international excellence in historical climatology and the monumental work of Jean Grove.[8]

This geographical and social background is perhaps also relevant within the United Kingdom, as the only area where environmental history has established a reasonably robust institutional presence is Scotland. Both the threat of natural forces, and the widely-recognised ability of humans to radically transform their environments in the relatively recent past, seem to have contributed to these trends. Themes within environmental history have been largely rural or to do with impacts of human activity on the rural or supposedly 'natural' environments, even when the forcing agent stems from urban development. Urban environmental history has only really emerged, even in the United States, in the twenty-first century, though it is now gaining ground rapidly, often with a specific interest in sanitary conditions, pollution, and consumerism. Mike Davis, a non-fiction writer teaching at a school of architecture in Los Angeles, has blazed a trail with two pioneering books on his own city. The first, *City of Quartz* (1990), as a documentary journalist, the second time over, in *The Ecology of Fear* (1998), as a self-professed environmental historian, leading to keynote addresses to the American Society for Environmental History.[9] Nevertheless, the urban/wilderness ratio in publications is distressingly low, and despite the fact that American lawns now cover an area roughly the size of Pennsylvania, the suburbs as yet have hardly registered at all, although some interesting analytical work on the modern development of suburbs, and even lawns, has been occurred elsewhere.[10]

In Europe, environmental history has enjoyed a more limited impact, often related very specifically to local peculiarities, such as the history of water management in the Netherlands, struggles over nuclear power in Germany, forestry in the Nordic countries, or pollution in regions of rapid nineteenth-century industrialisation. Despite the prevalence of the English language in the academic world, and the Anglophone origins of 'environmental history', the field appears especially weak in England and Wales. At the time of writing there is only one academic job currently advertised in the United

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[8] Christian Pfister, *Das Klima der Schweiz von 1525 -1860 und seine Bedeutung in der Geschichte von Bevölkerung und Landwirtschaft*, (Bern: P. Haupt, 1984); Jean M. Grove, *The Little Ice Age* (London: Routledge, 1988).

[9] Mike Davis, *City of Quartz. Excavating the future in Los Angeles,*(Vintage, 1990); Mike Davis, *The ecology of fear. Los Angeles and the imagination of disaster* (Vintage, 1998).

[10] *The American Lawn*, ed. Georges Teyssot (New York: Princeton Architectural Press with the Canadian Center for Architecture, 1999). See also Peter Coates, 'Emerging from the wilderness (or, from redwoods to bananas'): recent Environmental History in the United States and the rest of the Americas', *Environment and History* 10 (2004), p.413.

Kingdom that allows for 'environmental history' in its specification, a Ph.D post in urban history at Leicester, and this does not appear to be an anomalous period. In the year 2000, Don Gordon, teaching in the History department at the University of Melbourne, wrote in an otherwise dismal account of the situation in his home country these hopeful words after a visit to Britain:

> Two or three years ago I gave a seminar in Britain on teaching Australian environmental history and was surprised when my audience expressed some envy at the rich variety of material I had to draw upon for my undergraduate subject. They apparently had much less, and felt there was little chance to emulate a course such as mine in Britain. I came away feeling much more confident about the state of environmental history in Australia.[11]

In all these regions, even the United States, however, environmental history has made a fairly minimal impact on mainstream history writing. This may in part be the product of increasing fragmentation and specialisation in both environmental history and historical practice in general. With some notable exceptions, within Europe the 'leading lights' in environmental history are virtually unknown outside their fields, even those who work in areas such as agrarian history with a long-standing tradition and numerous practitioners. Literature is not yet widely read; the journals *Environment and History* and *Environmental History* are not widely recognised. This might seem a slightly pessimistic tale, but the field is yet young; the European Society for Environmental History was only founded in 2000.

A rather different case seems to us to be the impact of environmental history in Africa. The field promised a re-invigoration of African history in the 1980s, and has recruited some of the leading figures among the historians of the continent: William Beinart, James McCann, Megan Vaughan, James Fairhead and Melissa Leach. Rather than establish a distinct presence, however, the insights of environmental history have been quite quickly absorbed into regional historiographies. One might wish to argue that it is precisely this process that has established the concerns of environmental history within more mainstream work. Environmental themes of course dovetail neatly, and provide ready analogies, with colonial history and post-colonial history. Processes of invasion, acculturation, the confrontation of the 'indigenous' and the 'coloniser', or the 'indigenous' and the 'exotic', of local and 'scientific' knowledge, intensive and extensive forms of cultivation: all these find ready resonance in various discourses associated with the 'global south'.

Richard Grove is perhaps the best known of environmental historians to have insisted on the importance of the colonial enterprise, especially in Africa, the Indian Ocean and the Caribbean, for shaping European knowledge of nature.[12] The historiography of South Asia has also increasingly incorporated environmental approaches into its agrarian

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[11] ASEH website, historiographical section. That the situation in Australia, and in New Zealand, is not anywhere near as dismal as Professor Gordon might have thought (before visiting Britain) is easily seen from the rich account in Tom Griffiths and Libby Robin, "Environmental History in Australasia," *Environment and History* 10(2004), pp. 439-74.

[12] Richard Grove, *Green Imperialism: Colonial expansion, tropical island Edens and the origins of environmentalism, 1600-1860* (Cambridge: Cambridge, 1996).

history, perhaps most notably in the inheritance of the Indian Forestry Service and the struggles over property rights generated in the past two centuries by the imposition of English norms of legal practice. The increasingly sophisticated history of colonisation and migration can take on an environmental aspect, tracing the pathways of ideas and species around the globe and indeed is bringing about an increased use of such analogies and 'colonial' understandings of processes *within* European history. This brief balance sheet has both positives and negatives, and plenty of unrealised potential. A case in point is Australasia, where there is a considerable, and growing, historiography concerned with pressing themes such as the ecology of settler societies, relations to aboriginal forms of land use, as well as the huge infrastructure projects and irrigation schemes that have influenced Australia's twentieth century experience and her modern geographical and historical self-understanding: for example the shift from a conspicuously void 'Dead Heart', to a far more vibrant 'Red Centre', increasingly allowing for notions of cultural and social richness in the 'outback'.[13] Much of these themes are recognizable from the United States, but an even closer parallel might be Canada, where the interrelations of nature, science, art, and the issue of national identity and purpose have been at the forefront for a long time, including issues of ethnic presence and conflict.[14] Other parallels are in evidence in the Scandinavian North and, more generally, in the Arctic areas, where 'White Deserts' have occupied similar positions in national and geographical imaginations as the 'Red Desert' in Australia.[15]

The diversity of environmental history

This brief survey gives some sense of the progress, limits, idiosyncrasies, and perhaps above all the diversity of the field. It is partly for this reason that we have thus far refrained from attempting to provide any kind of definitive statement as to what we think 'environmental history' has been or might be. Of course, such statements do exist. The best known comes from Donald Worster, who identifies the collection from three strands of work within environmental history.[16]

- Firstly, the study of 'nature itself', including humans – from an ecological point of view, examining the behaviour of species, including those cultivated and domesticated, and flows of materials.

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[13] Tom Griffiths, *Hunters and Collectors: The Antiquarian Imagination in Australia* (Cambridge & Melbourne: Cambridge University Press, 1996), in particular chapter eight, 'Journeys to the Centre'. Recent works include *A Change in the Weather: Climate and Culture in Australia*, (eds.), Tim Sherratt, Tom Griffiths & Libby Robin (Canberra: National Museum of Australia Press, 2004); Mandy Martin, Libby Robin & Mike Smith, *Strata: Deserts Past, Present, and Future* (Canberra, 2005).

[14] Suzanne E. Zeller, *Inventing Canada: Early Victorian science and the idea of a transcontinental nation* (Toronto: University of Toronto Press, 1987).

[15] *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*, eds. Michael T. Bravo & Sverker Sörlin (Canton, MA: Science History Publications, 2002), e.g. Sörlin, 'Rituals and Resources of Natural History: The North and the Arctic in Swedish Scientific Nationalism.'

[16] Donald Worster, (ed.), *The Ends of the Earth: Perspectives on modern environmental history* (Cambridge: Cambridge UP, 1988).

- Secondly, exploring the socio-economic interaction between humans and nature, production, reproduction, customs, and so forth – the core material of agrarian history, more recently with a pollution component added in.
- Thirdly, analysing the 'mental interaction' – myths, ideology, and all ways of thinking about nature.

These of course open up an enormous field and an equally large number of spatial and temporal scales in which environmental historians might work. Equally, such is the range of topics, it might be supposed difficult to discern what many different types of environmental historians would have in common. In fact, very few works would even attempt to bind the three levels together in one single investigation.[17] While this agenda may have served the purpose of uniting a stray herd of seekers, we feel that to present it as the list of what environmental historians 'do' now gives an unrealistic and counterproductive expectation that provides little else than a bad conscience; nor does it perhaps provide very clear guidelines to how the three areas themselves are interlinked.

The lack of genuine coherence is reflected in the routes that scholars have taken *to* environmental history. Many people who work within these areas were trained as, and indeed see themselves as, geographers. The close and productive relationships between historians and geographers have recently been described in some detail by Alan Baker.[18] The historical study of the environment can clearly lay claim to a wide range of disciplinary approaches and this is inevitably going to be reflected in the approaches scholars take and what they expect from it. It is notable, however, in reading the regional bibliographies of works of environmental history provided by the American Society for Environmental History's website, how little common ground there is among them. Relatively few 'clusters' of environmental historians outside of the United States share any kind of institutional or bibliographical genealogy. It seems rather that 'environmental history' has proven a convenient umbrella under which diverse types of work have been able to place themselves. To what degree this is a strength or weakness of the field should be, we feel, an important area for discussion.

This diversity, and lack of common ancestry, is perhaps true of ourselves. Both of the authors' interests developed out of work on resources and economic history. In the case of Warde, an interest in environmental change and resource management emerged from work on material culture and a grounding in historical anthropology.[19] Sörlin's early research in the 1980s was in particular on the history of northern Scandinavia's resources. Over time interest turned more towards the science of natural resources, i.e. the field sciences, so environmental history has been not just forest, water, and mineral history, but to a large extent a social and political history of the field sciences. This has

[17] A rare example of a successful attempt of bringing the three levels together in one major investigation is Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill, NC: University of North Carolina Press, 1989).
[18] Alan Baker, *Geography and History. Bridging the divide* (Cambridge: Cambridge, 2003).
[19] Paul Warde, *Ecology, economy and state formation in early modern Germany* (Cambridge: Cambridge, 2005).

also brought him to polar history, in particular the history of polar research, but also on the history of global warming and its scientific and political underpinnings.[20]

Diverse ancestry – if environmental historians really constitute a family – also has further consequences. It is difficult to assemble, for many periods of history in many regions of the world, a literature that could usefully form the corpus of a critical body of work on historical environmental change and the human experience of it, especially for teaching purposes. This makes advocating the field problematic, especially in areas where it is not so well known; a 'chicken and egg' problem. This is less true of the United States, Australia, and perhaps southern Africa, perhaps because of the relatively modern temporal horizons within which most historians of these regions work. Environmental change has been more consciously built into the traditional historical narratives for as long as the discipline has been prominent in these regions. From a European perspective, the difficulties are compounded because of the number of different languages within which European historians work – a point highlighted recently by Austrian Medievalist Verena Winiwarter.[21] If one wanted to teach a course on the environmental history of most European nations or regions, where could one go for introductory and synthetic works? There are various new general works, some with a national, some with a wider perspective: Sörlin for Sweden (although as much international), Radkau for Germany, Marco Armiero and Stefania Barca in Italy, Delort & Walter from France.[22] The Netherlands has a 'green history' by van Zanden and Verstegen, and the *Journal for Ecological History*. Thus far however these books have not crossed borders.[23]

Nevertheless, a large proportion of existing European work operates on timescales with which most historians are not entirely comfortable. To take Delort and Walter's book as an example, that self-consciously treads along the path set out by an edition of the journal *Annales* in 1974, the section 'L'anthroposation du milieu', covering the ground a historian might usually be expected to engage with (fields systems, energy, industrialisation, the urban environment, aesthetics), fills a third of the book or around one hundred and thirty pages, and ranges across the entire period from the Neolithic to the present. This situation is even more stark in Britain, where aside from the recent history of conservation, the best-known synthetic work is Ian Simmons' *Environmental History of Great Britain* a volume that skips lightly over the past 10 000 years and by-

[20] See e.g. Sverker Sörlin, Ordering the World for Europe: Science as Intelligence and Information As Seen from the Northern Periphery', in *Nature and Empire: Science and the Colonial Enterprise*, ed. Roy Mac Leod, *Osiris: Yearbook for the History of Science*, vol. 15 (Chicago, IL: The University of Chicago Press, 2001), pp. 51-69. Sörlin's students have carried out PhD projects on topics as diverse as: the history of scientific travel; London Zoo in the 19th century; the intellectual history of economic growth after 1945; land elevation discourse and geology 1860-1930; agricultural chemistry and land improvement 1850-1910; forestry methods in the 19th and 20th centuries; science infrastructure and urban landscapes in the 20th century.

[21] Verena Winiwarter et al, 'Environmental History in Europe from 1994to 2004: Enthusiasm and Consolidation', *Environment and History* 10 (2004), pp.501-530.

[22] Sverker Sörlin, *Naturkontraktet: Om naturumgängets idéhistoria* ["The Nature Contract: On the History of Environmental Ideas"] (Stockholm: Carlsson, 1991); *Jorden en ö: En global miljöhistoria* ["The Earth an Island: A Global Environmental History"; with A. Öckerman], (Stockholm: Natur och Kultur, 1998, rev. ed. 2002); Joachim Radkau, *Natur und Macht: Eine Weltgeschichte der Umwelt* (München: Beck, 2002); Marco Armiero and Stefania Barca, *Storia dell'ambiente* (Ristampa, 2004); Robert Delort & Francois Walter, *Histoire de l'environnment européen* (Paris: Universitaires de France, 2001).

[23] Jan Luiten van Zanden & Wybren Verstegen, *Groene geschiedenis van Nederland* (1993).

passes, rightly or wrongly, the scope of most history teaching entirely.[24] Bernard Clapp's *Environmental History of Britain since the Industrial Revolution* is much less well known.[25] However, the volume of work in Europe suggests that the possibility of teaching courses and the inspiration for new research – for which teaching is a necessary starting point – is upon us. This is thus an important moment for the future of environmental history within Europe, whether this involves the history *of* Europe or elsewhere.

It is in this context that promoting discussion of the uses of environmental history seemed timely from a local perspective. How will environmental history maintain or develop its profile? Will or should it 'invade' the mainstream, although it has not been overly successful thus far, even where it is well established (although, as we have seen, Australasia and to some extent Scandinavia show signs to the contrary)? And what might environmental historians do to develop and raise the profile of their diverse interests? A particular frustration with the lack of suitable synthetic literature for teaching in the English language on areas of the world outside of the United States raises the issue of where that might come from, and what kind of courses could be taught in what institutional contexts? Learning from reflection on the experience of colleagues in different departments and institutions seems essential here. There is perhaps an even simpler question it would be interesting to hear answered; what kind of environmental history books would we like to see, and what would be useful? And this of course cannot but link in to the very essence of our concerns, how we can best understand human history as part of processes of environmental change.

Themes old and new

Thus a great deal of energy is being brought to the field, but it is a field that is already diverse, highly specialised, and that on the evidence of a limited wider reception has lacked the kind of theoretical appeal associated with the early days of social history or the new cultural history; a situation perhaps reflected in the relative status of environmental history journals. The diversity stems not just from the roots of different scholars' interest in the environment, or the 'political' convenience of the term, but also, of course, profound divergence in disciplinary approaches, especially between the traditionally human and natural sciences. This raises the question of to what degree environmental history has actually stimulated new research, as opposed to being a convenient and more resonant label under which older strands of work have marshalled their forces. If we look, for example, at the sessions at the European Society for Environmental History conference in Florence in February 2005 we find the following areas highlighted:

- Forest archaeology
- Urban environment
- Natural hazard and disaster
- Waste and pollution
- Forest History
- Agriculture

[24] Ian Simmons, *Environmental History of Great Britain* (Edinburgh, 2001).
[25] Bernard Clapp, *Environmental History of Britain since the Industrial Revolution* (1994).

- Man and the sea
- Climate extremes
- Livestock production
- Marine animal populations
- Conservation
- Ecology and spirituality
- Water history and hydrology
- Wild animals
- Hunting
- Landscape change
- Sustainability

This is an excellent list to bring together under one roof. There are 140 papers. The field is vibrant, and certainly all can be understood as environmental history. However, aside from expanding their audience, we could turn the question round and ask how many of these fields require 'environmental history' to sustain themselves? How many have long existed or would happily exist quite independently? This is not a frivolous question, because to justify environmental history, and secure funding for environmental historians, research, and courses, we must surely be able to tell others what is distinct, and one must say today, value-added by this field.

We would suggest that these fields, and others, can be distilled down into a few disciplinary divisions that to some degree reflect departmental divisions in most universities. Although the list is rather Eurocentric, these are:

- Historical geography
- Historical ecology
- History of Science / History of Natural History
- Pollution and urban environmental studies
- '*Annales*' school-type regional studies
- American environmental / frontier history

It may be that the relative strength of historical ecology and historical geography in England and Wales – but the relative lack of interest in these fields within many contemporary history departments – explains the relative weakness of environmental history in those same countries. Strands of historical geography have of course been highly influential on environmental historians – from Vidal de la Blache in France, through H.C. Darby in England, to contemporary practitioners such as Graeme Wynn in Canada. But it seems that geographers have more successfully absorbed recent theoretical insights form history than *vice versa*; certainly knowledge of mainstream historians of recent trends in historical geography or ecology seems to us to be rather more limited.

But, it seems to us, that if a wider case for environmental history as such is to be made, we need to be able to clearly articulate what these strands have in common, what light

they can shed on each other, and what 'uses' these common threads have in answering and raising research questions.

Interdisciplinarity and environmental history

One of the things that characterises these different approaches is that they have been 'done' in different departments, which historically have sometimes had close relations. This varies however from time to time and from country to country. Environmental historians have often looked more to the natural than to the social sciences, both for data and at times for concepts. Ecology has unsurprisingly been a major influence, though the conceptual diffusion has often been mediated by other disciplines, such as anthropology, or by ecologists and plant scientists who have attempted to write history.[26] The influence of geography on history, which was clearly more prominent in the heyday of *Annales* history, seems to have channelled into more specialised areas. Its influence on the history of science, for example, has grown considerably after the 'spatial turn' of the 1990s. As has been demonstrated by David Livingstone in numerous works since the early 1990s, and in recent work by Charles Withers and Michael Bravo, the territorial, and indeed maritime, dimensions cannot be taken out of the history of science;[27] not just because space implies resources, dominance and power, but also because 'the field' has been such an enormous reservoir of empirical data, as was described by Peter Bowler in a comprehensive volume innovatively, and accurately, entitled *The Environmental Sciences* (1992). The influence of sociology on history has been large, from Durkheim and Weber to Giddens and Latour, but remarkably little of that theoretical energy has found its way to the mainstream of environmental history. Some would no doubt see that as a blessing, but it raises the question of the level of ambition of environmental historians to actually contribute to the vanguard of scholarship and to the theoretical progress of our profession. The vocabularies of political science and economics are also conspicuously absent from the large body of work in environmental history, unless as a target of indignant criticism. This is despite the relatively rapid growth of environmental and ecological economics, although it may equally reflect the relative weakness of economic history in some countries. Thus environmental history has engaged with a particular form of interdisciplinarity that has looked more readily in the direction of the natural sciences, and particularly the life sciences. This perhaps goes some way to explaining the lack of interest or comprehension from other historians.

The type of question to which this relationship with the life sciences has given rise is perhaps a further explanation of these trends. One could take the case of conservation history, an issue popular the world over, almost by necessity, as alternative defining questions for the field are yet few. The empirical question could be put thus: 'How have nature reserves impacted the environment?' The normative sequel would be: 'Should we

[26] Influential exponents of such work are Oliver Rackham and Tim Flannery.

[27] David N. Livingstone, 'The Spaces of Knowledge: Contributions towards a Historical Geography of Science', *Society & Space* '3(1995); *Putting Science in Its Place: Geographies of Scientific Knowledge* (Chicago, IL: University of Chicago Press, 2003). Charles W. J. Withers, *Geography, Science, and National Identity: Scotland since 1520*, Cambridge Studies in Historical Geography 33 (Cambridge & New York, 2001). Michael T. Bravo, 'Geographies of Exploration and Improvement: William Scoresby and Arctic Whaling (1782-1822)' (manuscript, January 2005).

advocate more nature reserves?' Such approaches were obviously policy-orientated and at first glance appeared reliant on data from the natural sciences, both arenas of which mainstream historians have been suspicious. For a long time, the typical answer to the normative questions among mainstream environmental history was a resounding 'yes'. Strangely, the idea of nature reserves was not very much historicized, even by the 'historians', but rather viewed as an *a priori* good thing that belongs among others in the 'sustainable policy kit'. In other words, environmental historians appeared to be taking values as well as methods from either political assumptions or assumptions prevalent in the natural sciences. One of William Cronon's real contributions was when he declared at a meeting of the American Society for Environmental History in Las Vegas (1995) that the love of nature was by and large an eighteenth and nineteenth century invention of the modern urban middle class, not an innate need of mankind. He was bitterly opposed.[28]

In the constructivist spirit of the day Cronon also edited a collection, *Uncommon Ground* (1995), assembling a number of counter-narratives, giving flesh to the notion that, after all, nature had to be both discovered and named before it could become cherished. That in fact the very idea of a bonding with nature had a history. It was sensational to a field that had understood itself normatively, but it would come as no surprise to those who had read Marjorie Hope Nicholson's *Mountain Gloom and Mountain Glory* (1959), and certainly not to students of Raymond Williams, who had heard him speak in Cambridge on the history of nature. Nor would it come as any news to those who could recollect their Roland Barthes, in *Mythologies* (1958), prophetical as almost always, when he talked about the, 'bourgeois promoting of the mountains', and explained:

> 'This myth of the 'human condition' rests on a very old mystification, which always consists in placing Nature at the bottom of History. Any classic humanism postulates that in scratching the history of men a little, the relativity of their institutions or the superficial diversity of their skins…, one very quickly reaches the solid rock of a universal human nature. Progressive humanism, on the contrary, must always remember to reverse the terms of this very old imposture, constantly to scour nature, its 'laws' and its 'limits' in order to discover History there, and at last to establish Nature itself as historical.'[29]

If environmental history has, more than most endeavours in history, been interdisciplinary, and if this is perhaps the best and most significant aspect of it, what implications does this have for the training of environmental historians or their modes of

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[28] On this debate, see Michael P. Cohen, 'Comment: Resistance to Wilderness', *Environmental History* 1 (January, 1996), pp.33-42. William Cronon, 'The Trouble with Wilderness; or, Getting Back to the Wrong Nature', *Environmental History* 1 (January, 1996), pp. 7-28; William Cronon, 'The Trouble with Wilderness: A Response', *Environmental History* 1 (January, 1996), pp. 47-55; Thomas R. Dunlap, 'Comment: But What Did You Go Out into the Wilderness to See?', *Environmental History* 1 (January, 1996), pp.43-46; Samuel P. Hays, 'Comment: The Trouble with Bill Cronon's Wilderness', *Environmental History* 1 (January, 1996), pp.29-32.

[29] William Cronon, *Uncommon Ground: Toward Reinventing Nature*, (New York: W. W. Norton & Company, 1995); Marjorie Hope Nicholson, *Mountain Gloom and Mountain Glory: The development of the aesthetics of the infinite* (Ithaca: Cornell University Press, 1959), new ed. (Seattle: University of Washington Press, 1997); Roland Barthes, *Mythologies* (1957), Engl. transl. (London: Jonathan Cape, 1972), p. 101.

work? And how can reluctance on the part of mainstream history to welcome it be overcome, if environmental history training tends to take its practitioners away from the traditional methods? Historians are notoriously narrow in the range of skills they apply or are comfortable with, and 'interdisciplinarity' is frequently used to mean dealing with two types of text, or reading the same text in two different ways – not quite how an environmental scientist would understand it! For the most part, historians also remain quite bad at reading the literature of other disciplines, though this is hardly a universal fault among historians, of course. And maybe we are a little bit self-flagellating here; historians probably make very good readers of texts from other disciplines, but the problem is that we too rarely find the occasion. But is the message consequently that the utility of environmental history is greatest when researchers work together in interdisciplinary teams, or should the historians themselves receive a new kind of training?

But environmental history raises clear issues of what it takes to adequately study the dynamics of past environments and how they were perceived:

- Is the field best served by establishing 'environmental history' as a distinct discipline with its own posts, training and even departments?
- Is it possible to effectively train 'environmental historians' or does the nature of the work move us towards interdisciplinary, collaborative research projects?
- What forms of publication are best able to articulate its concerns and reach other audiences?
- What funding implications would the kind of choices made above have?

If one is to argue for a more ambitious professional approach to environmental history one is, ultimately, faced with the questions of institutional independence. Certainly, the history of disciplines demonstrates that departmental profile greatly assists fields in their struggle to survive. In particular, the existence of a disciplinary 'monopoly' with undergraduate training and the emergence of a market of 'branded' and required courses for students, and of teaching opportunities for trained PhDs, are crucial for the emergence and maintenance of disciplines with designated careers.[30] At least they usually prove harder to close down than less institutionalized 'fields'. This speaks in favour of at least some degree of autonomy.

However, with specialization also comes a certain risk of becoming overly inward-looking, of isolation and, ultimately, of marginalization. As we have stated, there are indications – at least as we perceive – that work in environmental history, even good work that is widely cited within that community of scholars, is not commonly read and cited outside of the 'circuit'. When a similar observation was made in the United States about a decade ago by William Cronon,[31] it caused some stir but does not yet seem to have been fully dealt with. The criticism remains largely valid, although one tendency that can be seen in the United States is a widening of the field so as to situate it more squarely

[30] Stephen Turner, 'What Are Disciplines?: And How Is Interdisciplinarity Different?', in *Practising Interdisciplinarity*, eds. Peter Weingart & Nico Stehr (Toronto: University of Toronto Press, 2000).
[31] William Cronon, 'The Uses of Environmental History', *Environmental History Review* (1993).

within mainstream history and to make it better connected to other sub-fields, although this is by no means a clear trend.

The synthetic and the particular

The usefulness of environmental history, we believe, is to be judged both by fellow-historians and on a wider societal level. To begin with the latter, it seems to us apparent that an unusually large number of important books have emerge from the field, given its youth and small size, that have changed the way we look at the past. Suffice it to mention here some of the perhaps most seminal contributions: Carolyn Merchant's *The Death of Nature* (1980), Alfred Crosby's *Ecological Imperialism* (1986), William Cronon's *Nature's Metropolis* (1991), Richard Grove's *Green Imperialism* (1995), John McNeill's *Something New Under the Sun* (2000). Apart from making the plain observation that the large majority of these authors are American, one may perhaps more interestingly note that they are all works of synthesis. They present new approaches to what Charles Tilly has called 'Big Structures, Large Processes, Huge Comparisons.'[32]

In a sense they all demonstrate that nature, or ecology, plays a hitherto unarticulated role in the more or less enduring problems that they have set out to grapple with. Merchant points to live nature as the ultimate victim of scientific rationalism; Crosby explains the impact of natural forces on European expansion; Cronon provides an interactive history of the co-production (which is clearly also a theoretical concept) of city and country, a universal issue although he locates it in the Mid West; Grove rewrites the intellectual history of conservation and claims that it was the distortion of tropical island Edens that spurred this European specialty; McNeill transforms the twentieth century into a panorama, where amidst the horrors and the enormous expansion, there is always this silent, wordless player, perhaps the most eternal agent of history along with man himself: nature.

These works are certainly not policy reports, ready to use in any corporate or governmental office; they do not claim that sort of usefulness. They are not entertainment history either, written to please or tease. Their significance is certainly due to the fact that they have put the environment at centre stage. But, perhaps most importantly, in being synthetic works they have set the role of the environment in a framework comprehensible to traditional narratives, even if their own contributions are original, which they are. They have changed our perception of history because they have dared to cross boundaries, geographically, temporally and, not least, disciplinarily. Perhaps it should not come as a surprise that the issues they deal with are big; nature is indeed a large-scale actor, and the scope of their vision must be big too in order to achieve the synthesis. Still, one should observe, they are written by historians. The framing of the issues is done from an analytical point of view, and the questions asked concern problems that are valid to historians. It is the scale of the issues and the way of answering them that explains their success.

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[32] Charles Tilly, *Big Structures, Large Processes, Huge Comparisons* (New York: Russell Sage Foundation, 1984).

The societal level on which environmental history has presented itself as useful, we would argue, is thus the synthetic. It does not readily provide advice, but it may contribute fresh views on major events. It has been claimed by advocates of the field that this will ultimately influence the way we plan or build our societies and shape our roles in the world. We in no sense are suggesting that synthetic history writing is exclusive to environmental history, but maybe it is more marked by it than most other fields. At least we would like to raise that as a point for discussion.

The uses of environmental history to historians seem, interestingly, to follow a similar pattern. The works mentioned above just happen to be among those that are widely cited by other historians. In particular, environmental history syntheses seem to have influenced colonial, imperial, and world history. Although both Crosby and Grove have received criticism, by and large their views have been assimilated with the main currents of world history. Grove has been quoted in C. A. Bayly's recent *The Birth of the Modern World, 1780-1914* (2004), and in Kenneth Pomeranz's influential, if controversial, *The Great Divergence* (2000). Those Environmental historians sensitive to political economy', have been cited as an important influence by Richard Drayton in *Nature's Government* (2000).[33] However, the synthesis, whilst it has obvious appeal, is not the mode in which most historians are trained to operate, and neither is it the kind of output that is most rewarded in establishing a historian's career path.

However, the bulk of the work written by environmental historians is actually, of course, specialized case studies, often with a nation or region as its geographical boundary; the famed syntheses are, almost by definition, exceptional. In this regard, environmental historians are like any other, but this is work that in our impression is not cited very much in the leading journals, although it may still be cited within its geographical contexts. Our experience from the Nordic countries and Germany point in that direction, and the cross-fertilisation with disciplines such as historical geography, or even political science (histories of modern political decision-making on pollution, disasters, environmental crime, etcetera), provides further evidence of local usefulness of environmental history scholarship.

The real barrier to the usefulness of environmental history, we believe, does not lie in its inclination for synthesis. Rather, there is a somewhat more vague feature of its centrality to the historical enterprise that plays the biggest role in this regard. Maybe it could be called human agency. The crucial features of human agency are, it is generally believed, taken care of by other historians. What is left over for environmental history, as its claim to authority, is the non-human: the environment of those humans, the professional study of which has however already been staked out by scientists and geographers. In fact, it is rather striking to note the large presence of biologists – zoologists, palaeontologists, mammalogists, entomologists, ecologists, etcetera – in the annals of what might be

[33] C. A. Bayly, *The Birth of the Modern World, 1780-1914* (Blackwell: Oxford, 2004), p.450; Kenneth Pomeranz, *The Great Divergence. China, Europe and the making of the modern world economy* (Princeton: Princeton, 2000), pp.57-8; Richard Drayton, *Nature's Government: Science, British Imperialism, and the 'Improvement' of the World* (New Haven CT & London: Yale University Press, 2000), p. 277, n. 8.

termed environmental history. There is a Jared Diamond[34] with his majestic panoramas on the major forces of civilisation and its disastrous complexities, or an Edward O. Wilson, giving us an almost biblical version of the story of biological diversity, a truly planetary digression,[35] or a Daniel Botkin, challenging the conventional wisdom of biological stability,[36] or even a Stephen Jay Gould, although he was most interested in the paradoxical detail and the temptingly odd rather than in the grand narratives.[37]

Sometimes, we believe, it is the proximity these historical syntheses of environmental change enjoy to models of 'evolution' that has served as a deterrent to most ordinary historians. The four scientists mentioned above – Americans again – would not only be interested in evolution as a subject, they would in fact give evolution considerable explanatory power, although with varying prefixes and with varying degrees of determination. But, one should observe, always with *some* degree of determinism. It is history beyond the confines of human agency, although it is not history beyond our control. Humans in these narratives have to adapt, be skilful, rational, enlightened, or else the forces of nature will bear down destructively upon us all. But the forces of nature are, on a certain scale, powerful enough to subvert most human intentions. The social sciences are not allowed to contribute much to these super-narratives. It is as if elections, democracy, ideology, social movements, businesses and families are all too ephemeral entities to claim any role. Occasionally, the social phenomenon that is called upon to make things better is 'science', but then again, politics does not make it happen.

In an interesting way, this environmental metahistory therefore reminds us more of history written by an old guard of anthropologists or archaeologists: a history with no written sources. Where intentionality is reduced to the minimum and where a super-interpreter uses his well-informed imagination to speculate about why societies developed the way they did, why people moved around, settled, or clashed, or indeed, why they will face disaster unless they change. Historians would often use these histories, simply because we need them. But they would mostly serve as some sort of background reading to the kind of histories that we are really interested in writing.

We would, still, like to maintain a perhaps fine, but important, line of distinction between the 'evolutionary metahistories', often written by scientists, and most of the syntheses written by professional environmental historians. The latter deal, mostly, with problems on the human scale, they use conventional sources, they do invite human agency, although they very often succeed in moving the historical near enough to the evolutionary to break new ground and bring home sensational new readings of world or regional history. But to many historians, they are already way beyond the realms where most methodological courses would have allowed them to tread.

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[34] Jared Diamond, *Guns, Germs and Steel: A Short History of Everybody for the Last 13 000 Years* (London: Jonathan Cape, 1997), *Collapse: How Socieities Choose to Fail Or Survive* (London: Allen Lane, 2005).
[35] Edward O. Wilson, *The Diversity of Life* (Cambridge, Mass.: Harvard University Press, 1992).
[36] Botkin, Daniel B., *Discordant Harmonies: A New Ecology for the 21st Century* (Oxford & New York: Oxford University Press, 1990).
[37] Stephen Jay Gould, *The Panda's Thumb: More Reflections in Natural History* (New York: Norton, 1980), *The Flamingo's Smile: Reflections in Natural History* (Harmondsworth: Penguin, 1986).

These mega-comparisons perhaps also help explain some of the development of the discipline, as often perceptions are formed in the wider field of 'public history' as much as within academic seminars or appointments committees. Most of the important works of environmental history that we have cited so far draw on quite holistic, ecological models for their understanding of causation and change, with a nod to 'systems' approaches more commonly found in the sciences. Modes of explanation that are, in Alan Baker's words, 'holistic and synthetic…', but 'pragmatically because of the complexity of the systems with which [they] deal, tend to be reductionist and analytical', can push the historian towards the general observation while dissolving traditional actor and intention-centred chains of causation.[38] Historians have understandably been suspicious of what might smack of determinism to them. It is perhaps illuminating that works of environmental history with the most enthusiastic reception with the local academe have been those of Richard Drayton, Richard Grove, and perhaps Carolyn Merchant; works, that while re-positioning perspectives, provide easily recognisable accounts of the human-centred development of knowledge, especially that moment in early modern history when natural philosophy shaded into the natural sciences: a moment for environmental historians that any historian of ideas can comprehend.

Equally, environmental history has had a stronger reception in those areas of the world, and among historians of time periods, where either human transformatory power, the stubborn resilience of nature, or the sudden, system-shattering impact of catastrophe, can be fitted into recognisable narratives. Hence, perhaps, the easy familiarity historians of the American west or sub-Saharan Africa enjoy with stories of the imperial or colonial endeavour overwhelming or foundering in 'other' environments.[39] Such narratives are even more familiar, perhaps, where the colonial enterprise had already prepared the ground by reducing the indigenous inhabitants to 'natural' phenomena of the colonised territory. Here the environment can both include humans and take an active role in history. Either way, the often real dynamics of environmental change, and changes that can take very long time periods to become manifest, are too easily ignored, as recently protested by Horden and Purcell, and Richard Grove and Oliver Rackham, in their histories of the Mediterranean.[40]

Within Europe, the environment all too frequently ceases to have an active role in history from around 1500, and even in the seminal writings of Braudel it remains the backcloth, the stage for history, rather than an active force.[41] Changes to the landscape such as enclosure and modern forestry have surely wrought changes to the European landscape as radical as have occurred in many parts of the 'colonised' world, but already located in a different narrative at the time, they have not become an 'environmental' issue for historians. Rather, the historiography of the transformation of the European landscape

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[38] Alan Baker, *History and Geography. Bridging the Divide,* (Cambridge: Cambridge, 2003), p.75.
[39] Again, it is appropriate to refer to the overview by Jane Carruthers, 'Africa: Histories, ecologies and societies', *Environment and History* 10 (2004).
[40] Peregrine Horden and Nicholas Purcell, *The corrupting sea. A study of Mediterranean History* (Blackwell: Oxford, 2000); A.T. Grove and OliverRackham, *The nature of Mediterranean Europe. An ecological history* (Yale: New Haven and London, 2001)
[41] Braudel, *The Mediterranean and the Mediterranean world in the age of Philip II* (HarperCollins, London, 1992), p.xiv.

between 1750 and 1850 continues to be largely concerned with 'pauperism' and property relations, because the threat or intransigence of nature was apparently not at issue. As these changes did appear successfully to eradicate 'old style' pauperism (which of course re-emerged in the slums of industrial capitalism), again, the question of 'nature' was not raised, whereas the question of 'indigenous people' has always been one of 'nature'. Similarly, for Crosby the coming of smallpox and other diseases to the New World was part of 'ecological imperialism', yet to our knowledge no-one has seriously analysed the Black Death as the result of reconfigured trade relationships, social mobility, or a phenomenon related to environmental history. But when is epidemiology not 'environmental'?

Thus synthetic and particularist trends within environmental history have not spoken to the problems most historians are interested in. And it is also true, after all, that it is hard to conceive of any strong reason to bring the environment in as a strikingly important factor in the explanation of the First World War, the French Revolution, or, indeed, the Falklands War. Yet with a topic such as the French Revolution one would be viewed as being a little backward to claim that economic, social, or cultural history had nothing to contribute to by now very old-fashioned solely political narratives. Could environmental history ever hope to be equally taken for granted as an essential part of the bigger picture in all major occurrences in which historians are interested? Clearly, most text book examples of environmental history have formed in a certain sense a genre of their own, preferably comprising mega events such as salinization of soils in Mesopotamia, the deforestation of the American West, the growth of the national parks, or the history of the London air and its quality, just to mention a few standard examples (of which the present authors are as guilty as anybody else). Joachim Radkau, in recently addressing similar 'reflective' questions in his volume *Natur und Macht*, [Nature and Power] has proposed a fairly narrowly demarcated area for environmental history, as providing the history of the institutional framework of mentalities that shape and are shaped by 'ecological chain reactions'.[42] This certainly provides an area in which environmental historians can make essential contributions, and it may be that the integration of such relatively familiar narratives into standard textbook histories is just a matter of time. However, it is notable that Radkau still chooses to work on the mega-scale, and views one of the main tasks of environmental history as periodisation. Could these new periodisations be of interest to the 'mainstream' or will they continue to exist in their own, perhaps more 'popular' than 'academic' genre?

The flip side of particularist trends within environmental historiography is the development of a pattern of growth in the field that is cumulative rather than qualitative. The typical environmental history conference, which nowadays have grown into fairly large gatherings in both the United States and Europe, would boast dozens, if not hundreds, of new case studies, serving the main purpose of demonstrating that there is an environmental history to be told, of the energy crisis, of the tourism industry, of the Canadian North or the Argentinean South, of Sunset Boulevard, or anything. But as many as the cases may be, as few are the real, concretely identified scholarly problems

[42] Joachim Radkau, *Natur und Macht. Eine Weltgeschichte der Umwelt* (C.H. Beck: München, 2002).

that provide the common concern for the focused efforts of research by the many. Maybe this is to some extent a phenomenon in many sub-fields of history: there is always an untold history of anything. Nonetheless, we see it as a more disturbing phenomenon in environmental history.

For a precise reason. In contradistinction to many other sub-fields, environmental history does not seem to have enriched historiography with many new theoretical concepts or methodological approaches. Is this, one may rightly ask, a reasonable demand to ask from a young discipline? One could take the history of science as a comparison. It is older, by at least two generations, it is still larger and enjoys a stronger institutional presence in more countries. If it remains a comparatively small field, as a sub-field it is much clearer what the research is all about. This may sometimes be a disadvantage, and it seems quite clear that that the history of science was slow – at least slower than social sciences such as sociology and anthropology – in responding to some of the challenges raised by notions such as indigenous knowledge, thick description, and the geography of knowledge, concepts which have transformed the field in the last decade or two. The advantage of disciplinary coherence is, on the other hand, that the issue of problem solving becomes more transparent. The historical study of science carries a number of well articulated, stylized questions: Some large: 'What drives scientific progress?' Some more limited: 'What is the significance of the rewards in science, for example the Nobel Prizes?' Some empirical and fundamental: 'Has academic freedom increased economic output of research?' Some normative: 'Should universities be asked to perform more mission-oriented research in order to stimulate economic growth and social welfare?'

It is hard to conceive of such a readily articulated set of issues at stake in environmental history. Issues that have emerged, such as that of conservation that we have noted above, quite quickly turned into a tribal squabble among the environmental historians. What had at first appeared a clear-cut set of questions dissolved into a much more profound problem, of what the object of environmental history should be, of how one can take the measure of human-environmental relations: a problem familiar to us all, but difficult to sell as an *agenda.*

We of course also come to praise environmental history. Its syntheses and expansion of historiography into new areas has been, and will be, profoundly important, especially in the discipline of history that had neglected to think *historically* about such things. So, what seems missing most of all in an otherwise promising and lively sub-field of history, is perhaps a problem, or what would be more promising, a range of common issues and questions to push forward collectively. In the term 'environmental history' we have an immediately recognisable and perhaps politically powerful signifier, but the academic substance of what it signifies seems to slip away from us. The strange situation thus seems to be that the problem of environmental history is to identify what is its core problem. The people, the will, the ingenuity, even the resources and the external support are increasingly in place in many parts of the world. But where is the Problem that makes this a field where people would like to stay because they belong in the search, not just a transient area of intellectual stimulation?

As has been implied by the last several paragraphs, we believe that the answer is to be found in a combination of the past virtues of the field and some remedies of the past lacunae and shortcomings. The synthetic works are clearly landmark achievements, and even if this is the sole heritage of the field it has still probably all been worthwhile. And, certainly, one might take the view of the NHL talent scout and say that the entire sub-discipline is the breeding ground of a dream team. That is, after all, the American way. But in our slightly more mundane European mode of egalitarian thought, we would like most practitioners to provide useful contributions. And in this case one should have some significant rationale behind the less grandiose works as well.

How, then, could environmental history be designed to address real historiographical problems in more productive and less particularist ways than hitherto? In fact, we believe that environmental history is already on this road, but its practitioners must both reflect on and project out their work and potential. The field is ideally situated to bind together approaches from the natural sciences, social sciences and history in non-deterministic accounts of change. It can provide a translatory role between disciplines, both to explain rapid advances in the environmental sciences to other fields, but also to provide essential documentation and accounts of change to those environmental scientists faced with often de-contextualised data or faced with policy decisions based contingently on our current understanding of the value and dynamics of past environments. Important areas of advance in theoretical knowledge, such as social ecology or systems theory, have fallen into the view and armoury of environmental historians without perhaps having found a wider resonance in the humanities. Environmental historians are thus again ideally placed to provide a mediating and indeed innovatory impetus to understanding of these approaches. [43] This may also include a re-invigorating of the interest in the rich work done in historical geography within history departments. Again, environmental historians are beginning to develop a crucial role in this regard. The essays that we hope will be the outcome of our workshops should be able to speak to these issues, allow them to flourish and draw the attention of new audiences, and equally promote the field from a number of angles perhaps not yet conceived, at least not by us.

[43] See Verena Winiwarter, 'Landwirtschaft, Natur und ländliche Gesellschaft im Umbruch. Eine umwelthistorische Perspektive zur Agrarmodernisierung', in Ditt, K., Gundermann, R., & Rüße, N., *Agrarmodernisierung und öklogische Folgen. Westfalen vom 18. bis zum 20. Jahrhundert* (Paderborn, 2001), pp.733-767; Verena Winiwarter and Christoph Sonnlechner, *Der soziale Metabolismus der vorindustriellen Landwirtschaft in Europa* (Stuttgart, 2001); Alan Baker, *History and Geography*, pp.76-96.