Land

by Frank Uekötter

In the history of land, different dimensions overlap which are, strictly speaking, not interdependent. Land was simultaneously sovereign territory, the basis of agricultural production, a repository of mineral resources, a space to be accessed or travelled across, the object of expert knowledge and science, and the property of a state or private persons. The different rationales connected with these various perspectives resulted in numerous conflicts which became ever more difficult to resolve due to the increasing pace of change in most of these areas from the 19th century onward. If one views modern history "from below" in this way, it becomes a history of the mobilization of land.

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Introduction

At first glance, an article on land seems somewhat out of place in a historical project which attempts to view Europe as the product of intercultural transfer processes. Land is not typically subject to transfer, but is immobile to a high degree. The physical substrata of the land are the product of long geological processes, and the natural history of land has thus unfolded over time periods which are very long in comparison with human history. For this reason, land became a classic symbol of permanence and traditionalism in several European countries. And when land is made to move by wind or water, this movement follows natural laws, ignoring cultural conditions completely.

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As a result, a history of land can only be justified as a historical project by placing the relationship between man and nature at its centre. It is therefore less about land per se, and more about the "land under our feet". The duality of meaning of this phrase points to the quasi-subversive approach to the history of Europe which this perspective involves. One can write the modern and recent history of Europe as a history of the mobilization of land, which started to move in many respects: as property, as a space to be accessed, as a repository of mineral resources, and as state territory. It was a multi-dimensional process of change, which linked humans and the land, and transformed the two in tandem from the late middle ages onward, and these dimensions often appeared to be linked to one another in a very loose way, if at all. The history of land in the modern period can therefore be viewed as an experiment with an uncertain outcome: what happens when various groups with differing interests and perspectives make a grab for a resource which is finite?

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This article is intended as an outline discussion of a resource, the unique features of which are often not fully understood, even by environmentally aware observers. Soil is a comparatively inert medium, which withstands even the worst forms of abuse with great endurance, on the one hand, but, on the other hand, it bears the scars of abuse openly for a long time. Contaminated soil is much harder to repair than contaminated water, for example. To this extent, it is possible to describe the history of land in the modern period as a keen contest between human memory and ecological memory – at least, when a degree of anthropomorphism is accepted. In and of itself, land – like all natural objects – does not imply any norms with regard to good and bad behaviour, but is governed by laws of its own, which have not yet been fully decoded.

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Land and Power

Placing the issue of the territories of nation-states at the start of a discussion of land does not mean a reversion to the traditional categories of political history. Conflicts over borders have occurred throughout European history. However, it is instructive to observe these conflicts "from below", as part of the history of land. The immobility of land could lead one to the assumption that land made precise geographical demarcation possible, at least in those regions where there was no moving *frontier*. However, for a long time, concepts of territorial borders (➔ Media Link #ab) remained much more vague than the lines on our historical maps imply.

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This can be demonstrated particularly clearly by the history of the border between France and Spain in the Pyrenees (➔ Media Link #ac), which is interwoven with the history of the emergence of these two nations. This border was one of the most stable political borders in Europe and experienced no significant changes from the annexation of the province of Roussillon by France in 1659/1660 onward (➔ Media Link #ad). It is all the more remarkable, therefore, that this border was not precisely defined geographically and marked with border stones until 1868.[1]

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It is also significant that this border did not correspond to the topographical features. The Pyrenees border did not follow the mountain peaks, but cut across a river valley, thereby contradicting the French myth of the *limites naturelles*. These "natural" borders only became a politically hot topic in the period of the French Revolution as the borders of Europe became fluid during the course of the Revolutionary Wars (➔ Media Link #ae); militarily advantageous positions became decisive. The reunion policy of Louis XIV of France (1638–1715) (➔ Media Link #af) had ignored the doctrine of natural borders and had made use of old legal titles instead. While the natural law of the Enlightenment had provided a justification for establishing clear borders, it did not suggest a means of identifying these in the landscape.[2]

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The concept of natural borders was not informed by a consciousness of geographical living spaces. Military logic and topographical reality only coincided where mountain ranges marked political borders. From an ecological perspective, the Rhine border should not have been drawn along the centre of the river, but along the watersheds. It is indeed remarkable how long politically decreed borders continued to exist in spite of the fact that they contradicted ecological logic. In German water law, for example, it was only the European Union Water Framework Directive of 2000 which introduced the principle that measures to prevent the pollution of waters should take into account the entire territory drained by a river, not just the section which falls in a particular political region. This was a veritable culture shock for many local authorities.

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The process of the development of more precise borders occurred in tandem with developments in land surveying and cartography. It was these developments which made the definition of exact geographical borders possible in the first place. This connection is particularly well documented in relation to the Topographical Map of Switzerland which was compiled between 1833 and 1865 under the direction of the general Guillaume-Henri Dufour (1787–1875) (➔ Media Link #ag) – an important act of Swiss nation-building in which military and political protagonists came together with academically trained experts. While the general was still alive, the Swiss Federal Council decided to name the highest Alpine peak in the country "Düfour Peak" (➔ Media Link #ah), clearly reflecting the symbiosis of individual interests involved in the compilation of the map.[3]

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Land as a Possession

"Die Ordnung des Bodens ist eine Grundoperation der Moderne […]. Es gilt die Regel: Kein Staat ist 'modern' ohne Kataster und ohne rechtlich frei disponibles Grundeigentum."[4] This statement may raise objections among Greek readers, as the task of compiling a land register for the whole of Greece was only commenced a few short years ago. However, as a general observation, this statement identifies a central aspect of the mobilization of land in the 19th and 20th centuries. The fundamental trend in property law in the modern period is the replacement of a complicated patchwork of legal titles, which were ultimately only comprehensible in their historical context, with a bourgeois property law with procedures for leasing, mortgaging and sale which were stated in writing. In the modern period, land is principally tradable on the open market. In pre-modern societies, the specific conditions of the respective locality determined whether, and how, landownership could be transferred.

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This process of legal reform occurred in tandem with a simplification of structures of land use. Pre-modern agriculture featured forms of use which were incompatible with the modern understanding of property: for example, transhumance, which involved the seasonal migration of animal herds over hundreds of kilometres each year; woodland grazing; and collectively farmed common-ages. The dissolution of these was a central cause of conflict for the European-wide agricultural revolution and an essential step towards a commercialization of agricultural production. Pastoral nomadism, on the other hand, receded gradually since the transformation of the land in connection with the ever more intensive use of land made such forms of land use increasingly less attractive.

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Throughout Europe, changes in property law and land use brought the question of land reform onto the political agenda. Even in Finland, where the problem could easily have been alleviated by clearing some of the country's vast forests, changing structures of landownership to the advantage of the landless agrarian population became a key political issue. In the case of Finland, the social conflicts in the countryside were defused by a comprehensive agrarian reform, which the newly independent Finland undertook in the 1920s.[5] However, this kind of decisive action was the exception, rather than the rule, in Europe. The migration of landless rural dwellers into the cities proved a more effective outlet for social tensions among rural society that political programmes aimed at reform.

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In any event, a fundamental re-ordering of conditions of landownership only occurred in socialist countries (➔ Media Link #ai). The collectivization of agriculture was a fervently contested cornerstone of socialist agricultural policy (➔ Media Link #aj) which gave rise to considerable social tension after the fall of the socialist regimes in 1990. The spectrum of post-socialist solutions runs from comprehensive privatization, as occurred in Lithuania, to opaque and unsystematic policies which involved endemic corruption, as it was the case in Romania.[6] While the question of land reform has again become an important and contentious issue in Asia, Africa and Latin America in the last two decades, there is no sign of a similar development in Europe.[7] However, this might have been different if the cases taken by former large-scale landowners to the European Court of Human Rights against the East German land reforms had not failed.

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No Entry! The Question of Access

There is another aspect to property law which should at least be mentioned here. In the modern period, the right of the individual to freedom of movement tends to come into conflict with private landownership. This problem is not so conspicuous in the case of agricultural land, but in the case of areas commonly used for recreational activities the issue of access to private property can cause much conflict. Few countries have established such consistent laws on this issue as the Scandinavian countries, where the Right of Public Access, which is treasured by tourists and locals alike, gives all people the fundamental right to move freely in all territories. In the class-based society of England, on the other hand, the principle of "no trespassing" has a long and contentious tradition.

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In the 19th century, rights of access were a common cause of tension, such as in the case of woodlands. Forestry reforms amounted to a decades-long campaign on the part of states to establish a monopoly over the use of woodlands. However, these issues have since become considerably less contentious. The role of woodlands (➔ Media Link #ak)as a refuge for endangered peoples – a role which they have played up to the recent past in other parts of the world such as the Mexican state of Chiapas and the Ho Chi Minh Trail – was ended in Europe in the 19th century by the power of the European territorial states. Only the glorification in folklore of poachers such as Georg Jennerwein (1848–1877) (➔ Media Link #al) in Bavaria remains as evidence of the potential for conflict which the issue of the use of woodlands once contained.

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Mineral Resources

Interestingly, the homogenization of concepts of landownership throughout Europe referred to above was linked with a considerable divergence in the legal treatment of materials found *beneath* the surface of the land. These vast differences are illustrated by the existence of complete mining freedom (i.e., the unrestricted right on the part of the finder to exploit mineral resources) in some jurisdictions and of a general right of ownership on the part of the state (in the form of the medieval *Bergregal*, which was the ownership privilege of the sovereign) in others, though the latter was in many cases softened by the introduction of systems of concessions for the private sector in the modern period. A broad spectrum of solutions exists between these two paths, with solutions differing not only from state to state, but from one mineral resource to another. Mining law is one of the few areas of economic law in

Europe which even the European Union is reluctant to attempt to harmonize. There is nonetheless a pronounced bias in favour of mining throughout Europe, which results from the transnational view that the extraction of mineral resources is very much in the interest of domestic economies, but that it also carries considerable risks for the companies involved: "Fast alle Rechtssysteme sind deshalb dazu gelangt, die Arbeit des Schürfens zu erleichtern und sogar anzuspornen."[8]

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Of course, legal differences between countries have been less decisive than geological conditions and the technological-industrial complexes used to bring the respective minerals to the surface. No industry has changed land in such a brutal manner as 20th-century mining. Gigantic earth-moving machinery, enormous opencast mines and other technologies have turned the northern Ruhr region, for example, into a polder landscape in which the pumps must never be turned off. By comparison, pre-modern mining seemed positively idyllic, not only because opencast excavation and technical rationalization subsequently enabled the movement of quantities of earth which were of a different order of magnitude. Rammelsberg near Goslar has become a UNESCO World Heritage Site along with the accompanying system of man-made lakes and streams, and the salt mine at Wieliczka in Poland was also able to attain this coveted status (➔ Media Link #am).

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The effects on the land – although limited to the locality – were massive, particularly since – even in heavily regulated Germany – a thorough recultivation of the soil only became mandatory after serious controversies. From the 19th century onward, the distance between the sites where mining and processing occurs and the society which consumes the mineral resources has grown. This situation has only partially changed in the recent past, as demonstrated by the protests against power stations in Hamburg-Moorburg and Datteln, which focused on the climatic effects of emissions rather than the question of the origin of the imported coal. However, transnational networks in mining already existed in the 19th century, and not only in the case of precious metals. For example, the steel company Krupp owned iron ore deposits in Spain ever since 1872 and acquired more than 80 per cent of its ore from abroad in the years before the First World War.[9]

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Land as an Object of Knowledge

There are few topics which so clearly demonstrate the gulf between the history of knowledge and the history of science (➔ Media Link #an).[10] Mining was an industry with knowledge entrepreneurs and experts employed by the state long before deep-shaft mining became an academic discipline with the founding of academies in Freiberg and Schemnitz in the 18th century. The most famous description of mining technology in the 16th century is the book *De Re Metallica* by Georgius Agricola (1494–1555) (➔ Media Link #ao), which was published posthumously in 1556.

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Expert knowledge about land thus emerged in very pragmatic ways, as this knowledge was required for the exploration of valuable minerals. Geology only emerged as a scientific discipline in the early 19th century, and it had a significance which went far beyond the subject itself. The controversy between Neptunists and Plutonists was also a debate about worldviews: whereas the former viewed sediments as the origin of rock and were associated with conservative thought, the focus which the Plutonists placed on vulcanism could be viewed as a metaphorical representation of revolution. Additionally, geological studies allowed for an enormous expansion of the assumed timespan of human history.[11]

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Soil science, the study of the top layer of the earth, developed as a science over a century later, and – just like geology – it was characterized by a high degree of internationalization. This is reflected in the fact that an international scientific association for soil science was founded before a corresponding German association, and the former provided the impetus for the founding of the latter. The International Society of Soil Science (➔ Media Link #ap) was founded in the International Institute of Agriculture in Rome (the predecessor of the present-day Food and Agriculture Organization of the United Nations (➔ Media Link #aq)) in 1924. The Deutsche Bodenkundliche Gesellschaft (➔ Media Link #ar) came into existence two years later as one of more than a dozen national sections.[12] In soil science, as in other areas, German science enjoyed worldwide recognition, perhaps best embodied by the ten-volume *Handbuch der Bodenlehre*, which was published by the Göttingen professor Edwin Blanck (1877–1953) (➔ Media Link #as) between 1929 and 1939.[13]

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Geology and soil science were primarily descriptive, classificatory disciplines which did not fundamentally depend on causal models. For this reason, the fact that the theory of continental drift, which is central to the contemporary understanding of geological

events, did not become generally accepted knowledge until the 20th century did not pose fundamental problems for scientific work in this area before 1900. It is necessary in this context to point out that earthquakes are of course part of the history of land, because the European perspective tends to under-appreciate this fact. It is a paradox of environmental history that the earthquake of San Francisco of 1906 entered the collective memory of the United States, while the memory of the earthquake of Messina two years earlier, which claimed a far greater number of casualties, remained confined to the region.[14]

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The Mystery of Fertility

Among the characteristics of land, fertility has always been of particular importance. Up to the present, the capacity to produce and sustain plants is not understood in all aspects because it involves a complex collaboration of chemical, physical and biological processes. To start with, the chemical basis of soil fertility became the object of scientific research, with the Germans Carl Sprengel (1787–1859) (➔ Media Link #at) and Justus von Liebig (1803–1873) (➔ Media Link #au) playing a key role which gained international recognition. The agricultural chemistry which they established provided the scientific basis for the use of fertilizers, which has boomed since the mid-19th century. Research into the physical conditions required for fertility proceeded more slowly. They were not studied intensively until the disciplines of soil physics and colloid chemistry emerged in the 20th century. However, researching the biological – and in particular the microbiological – bases of soil fertility proved most problematic because the variety of bacteria species involved is bewildering. Soil is often described as "a rainforest in miniature" because a spoonful of fertile soil is comparable to the Amazon Basin from the perspective of the variety of species.[15]

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In any event, scientific understanding was sufficient to improve the fertility of soil in a targeted way. Together with the systematic development of seed and better plant protection, the invention of artificial fertilizers played a central role in the exceptional increase in crop yields which has made hunger a distant memory in Europe. These improvements in soil fertility made the dystopias of Thomas Robert Malthus (1766–1834) (➔ Media Link #av)obsolete in the European context, though they came at a price: Soil erosion, the contamination of ground water and surface water with unused nutrients, and the dependence of agricultural production on external resources are among the palpable consequences, and there is much evidence that these side effects of chemical-intensive agricultural production will become increasingly serious during the 21st century.[16]

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Lack of Respect

This leads us to the last chapter of this brief outline of the topic. The history of land in the modern period is also the history of the underestimation of the importance of land as the basis of life. It would indeed be incorrect to categorize all pre-modern agricultural methods as sustainable. For example, the practice of gathering foliage and brushwood in woodlands to use as fodder for livestock had a very detrimental effect on the humus balance of woodland soils, and was one of the most destructive of all the pre-modern forms of woodland use. However, the path to the industrialized agricultural production of the present has been shaped by a simplified concept of fertile soil, which – taken to its extreme – reduces fertile soil to a means of storing plant nutrients in a production process which leads from the chemical factory to the supermarket. The enormous and technologically avoidable reductions in soil fertility which were a feature of agricultural production in the 20th century are a result of this narrow view.[17]

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While farmers remained conscious to some degree of the need to maintain soil fertility, the urban population often lacked all understanding of this issue. Clean air and water were the central priorities of the pan-European hygiene movement, while concern for the health of soils was restricted to gardeners and specialists from the parks authority. Only the theory of miasmas, going back to Hippocrates of Kos (ca. 460–370 BC) (➔ Media Link #aw), which suggested that vapours escaping from the soil were a cause of illness, had promoted a degree of interest in the soil. However, this interest disappeared completely after the theory had been disproved and bacteriology came to dominate medicine in the late 19th century. Right up to the present, there has been very little interest among the urbanized societies of the West in soil erosion and similar topics.

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Consequently, a feature of the history of land in the modern period is the increasing covering-up of land with buildings, roads and other infrastructure. This development began in the 19th century as towns and cities expanded beyond their original walls (which were then often destroyed) and an increasing number of roads and railways crisscrossed the countryside. From 1945 onward, this development entered a new stage with the proliferation of automobiles and suburbanization, which transformed the landscapes of Europe. Indeed, it seems symbolic of the Europeans' attitude towards soil fertility that they congregate each summer on sandy

beaches, which are almost entirely unsuitable for growing plants.

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A European History?

None of the processes described was exclusive to Europe. Suburbanization and road-building, the intensification of land use, and the excavation of mineral resources are truly global processes. The concept of landownership which developed in Europe has become the norm worldwide. After the experience of bloody wars, the borders of nation-states are now universally accepted and are only rarely called into question, such as in Great Britain and the Spanish Basque Country. Throughout the second half of the 20th century and the beginning of the 21st century, border changes have almost exclusively occurred as a result of the disintegration of states: the Soviet Union, Yugoslavia, Pakistan, East Timor and – most recently – Sudan.

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In view of these considerations, is it possible to discern a specifically European trend in the history of land? It is not possible to discern a unique trend in relation to the most important factor in the interaction between humans and land, i.e. population density. Most European countries fall somewhere between very densely populated regions such as Japan, Korea and the coastal regions of China, and the comparatively deserted regions of Australia, Canada and Argentina. In my view, it is nonetheless possible to identify five reasons why the history of land in Europe has perhaps been somewhat less dramatic than in the rest of the world.

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The dramatic growth which was a feature of large European cities around 1900 slowed down during the 20th century, and in some cases there was even a reduction in population. Vienna is the only large city in the world which has experienced a continuous reduction in the size of its population since the end of the First World War. There is a marked contrast between the intensive growth of the extremely densely populated mega-cities of the southern hemisphere and the growth of cities in Europe since 1945, which have mostly followed the model described in the Athens Charta which envisaged less dense cities with functionally divided zones. The societies of Europe are more disconnected from agriculture (due to the earlier onset of industrialization and urbanization) than populations in other parts of the world. As a result, competition for agricultural land is not a contentious social issue. The contentiousness of the topic of land reform in the southern hemisphere stands in contrast to the indifference of Europeans with regard to structures of landownership in the countryside.

19th-century Europe also lacked the frontier experience which was a feature of the history of many other regions of the world in that period. Russia was the only European country which experienced a dramatic expansion in the available land with the cultivation of the Steppes.[18] The determined efforts to promote "internal colonization" – the cultivation of unused land within the territory of one's own state – in Germany and other countries did not have a significant effect on the land available for agriculture or on collective mentalities. If a frontier spirit existed in Europe at all, this was the case in specific regions at the periphery, and even in these regions there were no attempts to bring land and mineral resources into private ownership as quickly and cheaply as possible, as was the case in the USA up to around 1900.

This hints at an essential advantage of Europe in the global history of land. The transition to modern concepts of property occurred very early in Europe, often before the era of industrialisation (➔ Media Link #ax). While mining law and systems of land registry only emerged in the southern hemisphere after these regions had been incorporated into the global economy, in Europe they belonged to the conditions in which industrialization emerged, and they were not challenged during the industrial age. The regulation that legal titles relating to land had to be recorded in writing – one thinks of the English *Domesday Book*, in which William I of England (1028–1087) (➔ Media Link #ay) had the landownership structures of his realm documented – was in itself a momentous achievement. The acrimonious conflicts between southern hemisphere countries and multinational companies give an indication of the problems which Europe has avoided in its history of land.

Generally, climatic and geographical conditions have protected Europe against agricultural crises. Many European regions have good, humus-rich soils and a relatively even distribution of rainfall throughout the year. This enables them to engage in agriculture without artificial irrigation. This gave European land an inherent tolerance for error, which served as a safety buffer during the project of agricultural intensification. The serious damage caused by the industrialization of agricultural production in many regions of the southern hemisphere is perhaps partly due to the fact that nature is more fragile there due to climatic and ecological conditions. It remains to be seen whether Europe will retain this advantage under the conditions of global warming. The palpable fear of desertification in Spain may prove to be an omen of things to come.

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Appendix

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Notes

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5. ^ Singleton, A Short History of Finland 1998, p. 120f.
6. ^ On the latter, see the case study by Dorondel, Agrarian Transformation 2007.
7. ^ Rosset, Promised Land 2006.
8. ^ Isay, Bergrecht 1929, pp. 437–487; quotation on p. 438 ("For this reason, almost all legal systems now seek to make prospecting work easier, or even to encourage it", transl. by Niall Williams).
9. ^ Gall, Krupp 2000, pp. 93, 288.
10. ^ On this, see in particular Vogel, Ein schillerndes Kristall 2008.
11. ^ Rudwick, Bursting the Limits 2005; idem, Worlds before Adam 2008.
12. ^ See Blume, 75 Jahre 2001.
13. ^ Blanck, Handbuch 1929–1939, vol. 1–10.
14. ^ Uekötter, Europäische Geschichte 2009, p. 7.
15. ^ See, for example, Baskin, Under Ground 2005, p. 3.
16. ^ For a general discussion of all these topics, see Uekötter, Die Wahrheit 2010.
17. ^ ibidem.
18. ^ Sunderland, Taming the Wild Field 2004.

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