

## Environment and Archaeology as seen from a Distant North-west

### Synopsis

The paper is an attempt to give some orientation on an actual debate in Scandinavia, between anthropologists, natural scientists and archaeologists. As far as general principles are concerned, it might have some interest for the Conference. It is emphasized how long the history of such co-operation is. Concentration is on one of the perspectives in the memorandum by Denis Baly, 'Some preliminary thoughts on environment: the importance of "the perceived environment".' Our data are selected by members of communities in the past, and by ourselves. How far is adaptation cultural? How far can deterministic interpretations be used?

Finally, our environmental studies will be future orientated.

This is a conference on the history and the archaeology of Jordan; its special topic is *environment*. An archaeologist who hardly ever contributed to any really *environmental* archaeology, who never was in Jordan before, who only once saw a glimpse of southwest Asia, in its northern fringe, and who is placed before an audience with so many eminent representatives for active and successful research of this kind and in these regions—what can he do?

In spite of all this I have in mind to speak rather more on archaeology in Sweden and in Northern Europe but not in regional detail; instead, with a concentration on general questions. For, after all, maybe it could be of some interest here to try to see the problems of environment and archaeology in Jordan as in a spotlight from far away, from so different and comparatively exotic environments—but with some of the crucial general problems in common. So, let me try to use my distant homeland as if it might be an Archimedean point outside this part of the world; but, of course, without any Archimedean intention whatsoever to try to move your world of environmental studies.

Of course, all this is because of an interest in not only using this magnificent opportunity to learn about the history and archaeology of Jordan, but also—and no less—to be able to bring to it some useful received perspectives and ideas.

Just now, there is a special opportunity for such a spotlight experiment, because important issues have been brought to

our attention by two recent debate meetings in Sweden; or, rather, two confrontations of views—where archaeologists met on one occasion with natural scientists and on another with anthropologists.

### Already long ago . . .

First, as a background, a few words about the history of the subject. The interaction between environmental and archaeological research has a long history, although the beginnings of it are forgotten, sometimes. But the attempts, early or present, in Northern Europe have to be seen in an international perspective. It has to be stressed that an important branch of palaeolithic archaeology was born out of speleological studies with palaeontology in the focus; that research in the Mesolithic originated (long before its name was invented) in the Danish Kjoekkenmoedding Commission of 1848, with one archaeologist, one botanist and one geologist: (Klindt-Jensen, 1975: 71). These approaches were continued, but usually without extension, to later periods. For these, the impetus came rather from geography, with such initiatives as in the German 'Typen-Karten-Kommission' at the beginning of this century, or landscape oriented activities in Britain—for instance, by Crawford and Fox; but, again, also in Denmark, by Sophus Müller.

The continuation from these beginnings until the present are well known in this audience, certainly; let me just refer to a few selected names. As regards the beginnings and early history of food production, the imprint studies begun by Sarauw (on Sophus Müller's initiative) led up to Helbaek's research; from Lagerheim, who started pollen analysis, also in the beginning of our century, we arrive at such eminent specialists as those we have amidst us here. But, mainly, the links from early periods thousands of years ago over to later periods, including the present, have been weak, in spite of the efforts of Grahame Clark and others.

However, integration advanced. In a broad perspective, different branches were assembled into one research project, prepared at the University of Chicago during the second World War, and then started in the field in southwest Asia under the auspices of Robert J. Braidwood's excavations,



with so many and important scientists participating; from this point onwards, different branches of related research started (Braidwood, 1981). For Scandinavia, and later periods, the excavation of Vallhagar on the island of Gotland, a Migration Period settlement, as a pan-Scandinavian project directed by Stenberger, became much of a turning point (Stenberger, ed. 1955). The field was more and more seen as one important entity, as expressed by the title of Butzer's textbook, *Environment and Archaeology*, with its first edition in 1964.

This is a very brief personal selection; others would have chosen otherwise, but the essential is to be aware of the very long and rather complicated tradition behind us, and of the interdigitations of regional and international efforts.

### Archaeology and natural science

In the memorandum by Denis Baly, 'Some preliminary thoughts on environment', distributed with the invitations to this symposium, the importance of 'the perceived environment', among others, is considered with a certain emphasis. This sounds very attractive to an archaeologist who regards archaeology as the study of the human factor, in a long time range—up to the present; a study to be carried out in close co-operation with other disciplines, using data from direct observations, or from written sources.

But the awareness of these different factors, natural and/or human, is widely different among archaeologists. A rough classification: there are archaeologists who do not care for environment or nature; we do not have to consider them in this Conference. Then, there are those who are concerned. Again, there is a rather clear dichotomy: many are interested mainly in inventarisation of regional data; very many of these—I fear sometimes that they are in the majority—have a tendency to regard the natural scientist as one who might give service, such as providing lists of determinations, or answers to unspecified questions ('does this tell you anything?'), the interest being more in inventarisation and in distributional study of natural resources. But then, the really important ones are those who want to work *with* their colleagues in natural sciences, in a joint strategy for common goals, including a real, integrated palaeoecology. Here, there is a real interest in problem-oriented research in progress.

In 1981, a joint committee from two national research councils in Sweden, one for natural sciences, and another for humanities and social sciences, organised a seminar on 'Archaeology and Natural Science'. A report was published, in November, 1982. In this report, one can see an important trend; it expressed a desire among natural scientists to promote, or even provoke, interest among archaeologists for an increase in the application of integrated, problem-oriented views, on their co-operation. How far there was or is a response, was less clearly expressed. (*Arkeologi och naturvetenskap*.)

In this seminar, there was much discussion about resources, organisation and administration; all this can be omitted here. But in the more general debate, there was an evident dichotomy

of the kind just mentioned. As one extreme view, a quaternary geologist characterized archaeology as 'a part of palaeoecology'. (Berglund in *Arkeologi och naturvetenskap*.)

Inevitably this seminar of 1981 approached the problems of determinism. The question of determinism or non-determinism is inextricably linked to the problem of, not how the landscape *is*, but how it is *seen* and *understood* by man; which is the relation between 'real' change as we would describe it scientifically, and the culturally and psychologically influenced perception of environmental change, which was *their reality*. It is obvious that human visions of one and the same environment can be deeply different. But how do such differences influence their adaptive behaviour towards it? And, most difficult of all, but quite essential in this context of 'environment and archaeology', can archaeology give us any information on these visions?

First, the question of links between vision and behaviour. This is a problem for anthropology. It happened to come into focus at an anthropological and archaeological contact symposium in Scandinavia, held in 1981, and to be published in 1983 (Hjort, ed.). (In passing, it has to be remembered that Swedish archaeological training includes no, or next to no, anthropology—according to a tradition in several parts of Europe; this situation, so different from an American one, creates certain restraints on a debate of this kind. As another expression of an actual similar concern to ameliorate contacts of anthropology with other disciplines a seminar was held for historians and anthropologists, including 'European ethnologists', in 1982). The 1981 symposium was initiated by the Swedish Council for Coordination and Planning of Research, via its Committee for Future Oriented Research. Its theme was 'the importance of natural resources for culture and society'. Of special interest in our context is the considerable emphasis placed on the importance of 'the perceived environment'. Accordingly, a main question concerned correlation or not between natural resources and socio-cultural situations.

Exemplifications varied immensely. For instance: clearly, the environment of Iceland is extremely different from that of Jordan: an island, surrounded by the North Atlantic Ocean, with glaciers and enormous supplies of fresh water. On the other hand, Iceland has been deforested since the Middle Ages: originally, Icelanders had an economy based mainly on the breeding of sheep. And, from a general point of view, Iceland seems to provide an interesting example of the necessity of a deep change in the notion of 'adaptation': the rich natural resources in fish were very little used, for a long time, because of a resistance in the perceptions of environment and economy. Regarding this situation, Hastrup (Hjort, ed.) arrived at a conclusion with a challenge for argument within it: 'Finally, cultural categories are the most important natural resources for man'. After all, maybe it is natural that the Nature of anthropologists is more human than the Nature of natural scientists?

So far, then, these two rather different contact meetings



seem to have placed archaeologists under cross-fire, both from the natural science and the social science side. The importance of 'the perceived landscape' was urged; and, on both sides, there were instances of awareness of the importance of the human factor in the present, too: the 'perceived environment' of the researcher. This has consequences for the general interpretation, with much in common for this distant North-west and Jordan.

As for this impact of the human factor in the present, by way of the investigator's 'perceived environment', I would like to mention two noteworthy Scandinavian contributions to a debate on biased interpretation of osteological or other macrofossil data. At the symposium on natural resources, an archaeological paper (Larsson, in Hjort, ed.) presented a case where a change of excavation method could change the inhabitants of a site from an economy of 'big game and seal hunting', supplemented by use of only a small number of large-sized fish species, into a fishing economy, where small fish might have had a decisive importance. Shall we try, in our imagination, to apply such an experience to this part of the world, and try to accept the idea that there could exist another, different Mureybet, another Çayönü, another Beidha . . . our 'facts' being reflections of the selected questions asked?

(It could be tempting, for this outsider, to try to ask these types of question in connection with two sites: First Çayönü. If 'the appearance of domesticated animals came rather late', whereas 'wheats—and pulses were available from the beginning'—are the agencies resulting in this change only adaptational, in a traditional mainly biological meaning, or do they include change in 'cultural categories' as 'important natural resources for man'? (Braidwood and Braidwood 1982: 11–12; Lawrence 1982). Then Tell-Mureybet, according to Ducos (1978): can the same perspectives be applicable on the changes in the size of hunting territories, choice of heavier game, and finally a proto-domestication—according to conclusions based on archaeozoological and statistical investigation? In a deeply different and much later context, taken together with demography etc., which are the 'human forces that were harnessed in the building of the cities themselves', (according to Robert McC. Adams 1981: 252), and in which interaction with other forces? Can such questions be answered, archaeologically? Or are we then too deep in the shadows where no answers can be given (Cleuziou 1980: 356).

To some extent, these views coincide with those expressed by Olaf Olsen, Denmark, (in another context) on the quantitative approach in urban archaeology. 'One might believe that an archaeologist is a person who loves everything from the past. Nothing could be more wrong. He or she is usually a specialist who devotes his life to the study of a certain period or feature and pays a little attention to other remains from the human past. I suppose that zoologists are pretty much the same; specialists in land snails probably only feel a half-hearted interest in reindeer and bats'. Examples of different

kinds illustrate such possible influences from investigators' 'perceived environment'.

### Basic questions

The basic question is on reductionism or complexity. Can we reduce the problems of environment and man in archaeology to a simple solution, by explaining either man as determined by environment, or environment as determined by man? Evidently, nobody here would accept the second answer. As for the first possibility, it has its proponents, even among archaeologists. The first of three volumes of a new textbook on *Archaeology in Sweden* has just been published, by Göran Burenhult. There, man is seen as an integrated part of nature; the needs of a society are marked by the ecological system; they determine the social structures, the religions and the prejudices. Socio-economic and religious systems are the consequences of adaptation to resources (Cf. also Rausing, 1981).

To me, it seems quite clear that such a fully-fledged determinism is incompatible with such views of the importance of the perception of the environment as have been reviewed here. Instead, the latter would necessitate the acceptance of non-reductionist explanations, involving more complexity. The task would be, not to tell the story of environment and man from an established next-to-total determinism, but rather to investigate how far and by which mechanisms interdependence functions.

Thus, our examples illustrate the wide divergence between the positions held by different archaeologists in the region I have used for comparison. Ultimately, such differences in views are expressions of initial choices of first points of view—closely connected with ideologies.

This situation might seem discouraging for those who would prefer to envisage a future archaeology with basic overall identity and homogeneity of perspectives and results. But if one is inclined to see science rather as a continuing dialogue, where creativity depends upon the existence of a positive climate for debate, then the present argument can be seen as a promising one—for the future of environmentally oriented archaeological research. However, a necessary precondition for success in this direction is that the inherent limitations of our interpretational models are made explicit.

### Perceived archaeology, perceived sciences: time geography, ecotechnology

From these perspectives, mainly seen from a so distant North-west, over to broader, general questions. 'Archaeology and Environment'—but what sort of archaeology? what kind of environment?

Different voices want to tell us that *archaeology* is paleoecology (Bergsten); that archaeology ought to be archaeology, a contextual archaeology (Butzer); that archaeology is anthropology or nothing (Willey); personally, I would like to add that archaeology is history, in the analytical form of problem history (Furet) (to be carefully distinguished



from 'recitative history'—telling the chronicle of the past). There are analogies and points in common with geography, be it chorological, positivistic, behavioural or humanistic (Paddaya). *Environment* can be seen as physical, cultural, perceived or human (Baly).

In the intersection of these archaeologies and these environments is ecology—again in a wide spectrum from biological to human ecology, but a spectrum which can be seen as 'ecology under one perspective' (Hägerstrand, after Carlstein), the perspective of time geography, where the questions on 'what did they *not* do' are often more in focus than the one 'what did they do'.

In a wider context, these kinds of 'perceived archaeology', 'perceived geography', 'perceived ecology' have to be seen in the light of 'perceived sciences', depending ultimately upon the world views in different socio-economic and intellectual environments of the researcher.

How can archaeology contribute in this intersection? Its role in conjunction with biological ecology is already traditional. But what can archaeology do, meeting concepts of perceived environment, in outspoken human ecology? Here, interesting and challenging vistas may be opened up by the notion of ecotechnology, the theory of which has been presented by Carlstein, recently, in continuation of Hägerstrand's ideas. Ecotechnology is seen as 'an intermediate factor between ecology, on the one hand, and economy, on the other'; 'people also interact with "populations" of non-living things'; 'by analogy, technology has its own kind of ecology' the 'dead things' have 'life-times', 'birth rates', 'age distributions', 'food chains' and 'trajectories', etc. We have to deal with these 'if we are to get a better understanding of both pre-industrial and industrial technology'.

### Towards perceptions of future environments

Finally, let us return to the very direct question of pictorial visualization of the past landscapes—virtually of the modern researcher's perception of these. Such experiments also have a long history (actually, there exists a clear instance from Denmark as early as 1898; Steenstrup pp. 6–8). Most recently, a thesis on the agrarian geography of the island of Gotland included a series of such drawings (Carlsson, 1979: 155 f.).

Other instances of attempts in this difficult direction could be added, of course. But there is another reason for mentioning this matter here, as a final conclusion. Under the auspices of the same authority which organised the archaeology–anthropology symposium mentioned here, a group of specialists have co-operated with an artist in creating a sequence of visions, starting in a remote past, *but continuing into the future*, according to different alternatives. This brings us to a most important point where we have to realise that the results of our research on environment in archaeology and history have a place in the foundations for planning and decisions. This is expressed clearly in a project sponsored by the Swedish

Committee for Future Oriented Research (Brusewitz *et al.*, ed.).

It gives us a reminder of a responsibility: for our links in a chain from archaeology into futurology. There are reasons for having good hope in the future for this kind of research. But this research will have to be one of constant change.

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