

# Discontinuity, cultural evolution and the historic event

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## SUMMARY

*Aspects of the traditional culture concept, the closely connected twin concepts of continuity and discontinuity, and their usefulness for prehistory are reconsidered. Continuity and discontinuity are considered as functions of the evolution of culture; it is argued that the role of the historic element should not be overlooked.*

## 1. INTRODUCTION

This paper is the revised version of part of the Rhind lectures presented by the author in 1983. It is written by someone who, as a prehistorian, grew up under the domination of the migration paradigm, in the service of which the twin concepts of continuity and discontinuity became the essential instruments, and who, as a student, discussed with fellow students how prehistory could appear to present itself as a turmoil of movement and migrations, notwithstanding the fact that well-documented wanderings like those of the Cimbri and Teutons or the Visigoths had left no archaeological traces at all.

A generation ago, the (prehistoric) culture concept was central in the work of most prehistoric archaeologists in Europe. In 1929, Childe had been the first to really define the concept, but since the turn of the century and the days of Kossinna the idea had been at the heart of the continuity-discontinuity-migration paradigm, which somehow monopolized thinking on the explanatory level, while on the analytic level the main concern had been the distribution in time and space of archaeological phenomena. The excesses of the ethnocentric continental school of prehistory in the first half of this century, and the abuse made of the latter's findings by party- and state ideologists, had done little to alert pre-war prehistorians (with the exception of Childe and Tallgren) but it may have helped to put post-war prehistorians on their guard, and to prepare the younger generation for the reaction, which ultimately broke through with the writings of Binford in the United States and David Clarke in Great Britain.

Today, the culture concept in the Childean sense is handled with suspicion and the migration paradigm is banned from archaeology. Prehistoric archaeology is penetrating into new and promising fields of research. Literature is full of stimulating ideas. Yet archaeologists of the older generation, even when applauding these new trends, wonder how readily concepts are being

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rejected because they have been used in a way we now recognize to be defective, without further reflection as to their possible usefulness for our understanding of the ways of culture change. Let this paper be accepted, not as a futile attempt to turn back the clock, but as an effort to prevent future babies being thrown away with the bathwater.

## 2. ASPECTS OF THE CULTURE CONCEPT

Of the prehistorians working in the first six decades of this century under the dominance of the culture-(dis)continuity-migration paradigm, Childe was the one to reflect explicitly on the implications of the culture concept. In a recent analysis of his work, Barbara McNairn (1980) exposed the development over almost 30 years of Childe's thinking on the culture concept. For the present purpose, we select the definition Childe gave in the introduction to his *Prehistoric Migrations* (1950). It certainly does no justice to Childe's varied considerations on the subject, but it conveys the essence as understood by his contemporaries:

'A culture is defined as an assemblage of artifacts that recur repeatedly associated together in dwellings of the same kind and with burials by the same rite. The arbitrary peculiarities of implements, weapons, ornaments, houses, burial rites and ritual objects are assumed to be concrete expressions of the common social tradition that binds together a people'.

The definition consists of two parts, of which the first gives the definition proper, whereas the second presents an interpretation. As to the definition proper, its phrasing leaves no doubt that a *prehistoric culture in the partitive sense is implied. The archaeological reality of such recurrent assemblages is not under discussion.*

As regards the second part, there would be no problems in accepting it as an assumption referring to the complete assemblage of artefacts etc of any contemporary group of people with a common social tradition. The objection is that it is questionable to what extent the archaeological reality corresponds to an original reality, in other words to what extent it could be a product of systematic depositional, post-depositional and interpretational bias. The definition might induce the illusion that the prehistoric culture could give an idea as to the real character of the culture of the 'people' once living, which will rarely be the case. As it is, we should state that though our prehistoric cultures *represent* the social traditions common to certain groups of people, they are *by no means representative* of them.

With respect to the 'common social tradition' the functional and technological traits represented in our assemblage are less informative than the stylistic traits. In some of our assemblages stylistic traits are more difficult to isolate than in others. They can even be under-represented, for instance in those Neolithic cultures in which the pottery appears to be of a purely utilitarian character. Theoretically, differing assemblages of purely functional traits could merely represent different poses of one and the same 'people' (Newell *et al*, forthcoming).

Binford (1965) stated that Childe's culture concept implied a 'normative' view of culture, the underlying assumption being that common patterns of behaviour produced spatial regularities in traits, including mortuary practices, which crystallized into 'cultures'. And Binford imputed that the 'degree of formal similarities observed among independent sociocultural units was assumed to be a direct measure of the degree of genetic or affiliational cultural relationship among the units being compared'. The implication of Binford's criticism not only concerns the comparison of cultures, but also the validity of the delineation of the cultures themselves. Many cultures show up regional variants. Their being grouped into one culture may depend on the seemingly dominant homogeneity of the traits preserved. Non-surviving traits might have offered

much more variance, to the extent that it could have been preferable to group certain peripheral variants with neighbouring variants now allotted to different cultures, or to make altogether different groupings. In such situations, not only post-depositional bias but also subjective preferences may be influential. Anyhow, the non-representativeness thus adds to the fact observed by Clarke (1968), of which Childe was also aware (McNairn 1980), that boundaries of subsystems of cultures do not necessarily correspond. All in all these observations counter the tendency towards partitioning of cultures based on subtle differences.<sup>1</sup>

Another consequence of the non-representative nature of the 'culture' is that the anthropological nature and the aggregational level of the (group of) 'people' concerned may be different from 'culture' to 'culture'. It cannot be determined simply on the basis of the patterning and spatial organization of regional groups within the cultures and of related cultures themselves (Hodder 1978; Shennan 1978; McNairn 1980).

A major deficiency of the second part of the definition, responsible for the confusions induced by the migration paradigm, is the fact that this second part does not include any restrictions as to time or space: the assumed equation: cultural assemblage=social tradition=(group of) people is not restricted to a specific moment, nor to a special area. It can therefore be used in the way prehistory always did, in speaking for instance of the 'Funnel Beaker Culture', thus extending the equation assemblage=tradition=people (now encompassing many generations) over a period of almost a millennium. It is the presence in the definition of the word 'tradition', itself a diachronic concept, which suggests its use in this way. The justification is that each successive phase of such a culture, as far as can be learnt from the surviving assemblage, can be recognized as directly deriving from the preceding phase, with which it presents predominant similarities in shape. But if we accept the equation in this diachronic sense, without restrictions as to space, it implies that a geographic expansion of that culture in the course of time should be the consequence of migration. It does not allow for radical change of culture otherwise than as a consequence of migration and conquest. This is in fact the way Childe used it, for example in his *Prehistoric Migrations*, according to Kossinna's axiom, and it is this aspect of it that we have to revise. We therefore should add a restriction as to space or time: the equation is only valid for a given period, or, when used in a diachronic sense, within a defined, constant area. The Foulbe in West Africa, now spreading from Senegal to North Cameroons, are quite conscious of their common social tradition, which finds expression in their actual material culture, institutions and language. But we know that groups of different origin with different cultural backgrounds have been assimilated in the course of time, and that during that period the Foulbe territory expanded considerably.

Recurrent assemblages are archaeological realities. Somehow they reflect a once living reality, but, as we have seen, the reflection is partial and often distorted. Our situation resembles that of the inquisitive person who wants to know about the character of different meetings behind closed doors: on one occasion he catches a glimpse of their shoes by looking through a crack underneath the door (shoes well polished or worn-out, fashionable shoes or sandals with coarse woollen socks or even bare feet, shoes of men, women and children; imagine how the combination of these attributes may vary with different kinds of congregations). Next time with another group he peeps at nothing but waists through a keyhole, and yet another time, through a gap over the door, he can admire all sorts of heads and hats. Or the door is closed too firmly and he has to content himself with observing the cars and/or bicycles parked in front of the building. And yet, his hope of drawing generalizing, comparative conclusions about these different groups of people on the basis of these glimpses is not illusory, provided he has some kind of blue-print of our society in his mind.

### 3. CONTINUITY – DISCONTINUITY

Our assumption that Childe's equation is either valid in a diachronic sense within a given area, or, without geographic restrictions, instantaneously, is closely related to our view of continuity of culture versus discontinuity of culture. We do accept Childe's equation within a given area when continuity of culture through time can be demonstrated. Oscar Montelius's thesis of 1888 still holds. But we do not accept that discontinuity of culture in a certain area should imply of necessity migration of people. In archaeology, continuity and discontinuity are by no means a pair of concepts of equal significance. As I had occasion to outline at an earlier occasion (Van der Waals 1976), continuity and discontinuity in the archaeological sense are concepts of unequal demonstrability. Continuity of culture is based on positive archaeological evidence. Conclusions as to cultural continuity are based on generic similarities of the cultural assemblages of successive phases. Their conviction is proportional to the uniqueness and complexity of the similarities concerned. When these similarities appear to be of a negative character, that is to say if they consist of 'absence of –' and other pseudo similarities, their significance and conclusive force must be rated low.

Discontinuity of culture derived from positive archaeological evidence is easily imaginable but hard to find. For future archaeologists, mid-twentieth century East Prussia and the towns Posen-Poznan and Breslau-Wroclaw will provide examples. Usually, discontinuity of culture is inferred from the absence of positive evidence as to continuity. Many such discontinuities have vanished over the last thirty years. This is not just the consequence of increasing scepticism in relation to the succession of discontinuities proposed by former generations of archaeologists. Many gaps in the scatter of finds through time which prevented us from recognizing continuity have been filled as a consequence of the exponential growth of archaeological activity over the last decades. Often, discontinuities appear to be confined to certain sectors of culture which can be over-represented in our archaeological record. Only a quarter of a century ago, when nothing but burials were known, the break in burial ritual and in pottery inferred from the urns found in the graves was taken to represent a cultural and ethnic discontinuity at the beginning of the Late Bronze Age in Northwest Europe. Now that settlement sites have been excavated and the development of the burial ritual is better understood, continuity of occupation and culture is taken for granted. Those who prefer to account for the discontinuity in burial practices between the TRB and Single Grave Cultures in continental Europe as a cultural as well as ethnic discontinuity should keep this example in mind.

The above clearly indicates that discontinuity of culture, when not the consequence of ethnic discontinuity, is but a relative concept. A profound transformation of culture within a given society, enacted within a short period of time will, if ever it did occur, appear in the archaeological record as a discontinuity. But what if this record is complete and the process of transformation can be followed, step by step, even archaeologically? It is a matter of definition, which in fact by that time will have lost much of its importance. What really matters is the demonstration of the process of sudden transformation as opposed not only to gradual change but also to migration. Many discontinuities in our prehistoric record not doubt belong to this category. Yet I think we should continue to consider them in terms of discontinuities.

Contemporary archaeologists tend to disregard discontinuities. Basic to studies like those of Sherratt 'Plough and pastoralism in prehistoric Europe' (1981) and of Hodder 'Sequences of structural change in the Dutch Neolithic' (1982) is the underlying assumption of continuity. Such studies open perspectives which had been completely blocked by the compartmentalized view of prehistory of those who were obsessed by the culture-discontinuity-migration paradigm. The

reaction to the compartmentalized view is justifiable, the assumption of basic continuity wholesome. But one should not negate aspects of the concept of discontinuity that still might be functional. If we accept our prehistoric cultures as archaeological realities, representing, however, imperfectly, systems of adaptation in the broad, anthropological sense, discontinuities once more become important. For further consideration of this aspect, we had better turn to actual situations in prehistory.

#### 4. LATE NEOLITHIC TRANSFORMATIONS I: THE BATTLE AXE CULTURES

Let us turn to the complex of discontinuities-transformations represented by the Battle Axe Cultures. Ever since the cultural complex was recognized, prehistorians have been assuming that something special must have been responsible for their appearance. The Battle Axe Cultures represent an assemblage of culture groups between the North Sea, the Russian plains, South Scandinavia and the Alps. As C14-dating has by now made clear, their first occurrence in the areas concerned is not really simultaneous – a fact which, had it been known earlier, might have kept creative fantasy within bounds. As it was, two circumstances governed speculation on these cultures: in the first place the striking similarities in grave structures and grave goods from group to group, especially during the early, so-called ‘pan-European’ phase, and in the second place, the fact that almost everywhere the occurrence of these groups represented clear cut discontinuities. In fact, these groups appeared to embody pre-eminently the migration-paradigm, the spread of culture by migration (Glob 1944; Struve 1955; Van der Waals & Glasbergen 1955; Glasbergen & Van der Waals 1961). Several arguments contributed. In the first place, there was the generally accepted idea that the assemblages bore witness to nomadic herdsman. This idea, refuted by now, seemed corroborated by the fact that almost all information came from graves, settlement finds being extremely rare. Nomads, often on the move, live in tents, and the nomadic way of life was supposed to elude the archaeological record. Battle axes and the wishful identification of horse interments under barrows suggested mounted warriors (a molar preserved in one of these graves later revealed one of the horses to have been a cow). No wonder that the philological concept of a single, archetypal Indo-European language mesmerized prehistorians. The parallel concept of an original Indo-European Culture seemed all too logical, and the best candidate would clearly be the common ancestor of the Battle Axe Cultures, something close to the ‘pan-European’ phase. This idea has been fascinating archaeologists for almost a century, keeping in its spell such diverse scholars as Gustav Kossinna, Gordon Childe and Marija Gimbutas. Some prehistorians continue to defend this position (cf the *Journal of Indo-European Studies*).

Today, most prehistorians are no longer inclined to conceive of the introduction of the Battle Axe Cultures in terms of migration, let alone Indo-European warriors mounted on horseback. Most authors are inclined to consider the possibility of autochthonal evolution (for example Fischer 1961; Neustupný 1965; Matthias 1969; Behrens 1973). Positive evidence as to local descent can be adduced from Switzerland (Schwab 1971) and the coastal area of the Netherlands.<sup>2</sup> Viewed in this light, the situation can be reformulated, again in two points, as follows: In the first place, the appearance of the battle axe groups in their various areas marks discontinuity of culture in the sense outlined in the previous section: discontinuity inferred from the persisting absence of positive evidence as to continuity, ie discontinuity in the sense of a sudden and profound transformation of culture. In the second place, we note a striking process of cultural unification or convergence (at least in the realm of burial), reducing to comparable

denominators culture areas which so far had presented a much more mosaic-like pattern of cultural variation.

In trying to account for these phenomena we are led to state that both points could be due to a very successful new adaptation, be it in the sense of essential innovations in the subsistence technology, rearrangements in the social organization required to cope with such innovations, or shifts in the ideology to fit both of these. If we want to visualize what sort of innovations could be thought of, reference should be made to the paper 'Plough and pastoralism: aspects of the secondary products revolution' by Sherratt (1981) in which such innovations as ox-traction, the introduction of the wheel and cart, the introduction of the plough, the utilization of milk and wool and their far-reaching effects are discussed. In addition to the many elements cited by Sherratt, one could point to the role the introduction of horse-riding played in the development of the pastoral economy, as indicated by Beardsley (1953). In trying to account for the unification of culture especially, we are reminded of the arguments proposed by Sahlins & Service (1973) in *Evolution and culture*. Referring to discussions between White and Steward, they outline how the evolution of culture could be seen to proceed: either specifically, that is basically adaptive, readjusting to specific environments, and thereby ramifying along many lines, or, every now and then, generally, that is essentially innovative. Such innovations of general significance tend to occur alternately in one of the many lines of specific, adaptive cultural evolution. In their words: 'that cultural system which more effectively exploits the energy resources of a given environment will tend to spread at the expense of less effective systems'. I would say, the more basic, that is, generally applicable, the innovations, the more widespread their effects. These are the moments in which unificatory trends, encompassing hitherto culturally little or unrelated areas, can be expected to occur.

Recently, suggestions have been made (Renfrew 1981; Chapman 1981) which possibly could be brought into line with the evolutionary point of view just presented. In many areas where we find Battle Axe Culture groups, for instance in the Single Grave Culture area, collective burial in conspicuous megalithic tombs had been the practice. These tombs answer the conditions set by Chapman (1981) for his 'formal disposal areas', which should be seen as functions of tensions building-up in the relationship of a group and its critical resources. 'Perhaps claims to the use and control of critical resources are established by the visualized presence of the ancestors' in formal disposal areas, like megaliths or regular cemeteries. Now, if we confine ourselves to the replacement of the TRB culture by the Single Grave Culture, the striking phenomenon in this respect is the disappearance of formal disposal areas. Single Grave barrows are relatively inconspicuous monuments, covering a single burial, and are not usually found in concentrations, but are scattered. In the Netherlands, we know by now that simple earth graves, not covered by barrows, and scattered all over the coversand areas, must have outnumbered by far the barrows. When we consider a barrow, this is much more likely the expression of a different concern, which has more to do with the person interred than with the community at large. Binford (1971) suggested 'linking energy-expenditure in mortuary practices to the rank of the deceased'. That may well be the preferable concept to account for Single Grave barrows. We could check that possibility by qualitatively and quantitatively assessing the grave goods of Single Grave simple earth graves as opposed to graves under barrows. The apparent disappearance of funeral disposal areas could possibly be seen in connection with essential innovations in the sense alluded to above, tending to dissolve, if only temporarily, the tensions which had been building-up between the society and its critical resources. It is only in the course of the Early and Middle Bronze Age, with the appearance of the so-called 'family-barrows' (Waterbolk 1962), in which many persons were being interred secondarily, that such tensions might be visualized to have built-up again.

## 5. LATE NEOLITHIC TRANSFORMATIONS II: ASPECTS OF THE BELL BEAKER PROBLEM

Those who like to link the Battle Axe cultures with Indo-European languages could be embarrassed by the fact that hardly any representatives of this complex ever cross the River Rhine.<sup>3</sup> Who then did carry Indo-European languages into West and Southwest Europe? There is no denying that this question can be reformulated to fit the account of the Battle Axe Culture complex presented in the preceding paragraph. If the unification of culture over large areas of Central North and Northwest Europe were due to a successful and widely applicable set of innovations, why then should this process have stopped at the borders of the Rhine and the North Sea? The hypothetical answer might be it is here that AOO and Bell Beakers come in.

It has been demonstrated that in the northwestern peripheral parts of the Battle Axe Culture's area, that is in the western part of the Single Grave Culture area, AOO and the earliest real Bell Beakers make their appearance in the course of what appears to have been an even and unbroken development (Lanting & Van der Waals 1976a). It was the gradual, adaptive and ramifying type of culture change, which accounts for the fact that with the appearance of AOO West of the river Weser, the Single Grave Culture line of development split into two: a north-eastern branch, eventually leading up to the phenomena of the 'uppermost grave period' and the Late Neolithic of South Scandinavia, and a western branch eventually giving rise to the Bell Beaker Culture of the Lower Rhine.

In the western part, nothing remarkable marks the birth of AOO, and slightly later, maritime Bell Beakers. This is particularly true for all aspects of the burial ritual (Lanting & Van der Waals 1976a), but, as far as at least the introduction of AOO is concerned, the same is suggested by the evidence of the recently excavated settlement sites Aartswoud (Van Itterson Scholten & De Vries-Metz 1981) and Kolhorn<sup>4</sup> in the coastal area. Yet, it is AOO Beakers which all of a sudden are found all the way from Scotland, over the British Isles, along the French Atlantic coast, into the Iberian Peninsula and the Rhone valley. Maritime Bell Beakers follow in their wake at a slightly later date. And about contemporary with the spread of Maritime Beakers in the West is the introduction of the first Bell Beakers in the Eastern Bell Beaker province (centring in Bohemia, Moravia and the area around Budapest), where AOC and true Maritime Beakers are absent (the earliest beakers of this area can be linked typologically with late AOO Beakers in the Main-Rhine area; Lanting & Van der Waals 1976b, and forthcoming).

The sudden spread of AOO might again be taken to represent a successful innovation, but it is unlikely that this should have been something new developed in the AOO period. Rather it had to do with the same innovation which gave birth to the Battle Axe Cultures, and which for whatever reason was adopted at a slightly later date in Western Europe. We should realize that the time lag between the first occurrence of some of the Battle Axe Cultures in various areas is of the same order of magnitude. And we should also realize that our basic inclination to think of the problems presented by the Bell Beaker Complex in terms different from our thinking on Battle Axe Culture problems is in part determined by the tradition of archaeological research, which used to consider Bell Beakers as of entirely different (Iberian) descent.

It is doubtful whether we can speak of AOO and Bell Beaker Cultures in the West of Europe in the way we can speak of Battle Axe Cultures and of the Single Grave – AOO – Bell Beaker Culture in the Lower Rhine area, which certainly represents a prehistoric culture in the sense outlined in the first section. In Britain we could be dealing with rapid adoption in autochthonous cultural contexts of a 'pleasing' type of pottery (Gibson 1982). Whittle (1981) rejects the idea of Beaker Cultures on the British Isles in the continental sense. For other

important areas of AOO and later Bell Beaker presence, as for instance Brittany, the question cannot be answered in view of the scarcity of data, in particular of settlement sites.

The situation in the eastern province is certainly different, as has been convincingly demonstrated by Shennan (1976; 1977). Bell Beakers are sporadic elements in rich graves and in find-complexes of settlement material. In the graves they could be shown to represent prestige objects, symbolizing status and wealth. But most of the pottery found in the so-called Bell Beaker graves and in the settlement complexes, the so-called *Begleitkeramik*, has nothing to do with Bell Beakers proper. It is of eastern origin, as are other well-known elements which first were incorporated into the Bell Beaker complex in the eastern province: tanged copper daggers, wrist guards, V-bored buttons, etc. It is only following the formation of this eastern Bell Beaker Culture that these new elements quickly found their way in the whole area where shortly before AOO Beakers had made their appearance, and beyond. The story has recently been summarized by Harrison (1980).

All in all it is doubtful whether the spread of this 'eastern' Bell Beaker complex, or even the spread of AOO and Maritime Bell Beakers over Western Europe, can be put on one line with the transformations giving rise to the Battle Axe Culture complex. But whether we prefer to account for the spread of beakers and beaker complexes by thinking in terms of 'networks' (Clarke 1976) or the introduction of a 'cult package' (Burgess & Shennan 1976), or of the selection of suitable items for the symbolization of social status, reflecting a degree of social stratification in the West (Harrison 1980), three points should be kept in mind.

The first is that real as the differences with the rise of the Battle Axe Cultures may be, beakers in the West, whatever their character, are in a comparable way uniting culture provinces which up to that moment had little in common.

The second point is, that even if AOO and later beakers were selected as prestige objects, symbolizing status and indicating social stratification, this hardly can have been because they were judged to be 'pretty' as some authors have suggested. It would be amazing that taste as to what should be 'pretty' should be so uniform over the whole of Western Europe. If these beakers were selected as prestige objects to underline status, it must have been because they were taken as symbols representing something more essential. Many of you will remember having seen 19th-century photographs of non-westerners, stately wearing a silk topper or a black morning coat for their portrait. I think most readers would not agree with me if I suggested these gloomy garments had been chosen because they were 'pretty'. They served as prestige objects, transferring something of the prestigious, technologically superior western society on to the bearer.

This brings us to the third point. It was the pre-metallurgy AOO Beakers which first spread over Western Europe, and which are the nearest representatives of the Battle Axe Culture complex. We should consider the possibility that it was an effective innovative readaptation, which had already resulted in the formation of the Battle Axe Cultures, which gave these beakers their prestige value.<sup>5</sup>

The reactions of different cultures to comparable external stimuli like major innovations need by no means be similar. It depends on the character of the culture, of its structure, to what extent foreign elements can be adopted or absorbed without loss of identity. The same stimuli which at an earlier date in Central Europe led to unification, in the sense of transformation, and the rise of new cultural systems, could under different conditions in the west at a slightly later date have caused an equally unifying assimilation of new adaptive strategies and specific cultural traits, symbolizing the prestige of the culture of origin. And that without a complete loss of identity on the part of the receivers.

Whatever may be the case, I find difficulties in accepting models which propose changes in



social structure or processes in the realms of ideology which have no basis in changes in the economic subsystem of culture, related to subsistence. I would prefer to follow Leslie White's fundamentally materialistic view that the social and ideological subsystems of culture are functional to the economic subsystem, and not the primary movers of the system as a whole.

## 6. HISTORIC EVENTS

As we have seen, discontinuities are not so much of importance in marking the beginnings and ends of prehistoric cultures in the traditional sense, but in indicating moments of crisis in the 'evolution of culture'. The factors responsible can be part of the systems in which they operate: tensions for instance caused by the nearness of other cultural groups with an essentially higher potential of energy conversion. But the factors responsible do not of necessity belong to the system. They may have to do with incursions into the system, with impacts inflicted on our more or less closed prehistoric cultural system from without. In such cases it is appropriate to speak of historic events.

Recently, a document had to be drafted for a subsidizing agency in which views on the aims of archaeological projects had to be outlined. It was stated that the aims were to account for our prehistoric past in terms of socio-economic processes. Somebody suggested that one might speak of socio-economic processes and historic events, but his suggestion was refuted by a younger colleague: such an addition was superfluous in that all historic events can be accounted for in terms of socio-economic processes. Now, as an ultimate objective, a world-encompassing understanding in socio-economic terms of all that happened may be well and good, but for a particular period or region the adoption of this position is utterly impracticable. The coming of Caesar to the British Isles, or of Columbus to America can be accounted for in terms of socio-economic processes of 1st-century BC Rome and 15-century AD Europe. But for our understanding of what happened in the British Isles and in the Americas such insight is of little help: for these regions their arrival represented historic events of far reaching impact, in some parts of America even causing a real discontinuity of culture.

Two observations should be made in this context. In the first place, when there is discontinuity of culture the making of a clear-cut distinction between discontinuities solely caused by factors within the system and those caused by a combination of inherent factors and historic events will not readily be possible. Discontinuities solely caused by historic events are likely to be rare. Instead, historic events may often have had a triggering or catalysing function and also a steering function, and the situation may have been easy or difficult to trigger off.

A second point to be made is that, also in prehistory, historic events will often have played their triggering, catalysing and steering functions without producing anything like discontinuity of culture. The long lasting disequilibrium of the Egyptian economy in 1324 caused by the sudden introduction of huge quantities of gold by King Mansa Mussa, travelling from his Mali empire to Mecca, may easily have found expression in the archaeological record. It was as much due to a historic event as to the socio-economic structure of 14th-century Egypt – but its effect fell far short of a discontinuity of culture.

Quite apart from the effects on the Egyptian economy, this historic event has an interest in its own right, not only because of the spell of Ibn Batuta's story, but also because of the light that the story of this king sheds on circumstantial aspects of West-African history. In prehistory, historic events are never of interest in their own right, in that none of the actors are known, and hardly anything about their backgrounds, interests and motivations. Yet, the event is worth our

attention as an example of a category, and because the impact of the event on the system can be informative about the system itself and could account in part for the transformation it underwent.

## 7. EPILOGUE – ON THE ‘HOW’ AND THE ‘WHY’

Printed discussions are invaluable sources, in that they reveal spontaneous reactions which the authors, on reflection, would have suppressed in their publications. Spontaneous reactions tell us about attitudes, and attitudes more or less determine and direct progress in archaeology. To conclude with, I would like to reconsider an enlightening episode of the lively and highly stimulating discussions during the Bell Beaker Symposium held at Oberried in 1974, in which for those participating David Clarke still stands as the prime agent. The reader interested in the context of the discussion is referred to the symposium volume (Lanting & Van der Waals 1976c).

In his paper ‘Anthropology of Bell Beaker people’, presented to the symposium, Professor Kurt Gerhardt summarized and substantiated his views on Bell Beaker physical anthropology (1976). Gerhardt is a representative of the traditional typological approach in physical anthropology, with a keen knowledge of human genetics. He acquired fame by his definition of one specific cranial type, occurring in Bell Beaker contexts: the planoccipital steephead. At Oberried he pointed out that this planoccipital steephead was the most characteristic and numerically important type identified by him among the essentially heterogeneous complex of cranial types in Bell Beaker graves. The type had never been found with any of the earlier Neolithic Central European groups. He based his arguments on his own research, chiefly comprising finds from Central Europe (from the Elsass to Southwest Poland), but on the basis of inspection of material published and illustrated in *Crania Britannica* from 1865 he was convinced that planoccipital steepheads were also represented on the British Isles. What made Gerhardt’s contribution remarkable was his emphatic demonstration of a systematic sexual dimorphism. Among male ‘Bell Beaker’ skeletons in Central Europe, he had found more than twice the number of planoccipital steepheads than among female ‘Bell Beaker’ skeletons of the same area. He furthermore noted that many of the male planoccipital steepheads had been found in the richer Bell Beaker graves, and concluded that ‘this remarkable situation asked for a sociological explanation’. During the final discussion of the symposium he explained that he could only think of this situation as resulting from strong endogamy within clans, as with Medieval European high nobility. The resolution of such a social system at the end of the Bell Beaker period could account for the disappearance of the planoccipital steephead in the succeeding Unetice period.

On the same occasion, Steve Shennan for the first time published results of his investigations into the role and place of Bell Beakers and their context in Central Europe. It was there that he pointed out the unsatisfactory notion of the Bell Beaker ‘culture’ as a discrete entity with a sort of objective existence of its own. He replaced it by the definition of the Bell Beaker complex as a ‘set of artefacts, found in a variety of cultural contexts’. In Bohemia and Moravia that local cultural context was formed by the so-called *Begleitkeramik*, which according to him could be imagined to be the product of a normal transformation, a development, out of the late Bohemian Corded Ware, convergent with the developments in the Carpathian basin. Bell Beakers, and the objects which for the first time became closely connected with Bell Beakers in the eastern province (wrist guards, copper tanged daggers), were demonstrated by Shennan to have been selected prestige goods to symbolize status and wealth. Shennan’s paper was one of the most stimulating presented at the symposium, and it certainly largely contributed to a transformation of thinking on the Bell Beaker problem. But Shennan, influenced by Binford and Clarke, was not interested in the actual historic events which might have had a ‘triggering

function' in the formation of the *Begleitkeramik* Culture and the adoption of a 'Bell Beaker package', which in his view suggested an 'interaction sphere', in which in a great part of Europe diverse culture areas, among which the *Begleitkeramik* area, partake. This, and the struggle to move away from the 'naive' and oversimplified culture-discontinuity-migration paradigm, with its strong interest in human types as indicators of origins, prevented him from taking up the suggestions put forward by Gerhardt. Yet, to many of the participants the elements of convergence in the presentations of Gerhardt and Shennan were quite intriguing. David Clarke then intervened and pointed out that the convergence of ideas was only apparent. 'There is in fact a very basic division between us here', Clarke said. 'The question of origins . . . is part of the questions asked by the old school, about how, when and where. The questions of greater interest and deeper explanatory meaning answer the questions why'. Clarke went on to make clear why he had a deep mistrust of all physical anthropological evidence. If I remember correctly he said it was because the skeletal material available was too much the result of heavily biasing regional circumstances, and therefore liable to generate illusory conclusions. On re-reading the discussion as far as published, I cannot escape the suggestion that the categorical refusal to take up Gerhardt's arguments was also conditioned by a certain handicap in picking up elements of the German parts of the multilingual discussions at Oberried (his was the famous dictum 'I am not sure that I understand, but I disagree'). And also, the knowledge that the typological approach in physical anthropology, of which Gerhardt is an important representative, was being increasingly exposed to criticism by a younger generation of physical anthropologists, may have played a role. Last not least, for the benefit of clarity and a poignant discussion, Shennan and Clarke tried to bring home their point, which did not favour a compromise as might have resulted during a less committed discussion.

Has the suggestion put forward by Gerhardt only to do with the how, when and where, as Clarke surmized? It certainly has to do with the how. But apart from that, I think Gerhardt's suggestion of sexual dimorphism among the Bell Beaker population has as much to do with the why of the Bell Beaker complex as with questions of origin.

Nobody present at Oberried appears to have been informed of the fact that Alfred Czarnetzki was about to complete a study based on 172 skeletons found in Late Neolithic, Bell Beaker and Unetice graves in Bohemia. Czarnetzki is a representative of the more recent school in physical anthropology, which on the basis of biological systematics rejects the typological method in physical anthropology. Czarnetzki's method is the study of 'non-metric' or 'epi-genetic' traits. Sex is being determined on the basis of population genetics instead of on formal attributes. On this basis he was able to differentiate as to sex 22 individuals among the 'Late Neolithic', 51 among the Bell Beaker, and 54 among the Unetice period skeletons. Of 57 individuals the sex could not be determined, partly because they were children, partly because of poor preservation.

In comparing the complete groups of the three periods Czarnetzki demonstrates that the greatest divergence is between the Late Neolithic (=Corded Ware) and Bell Beaker groups, the smallest between Bell Beaker and Unetice groups, the divergence between Late Neolithic and Unetice being intermediate. The same pattern of divergences emerged when male individuals only were taken into consideration, but among females the divergence between Late Neolithic and the Bell Beaker period was smaller than between the late Neolithic and Unetice. In this case, there appeared to be a normal type of increase in divergence through time. In other words, the gene pool in females remained unchanged into Bell Beaker times, only then certain changes appeared to take place. During the Bell Beaker period, the introduction of a new gene flow must be inferred from the shift in the values active in the formation of epigenetic traits, a shift caused mainly by male individuals.

Czarnetzki published his findings in a concise form in a Bohemian periodical. In a more elaborate version, it was offered for publication in the definitive version of the Proceedings of the Bell Beaker Colloquium held at the occasion of the international congress at Nice in 1976. Alas, it is only now that these proceedings are going to be published. Yet, it is striking that practically nobody interested in the late Neolithic, Copper Age and Early Bronze Age archaeology of Central Europe took notice of Czarnetzki's findings, which appear to be very much in line with Gerhardt's suggestions at Oberried in 1974.

The results of the studies of Gerhardt, Czarnetzki and Shennan present us with an early documented historic event in European prehistory. They show us at least a glimpse of the 'how' of the formation of the eastern Bell Beaker complex, and they give us a notion of its character. To my mind they imply that the 'how' is as much a function of the 'why' as the 'why' is of the 'how'. The two are inseparable.

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## NOTES

- 1 For this reason I agree with A E Lanting (1983) that we should no longer conceive of a Protruding Foot Beaker Culture in the Netherlands and Northwest Germany (a name introduced by Van der Waals & Glasbergen in 1955), as distinct from the Single Grave Culture in North Germany and South Scandinavia.
- 2 At Kolhorn, there is a strong suggestion of long-term specialized adaptation to living in a tidal flat environment. AOC sherds make up a small part of the inventory. In general aspect they do not differ from the majority of the ceramics, which is the normal type of Single Grave Culture beaker ware with sherds of larger vessels, not normally represented in the graves.
- 3 There is a remarkable concentration of late Single Grave Culture and AOC burials to the West of the Rhine in the central part of the province of Limburg, the Netherlands (Baexem, Helden, Swalmen; Hulst *et al* 1973; Lanting & Van der Waals 1976a).
- 4 See note 2.
- 5 Whittle (1981) explicitly rejects the idea that the introduction of AOC beakers to the British Isles should be connected with an innovation.

## REFERENCES

- Beardsley, R K 1953 'Hypotheses on inner Asian pastoral nomadism and culture area', in *Asia and North America: Transpacific contacts*, Salt Lake City, 24–8. (= *Mem Soc American Archaeol*, 9.)
- Behrens, H 1973 *Die Jungsteinzeit im Mittelbe-Saale-Gebiet*. Berlin. (= *Veröffentlichungen des Landesmuseum für Vorgeschichte in Halle*, 11.)
- Binford, L R 1965 'Archaeological systematics and the study of culture process', *American Antiquity*, 31 (1965), 203–10.
- Binford, L R 1971 'Mortuary practices: their study and potential; in Brown, J A (ed), *Approaches to the social dimensions of mortuary practices*, Salt Lake City, 6–29. (= *Mem Soc American Archaeology*, 25.)

- Burgess, C & Shennan, S J 1976 'The Beaker phenomenon: some suggestions', in Burgess, C & Miket, R (eds), *Settlement and economy in the third and second millennia BC*, Oxford, 309–31. (= *Brit Archaeol Rep*, 33.)
- Chapman, R 1981 'The emergence of formal disposal areas and the "problem" of megalithic tombs in prehistoric Europe', in Chapman, R, Kinnes, I & Randsborg, K (eds), *The archaeology of death*, Cambridge, 71–81.
- Childe, V G 1929 *The Danube in Prehistory*. Oxford.
- Childe, V G 1950 *Prehistoric migrations*. Oslo.
- Clarke, D L 1968 *Analytical archaeology*. London. (2nd rev ed, London, 1978.)
- Clarke, D L 1976 'The Beaker network – social and economic models; in Lanting & Van der Waals 1976c, 459–76.
- Czarnetzki, A 1984 'The genetic influence of Bell Beaker people in Bohemia', in Guilaine, J (ed), *L'Age du Cuivre Européen*, Paris, 121–8.
- Fischer, U 1961 'Zum Problem der spätneolithischen Gruppenbildung an Saale und mittlerer Elbe', in Böhm, J & Laet, S J de (eds), *l'Europe à la fin de l'âge de la pierre*, Prague, 415–29.
- Gerhardt, K 1976 'Anthropotypologie der Glockenbecherleute in ihren Ausschwärmelandschaften', in Lanting & Van der Waals 1976c, 147–64.
- Gibson, A M 1982 *Beaker domestic sites: a study of the domestic pottery of the late third and early second millennia BC in the British Isles*. Oxford. (= *Brit Archaeol Rep*, 107.)
- Glasbergen, W & Waals, J D van der 1961 'Paneuropäisches und lokalentwickeltes im holländischen Neolithikum', in Böhm, J & Laet, S J de (eds), *l'Europe à la fin de l'âge de la pierre. Symposium Prague – Liblice – Brno 1959*, Prague, 549–56.
- Glob, P V 1944 *Studier over den Jyske enkeltgravskultur*. Kobenhavn.
- Harrison, R 1980 *The Beaker Folk*. London.
- Hodder, I 1978 'The spatial structure of material "cultures": a review of some of the evidence', in Hodder, I (ed), *The spatial organization of culture*, London, 93–111.
- Hodder, I 1982 'Sequences of structural change in the Dutch Neolithic', in Hodder, I (ed), *Symbolic and structural archaeology*, Cambridge, 162–77.
- Hulst, R S, Lanting, J N & Waals, J D van der 1973 'Grabfunde mit frühen Glockenbechern aus Gelderland und Limburg', *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek*, 23 (1973), 77–101.
- Itterson Scholten, F R van & Metz, W H 1981 'A Late Neolithic settlement at Aartswoud I', *Helinium*, 21 (1981), 105–34.
- Lanting, A E 1982 'Twee stenen hamerbijlen van de vroege Enkelgraf-kultuur uit Borger', *Nieuwe Drentse Volksalmanak*, 99 (1982), 125–31.
- Lanting, J N & Waals, J D van der 1976a 'Beaker culture relations in the Lower Rhine Basin', in Lanting & Van der Waals 1976c, 1–80.
- Lanting, J N & Waals, J D van der 1976b 'Bell Beakers in continental Northwestern Europe', in *IX Congrès de l'U.I.S.P.P., Colloque XXIV: La civilisation de vases campaniformes (prétirage)*. Nice, 8–32. (in print in definitive edition).
- Lanting, J N & Waals J D van der (eds) 1976c *Glockenbecker Symposion Oberried 1974*. Bussum/Haarlem.
- McNairn, B 1980 *The method and theory of V Gordon Childe*. Edinburgh.
- Matthias, W 1969 'Die Schnurkeramik im westlichen Mitteldeutschland', in Behrens, H & Schlette, F (eds), *Die neolithischen Becherkulturen im Gebiet der DDR und ihre europäischen Beziehungen. Vorträge der Tagung 1967*, Berlin, 9–28. (= *Veröffentlichungen des Landesmuseum für Vorgeschichte in Halle*, 24.)
- Montelius, O 1888 'Über die Einwanderung unserer Vorfahren in den Norden', *Archiv für Anthropologie, Zeitschrift für Naturgeschichte und Urgeschichte des Menschen*, 47 (1888), 151–60.
- Neustupný, E 1965 'The grave of Tusimice and some problems of the Corded Ware cultures', *Pamatky Archeologické*, 56 (1965), 392–456.
- Newell, R R, Kielman, D, Gijn, A L van, Constandse-Westermann, T S & Sanden, W A B van der in prep 'An inquiry into the ethnic resolution of Mesolithic regional groups: the study of their decorative ornaments in time and space'.
- Renfrew, C 1981 'Introduction: the megalith builders of Western Europe', in Evans, J D, Cunliffe, B & Renfrew, C (eds), *Antiquity and man; essays in honour of Glyn Daniel*, London, 72–81.

- Sahlins, M & Service, E R (eds) 1973 *Evolution and culture*. Ann Arbor.
- Schwab, H 1971 'Neues zum späten Neolithikum der Westschweiz', *Archäologisches Korrespondenzblatt*, 1 (1971), 91-3.
- Shennan, S J 1976 'Bell Beakers and their context in Central Europe', in Lanting & Van der Waals 1976c, 231-9.
- Shennan, S J 1977 *Bell Beakers and their context in Central Europe: a new approach*. PhD Thesis, Univ of Cambridge.
- Shennan, S J 1978 'Archaeological "cultures": an empirical investigation', in Hodder, I (ed), *The spatial organization of culture*, London, 113-39.
- Sherratt, A G 1981 'Plough and pastoralism: aspects of the secondary products revolution', in Hodder, I, Isaac, G & Hammond, N (eds), *Pattern of the past: studies in honour of David Clarke*, Cambridge 261-305.
- Struve, K W 1955 *Die Einzelgrabkultur in Schleswig-Holstein und ihre kontinentalen Beziehungen*. Neumünster.
- Waals, J D van der 1976 'Continuity and discontinuity in prehistory; some comments on definitions, demonstrability and interpretations', in Laet, S J de (ed), *Acculturation and continuity in Atlantic Europe, mainly during the Neolithic period and the Bronze Age. Papers presented at the IVth Atlantic Colloquium, Ghent 1975*, Brugge, 257-60. (= *Dissertationes Archaeologicae Gandenses*, 16.)
- Waals, J D van der & Glasbergen, W 1955 'Beaker types and their distribution in the Netherlands. Intrusive types, mutual influences and local evolutions', *Palaeohistoria*, 4 (1955), 5-46.
- Waterbolk, H T 1962 'Hauptzüge der eisenzeitlichen Besiedlung der nördlichen Niederlande', *Offa*, 19 (1962), 9-46.
- Whittle, A W R 1981 'Later Neolithic society in Britain: a realignment', in Ruggles, C L N & Whittle, A W R (eds), *Astronomy and society in Britain during the period 4000-1500 BC*, Oxford, 297-342. (= *Brit Archaeol Rep*, 88.)