

CHAPTER 1

The Neolithic Revolution

The Neolithic took place in the grey night of remote prehistory
Gordon Childe *What happened in history* 1942

Changing trains

In 1934 the archaeologist Gordon Childe made a short trip to the Soviet Union. For twelve days he visited colleagues in museums and archaeological institutes in Leningrad and Moscow. He saw the country from the train and he returned laden with books and information about the origins of the Indo-Europeans. He also learned first-hand about theoretical upheaval. The Soviet archaeology he encountered was a fully fledged state instrument charged with the investigation of pre-capitalist societies and the history of material culture. Indeed, the word archaeology was prohibited and the names of the major institutes had been changed accordingly (Trigger 1980:93). By coincidence the leading archaeologist prior to the Russian revolution of 1917, N. Y. Marr, died in the year of Childe's visit. Marr's brand of Marxism as applied to prehistory stressed that social development was a staged process that took place independently, and therefore in parallel, in different geographical areas. There was little room for diffusion and migration as explanations for change until Marr was denounced by Stalin in 1950 (McNairn 1980:154, 165).

The movement of peoples was Childe's preferred mechanism for the archaeological variety he had already seen first-hand in museums across Europe. In this device at least he shared common ground with another of his contemporaries that he outlived, the ultra-German nationalist Gustav Kossinna who had died in 1931. Kossinna's views of Aryan racial superiority led him to propose a homeland for their origin among northern

Nordic peoples. From there, he argued, sprang all that was progressive and valuable about a European past (Barkan 1992; Härke 1992; Malafouris 2004; Veit 1989). Kossinna's agenda was to find archaeological evidence that would demonstrate this. Childe was opposed to Kossinna's programme on political, moral and scientific grounds. While he shared the view that as peoples moved so prehistoric cultures ebbed and flowed, he neither subscribed to racial superiority as a motive force nor to a northern homeland as a significant origin point, arguing rather for the importance of the east. Europe, he claimed, fell under the light from the east, *ex oriente lux*. He was to later write of his early syntheses that 'the sole unifying theme was the irradiation of European barbarism by Oriental civilisation (Childe 1958b:70)', and he directed his considerable powers of archaeological synthesis and philological analysis to showing this was indeed the case.

Kossinna's legacy is well known and infamous (Klejn 1999). Two years after his death the Third Reich was founded, and his agenda was enthusiastically taken up by the *Deutsches Ahnenerbe*, or German ancestral heritage, an organisation whose purpose was to use history and science to justify German superiority. The *Ahnenerbe* was a major National Socialist project, established by Heinrich Himmler in 1935 and generously endowed at Wewelsburg Castle, the ritual headquarters of the SS. Archaeology figured prominently in the justification of invasion and suppression of the free nations of Europe.

Childe would have been familiar with such overt nationalism as he criss-crossed Europe during the 1920s and 1930s. His travels linked archaeological provinces together in great chains of historical connections based on the similarity of their prehistoric artefacts, although instead of railways it was the great route-ways of the Danube, the Rhine and the shores of the Mediterranean that tied the prehistory of the continent together. He strengthened these chains by binding them ultimately to chronologies derived from the text-aided archaeology of the Near East and Egypt. He was not the first archaeologist to do this but he was the most successful.

So it is interesting to think about what else Childe might have glimpsed through the train window during his visit to the Soviet Union in 1934. Almost certainly he would have seen the effects of Stalin's programme of agricultural collectivisation. Beginning in 1929 the working practices of generations of farmers had been bulldozed aside according to the dictates of centralised state planning. Collectivisation, exacerbated by drought, is largely held responsible for the famines of 1932–3 when five million

peasants are believed to have died. Although an archaeological justification for such programmes was never sought, the idea that the movement of peoples, whether by choice or by force, was an inevitable process that drove history cannot be escaped.

Childe's two revolutions

It was immediately after his return from Russia that Childe began to re-work his synthesis of European prehistory. He started in 1935 with his Presidential address to the newly formed Prehistoric Society. Entitled 'Changing methods and aims in prehistory' he re-visited the tri-partite division of the past that had existed ever since C. J. Thomsen, in 1836, had ordered the collections of the National Museum in Copenhagen into cabinets containing stone, bronze and iron objects (Gräslund 1987). Subsequently these three ages had been much refined and subdivided, and in 1865 Sir John Lubbock, in his book *Pre-historic Times*, had separated the earliest into an Old and New stone age, or Palaeolithic and Neolithic. These terms now marked the difference in technology between hunters and farmers (Brown 1893:66).

Childe was as enthusiastic as the next archaeologist for refining the contents of those cabinets and adding geographical as well as chronological detail through excavation. But by 1935 he had lost patience with mere cataloguing. 'What then', he cried to the Prehistoric Society (1935a:7), 'is to become of the hallowed terms Palaeolithic, Neolithic, Bronze Age, Iron Age?' His answer now looks simple, but at the time it was radical. 'I should like to believe that they may be given a profound significance as indicating vital stages in human progress. I would suggest that the classifications Old Stone Age, New Stone Age, Bronze Age and Iron Age draw attention to real revolutions that affected all departments of human life' (Childe 1935a:7).

For Childe these revolutions were primarily functional-economic stages where the Neolithic meant food-producing, an interpretation apparently backed by the first appearance of artefacts such as polished axes, pottery and weaving as well as evidence of domestic animals and crops. However, his insistence that revolutions affected all departments of human life opened the door to considerations not just of economy but also of language, religion, politics and science. Although he did not specifically refer to a Neolithic Revolution in his 1935 address, the groundwork was laid so that by 1942 in his best-selling *What happened in history*, where the lack of a question mark should not go un-noticed (Whittle 2003:163), revolution

had arrived. In this book Childe set out the evidence for two prehistoric revolutions, Neolithic and Urban, which by analogy to the Industrial Revolution of the eighteenth century resulted in population growth (Childe 1935a:11). The analogy was primarily justified by the spectacular archaeological evidence for Neolithic village settlements and the first cities, what Childe referred to repeatedly throughout his subsequent career as representing an ‘upward kink in the population graph’ (Childe 1958a:71). This analogy was first applied by Childe to his Urban Revolution and only later to the earlier Neolithic Revolution (Greene 1999:99). However, the Industrial analogy also suggests a further link to the development of democracy and systems of self-government that, as Williams (1965:11) showed, is never a simple relationship.

In *What happened in history* Childe used the terminology for social development put forward by Lewis Henry Morgan in *Ancient society* (1877), a book based mainly on the author’s anthropological knowledge of North America. Morgan’s three stages were savagery (hunters), barbarism (farmers) and civilisation (urban life). Barbarism was the turning point for human society because according to his scheme agriculture appeared at this time.

Morgan was Karl Marx’s anthropologist, the source of his views on pre-capitalist societies, and his influence is obvious in Frederick Engels’ 1884 (1902) writings on the origins of the family and the state. But even though Childe (1935b:152) pronounced Morgan’s ethnography ‘antiquated’, the influence of Engels’ writings, and the result of those twelve days of conversations with Soviet archaeologists, made him realise that the three terms were helpful for historical analysis (Trigger 1980:95).

Locomotives of change

Before describing Childe’s two revolutions in more detail, I think it is worth asking why the concept of revolutions has such a historical appeal, spanning all aspects of the modernist project from the paradigm shifts that create scientific revolutions (Kuhn 1962), to the barricades thrown up by the intertwined democratic, industrial and cultural revolutions that challenged and changed political authority (Williams 1965).

The standard answer for archaeologists is that Childe was a Marxist (Trigger 1980), albeit an ambiguous one on occasion (McGuire 1992; McNairn 1980). Peter Gathercole (1994) has argued that books such as *Man makes himself* (Childe 1936) reflected the desire of the Left in the inter-war years to make a significant contribution towards scientific progress and

hence the flagging cause of socialism. However, if Childe's Marxist beliefs were the reason, then why did someone who published so copiously and across so many disciplines – 22 books and more than 200 articles between 1923 and his death in 1957 – take so long to come up with the idea? The analogy to the Industrial Revolution is, let's face it, un-subtle; especially when, as Kevin Greene (1999:99) reminds us, the term was coined by Arnold Toynbee as long ago as 1884.

While Childe gained something from his trip to the Soviet Union, seventeen years after its own historic revolution, the trip can hardly be described as his road to Damascus. Indeed such conversions do not characterise Childe's academic career, which developed themes but never emulated the stadial models of change that he favoured.

And what bigger theme than 'what happened in history?' If Childe was either going to describe what occurred or take up the challenge of answering the question, then he needed a driving force. Prehistory did not supply him with one but European and North American history certainly did with its emphasis on revolutions as indicators of fundamental political change.

Revolutions come in all shapes, sizes and degrees of success, from gunpowder plots to bloodless coups, civil wars, popular uprisings and palace revolutions. They can be approached as universal stages in development or seen as the result of contingent factors tied to a particular time and place (Stone 1966). They can be analysed either for their timeless variables by social scientists such as Childe or for their particular personalities by historians proper. So useful are revolutions in accounting for change that many historians regard them as the locomotive of history (Clark 2003:33).

But where exactly is the engine headed? Jonathan Clark (2003:42) suggests that revolutions are merely convenient historical concepts for explaining the formation of the nation-state. Consequently they are a much-needed force for driving forward the modernist project. From this perspective revolution is the engine that explains how our current political systems came into being and how an older European past, composed of tradition, was transcended. Science, the state and a global economy resulting from both imperialism and colonialism are all pillars of modernism, and much of history and social science is devoted to understanding how they arose.

The target becomes clearer if we focus on the big revolutions that have been most discussed and picked over. At the highest level there are the twinned Industrial and Agrarian revolutions (Toynbee 1884 (1969)).

These were well underway by the eighteenth century in Europe and are fully entangled with the Enlightenment and rampant imperialism. If these revolutions formed the superstructure then imagine them as a canopy above an elaborate mosaic floor where their effects are picked out in decorative motifs that would include the notion of capital and the development of markets, technology and metropolitan growth. And beneath all the best mosaic floors there is always a hypocaust blowing out hot air, fuelled in this instance by the four big northern revolutions that drove industrialisation. Here Britain leads the way although there is a dispute (e.g. Stone 1965) over the identification of *the* revolution: was it the English civil war, that executed one king in 1649, or the Glorious Revolution, that switched dynasties in 1688 but kept the *status quo* of the monarchy? Less contentious are the other three revolutions; the American in 1776, the French in 1789 and the Russian in 1917. All four apparently led directly to the modern nation-state just as day follows night, or modernism succeeds tradition.

However, Clark's (2003:37) point is that the use of the term *revolution* has been a cheat, suggesting that we can control what we cannot. Christopher Hill (1986) has shown that in the seventeenth and eighteenth centuries *revolution* had a very different meaning. It was applied to the cyclical movements of astronomical objects rather than political rupture, and the term *révolution* expressed disorder rather than a programme of action to achieve a goal (Clark 2003:45). For Hill it was the English revolution, which he identified as the Civil War, that transformed history from a cyclical to linear narrative. Clark (2003:50) is less convinced, claiming that it was not until 1789 that Frenchmen were able to console themselves with the idea that political chaos was really a process with a history and one that could be typologised into stages.

It was at this time that social scientists, or rather their philosophical precursors, began their analysis of universal developments that historians have repeatedly challenged (Stone 1966). Three age systems were not invented by Morgan in 1867. They have a long history dating back at least to the Scottish philosophers of the eighteenth century (Meek 1976) and in France, Turgot's treatise on universal history (Meek 1973; Turgot 1751 (1973)). Deeper roots can be found among Classical authors and in particular their grading of materials – mud, wood and stone – into a system of historical value (Pagden 1986:72–3). Such is the hold of the concept of three ages that anthropologist Ernest Gellner (1986:78) impishly described this thinking and classifying in stages as the doctrine of Trinitarianism: that mankind passes through three and only three fundamental stages

in its development. He was of course targeting Morgan and Marxism, but the roots of such thinking go much deeper still.

Where does Childe fit in? He was concerned with the workings of the modern state (Childe 1923) and the rise of its ancient counterpart (Childe 1934 (1952)). He was interested in process and the power of the economy to transform. His philosophy and values were Marxist and his *metier* was the grand narrative. His theme was change and in his address to the Prehistoric Society he argued that each prehistoric revolution made room for a larger population than the last.

But Childe's use of revolutions can take on a further dimension. When placed in the context of Kossinna and Marr, and the political developments in Europe of the 1920s and 1930s, we can see how his entire output is opposed to nationalism and the inevitability of totalitarianism. In his personal Retrospect (Childe 1958b:73), published after his suicide in 1957, he recalled that *What happened in history* was written in 1942 to convince himself that European civilisation – Capitalist and Stalinist alike – would recover from the Dark Age into which he saw it heading. The prehistoric revolutions he described in that book therefore sounded an optimistic note in desperate times. But how? He wrote later of his insistence that an agricultural surplus had to be concentrated for the Urban Revolution to take place, and by doing so he recognised 'the Hegelian rationality of the political and religious totalitarianism that characterized the ancient Oriental States' (Childe 1958b:72). The hope he wanted to convey was therefore based on Europe's historical ability to transform rather than to slavishly copy an older model of civilisation. On European soil, the Urban Revolution did not lead to Oriental despotism but to a positive transformation of the economic and scientific principles upon which those ancient states were founded. Europe had benefited by not being the first to attempt an Urban Revolution. Change brought progress in the eventual form of political systems of democratic self-government which required revolution to succeed, and this was an acceptable price to pay to escape the shackles of Oriental absolutism. Childe's message in 1942 to his less convinced contemporaries was therefore 'wait and see'. Europe had always risen above the Orient and would do so again, even though totalitarianism and fascism were now within its borders in Russia, Germany, Spain and Italy. For Childe, revolutions were indeed locomotives of change, drawing ever longer and heavier trains behind them. Before they provided the mechanical horsepower for written history he also used them to spin the wheels on older, prehistoric carts.

The Neolithic Revolution as an imaginative archaeology

Of course Childe was not working alone. He was quick to recognise the earlier contribution of Grafton Elliott Smith (1930 (1934)), who had welcomed the end of hunting and gathering as follows:

The creation of civilization was the most tremendous revolution in the whole course of Human History. Within a few centuries so profound a change was effected in the mode of life, the aims and occupations, and in the size of the population and in the areas affected by the changes, as to open a new chapter of Man's career with new standards of values and new social conditions and aspirations.

(Smith 1930 (1934):267)

There was no doubt in Smith's mind that this was a revolution. 'Agriculture is like the use of fire — the invention was a sudden inspiration and not the result of a gradual process' (Smith 1930 (1934):295). Contrasted with the aeons of Palaeolithic hunting when people lived 'just like an animal' (Braidwood 1948 (1957):122), the 'brilliant success' (Childe 1944:112) of the Neolithic Revolution was to 'escape from the impasse of savagery' (Childe 1942:55), enable sedentism and so pave the way for urban civilisation and ultimately the present world.

It was Childe's genius to make historical sense of a classificatory scheme. He took prehistoric artefacts out of the display cases and put them to work on the stage of world history. He inspired fieldwork to recover more precise information about the Neolithic Revolution (e.g. Braidwood and Howe 1960) and the worldwide testing of different models of how and why it all happened (e.g. Cohen 1977; Ucko and Dimbleby 1969). These models have included the factors that pushed people into agriculture, or at least magnified the consequences of any early experimentation. These factors were usually external prime movers including climate change, food shortage and propinquity to the right kinds of crops and animals. Then there are models which favour internal re-structuring, sometimes independent of such outside changes. Consequently, society is often portrayed as a complex organism concerned with honing its adaptive behaviour in order to achieve reproductive success. Population pressure figures strongly in many of these internal explanations as do the territorial packing of social units and technological advances such as axes, ploughs and storage vessels. For many archaeologists, creative ideologies mark the Neolithic mind as cognitively different while for others the changes are the products of natural selection leading to enhanced adaptive success.

TABLE 1.1. *A three-tiered approach to the study of long-term change found in many disciplines (after Dark 1998:76)*

Unit of analysis	Explanatory factors	Interdisciplinary modes of analysis
Individual	Politics	Ecological
Social group	Economics	Evolutionary
Polity (state, chiefdom, nation, etc.)	Social organisation and structure	Economic
Network(s) of interactions between any or all of the above	Cognitive and psychological factors	Cognitive
	Ecological factors including human demography	Interactional (contacts and communication)
	Ideology	Structural Historical particularist Mathematical/formal

It is not surprising then that the Neolithic Revolution has become the catch-phrase for change in both academic and public conceptions (Cole 1959; Tudge 1999). However, I am not interested here in reviewing all the competing ideas, although some will be touched upon in more detail in Part III, and for excellent overviews I recommend Lewis Binford (1968), Andrew Sherratt (1997b) and David Harris (1996a) as well as more recent and contrasting accounts by Ofer Bar-Yosef (2001), Marc Verhoeven (2004) and Brian Byrd (2005). I would note, however, that archaeologists share many procedures in common with a wide range of other disciplines that tackle questions of change in human societies (Table 1.1), suggesting that our endeavours are part of much bigger projects, both modern and post-modern, and not just structured by deep time and fragmentary data from pre-literate societies.

As a result I am more concerned with what we can learn from the Neolithic Revolution about our archaeological imagination (Gamble 2001; Thomas 1996), the process by which we have an understanding of the past and from which we go about the business of constructing imaginative archaeologies, than in merely cataloguing and dating the past.

The concept of the Neolithic Revolution is an excellent example of an imaginative archaeology. It exists because of the connections spun by masters such as Childe. The concept alters due to the social contexts that use such knowledge and incorporates new information and ideas on a daily basis. The best way to view an intellectual project as complicated as the Neolithic Revolution is as a network that brings into focus concepts, arguments, data, personalities and contexts for the production and consumption of the past in the present. The network includes myself while writing this book as well as archaeological ancestors, such as Childe, whose ideas I am drawing on. A network, as Marilyn Strathern (1996:521) has pointed out, is an interpretation. It can represent an argument as it flows between people through time and across geographic space. But as she also observes, networks have to be cut if they are not to end up including everything and everybody and hence becoming unwieldy to the point of suffocation.

This is another function of the Neolithic Revolution. It acts as a pair of scissors to cut the conceptual network, taking the continuum of archaeological time and snipping it into a big, but manageable, problem. Then our archaeological imagination can get to work. Such cutting is particularly suited to an approach that looks for the origins of elements in the Neolithic Revolution such as villages, weaving, polished axes, pottery, crops and domestic animals. These were the diagnostic elements in Childe's (1935:7) package, but an even better example came with his later Urban Revolution. Here a ten-point checklist (Table 1.2) allowed an archaeologist to recognise when civilisation had been achieved in his or her region (McNairn 1980:92–103).

The Neolithic Revolution and Orientalism

I mentioned briefly how Childe, and many others, juxtaposed the power of the East against the nationalist agenda of Kossinna and his northern homeland for European civilisation. Certainly the archaeological data point to the importance of Southwest Asia for both the earliest agriculture and cities. However, celebrating proof of evidence is to miss the point because an acknowledgement of the role of the Orient easily becomes Orientalism, Edward Said's (1978) concept of how familiar and unfamiliar spaces are created by what he termed imaginative geography. Orientalism is an exercise in cultural strength where the peoples and places of the East are contained and represented by the dominant frameworks of the West (Said 1978:40). This process has a very long history, as Said shows,

TABLE 1.2. *The list of traits identifying the Urban Revolution (Childe 1950)*

1. <i>Size</i> : an increase in settlement size towards urban proportions
2. <i>Surplus</i> : the centralised accumulation of capital resulting from the imposition of tribute or taxation
3. <i>Monumental public works</i>
4. The invention of <i>writing</i>
5. Elaboration of exact and predictive <i>sciences</i>
6. The appearance and growth of long-distance <i>trade in luxuries</i>
7. The emergence of a <i>class-stratified society</i> based on the unequal distribution of social surplus
8. <i>Composition and function of an urban centre</i> : freeing part of the population from subsistence tasks for full-time craft specialisation
9. <i>State organisation</i> based on residence rather than on kinship and involving territorial definition
10. The appearance of <i>naturalistic art</i>

but a benchmark event in the creation of modern Orientalism was Napoleon’s occupation of Egypt in 1798 and the surveys of ancient monuments, history and culture that followed. Through such means the empires of Europe, and principally those of Britain and France, affixed the Orient to their continent as a theatre packed with opinions and assumptions as much as facts. And in this theatre, this contained space, the Orient and Islam are always represented as outsiders but with a special role to play inside Europe (Said 1978:71). These imaginative geographies persist as Derek Gregory (2004) has shown in his analysis of contemporary American understanding and interpretation of the Middle East, in what he terms the colonial present. His study bears out Said’s perceptive comment that, ‘it is finally Western ignorance which becomes more refined and complex, not some body of positive Western knowledge which increases in size and accuracy’ (Said 1978:62).

The use of the Orient as a theatre is particularly evident in Childe’s work. His interest was almost totally focused on understanding Europe. For example, one of his last books *The prehistory of European society* (1958a) had its rationale plainly written on the dust jacket: ‘how and why the prehistoric barbarian societies of Europe behaved in a *distinctively European way*’ (emphasis added). In other words, they were not just pale imitations of the civilisations of Egypt and Mesopotamia. Furthermore, as we saw earlier, in Childe’s view prehistoric Europe made a better fist of the Urban Revolution than Oriental despotism, benefiting from the

mistakes by fostering liberties founded on the freedom of its craftsmen (Sherratt 1997b:60). While Childe's view contrasted with that of Elliot Smith's, 'thus the civilisation of the whole world was derived from one original source' (1933:232), namely Egypt, he shared more with the high champion of cultural diffusion than is normally allowed. For example, he described the geographical theatre for the Urban Revolution as follows:

it is bounded on the west by the Sahara and the Mediterranean, on the east by the Thar desert and the Himalayas, on the north by the Eurasiatic mountain spine...and on the south, as it happens, by the Tropic of Cancer. The geological, physiographical, and climatic conditions of this zone proved propitious to the revolutionary development. It provided the raw materials for the decisive discoveries. It offered inducements to intensive social organisation and rich rewards for large-scale cooperation. It gave facilities for communication by which new knowledge might be pooled and essential materials collected and concentrated. Finally its cloudless skies presented nightly the impressive spectacle of the uniform motion of the heavenly bodies that in other latitudes is too often veiled.

(Childe 1942:77–8)

Even the aridity of Mesopotamia was an advantage since it forced people to live along the rivers and realise their potential as described earlier. In addition, the mountains that lie to the north, east and west formed a 'fertile crescent', as the Chicago-based Egyptologist James Breasted called it in 1926, and within whose boundaries the drama of agriculture and social transformation would be enacted. Here would be found the wild progenitors of wheat, barley and goats (Zohary and Hopf 2000) and for a while the oldest villages in what archaeologist Robert Braidwood (1960) described as nuclear zones.

Edward Said would recognise this process. Rather than celebrating the Orient, as it might at first appear, the archaeologists were instead setting up a separate place isolated in this instance by time and geography. And the reason for making such an imaginative archaeology was their interest in Europe rather than the Orient. The light from the East that they often write about, where the Neolithic Revolution burns particularly brightly, is not so much a celebration of historical difference as an example of an eternal asymmetrical relationship. Europe took the idea of civilisation and transformed it in its 'distinctively European way'. And why? Because empires and colonial projects require both imaginative archaeologies and imaginative geographies to feed the asymmetry of recent and

contemporary political power. Europe, and the United States more generally, have an appetite for the identification of origins and this has characterised their colonial and national histories. For example, in his declaration of 1690 that, 'In the beginning all the world was America', the philosopher John Locke (Meek 1976:343) was engaged in an imaginative archaeology that would fold the peoples of an ever-expanding colonial world into the ambitions and identity of its self-proclaimed centre. Such imaginative archaeologies of political development depend on creating a distinct difference, a temporal realm where the *other* resides out of time and where we can go to reflect upon our historical position.

The concepts of the Palaeolithic and Neolithic are two such imaginative archaeologies which, to extend Said's analogy to another area of academic inquiry, hold the same relationship to each other as the Orient to Europe. The Neolithic dominates this power structure as farmers lord it over hunters and barbarians over savages. The Palaeolithic is a theatre with some nice painted scenery attached to the economic muscle of a Neolithic shopping mall. Consequently, our understanding of Palaeolithic people is very often phrased in terms of the farmers they are not, rather than the hunters they were. And to emphasise this asymmetry we find the invention of a third space, the Mesolithic, which has a particular function in mediating the transfer of Neolithic political power to the European continent. The term appeared in 1872 (Westropp 1872) and was later applied to evidence that showed Europe was not deserted after the Ice Age (Binford 1968:316). This archaeological space inhabited by the Mesolithic 'folk' was the drum upon which the revolutionary roll of agriculture was beaten out.

The Neolithic Revolution, a snippet from the potential archaeological archive, is one of those times and spaces that pull into focus those wider cultural practices that organise and sanction the production and consumption of knowledge about our complex world. It is a network that comes with a pedigree in understanding humanity in terms of a particular set of values and achievements and, most crucially, presents them as original.

Continuity backlash and transitions

We have seen that at least one historian, Jonathan Clark (2003), thinks that the concept of revolution is a bit of a cheat because it implies an ordered progression that in fact never existed. Following Childe's death in 1957 the commitment by archaeologists to prehistoric revolutions has been mixed for similar reasons. Several more revolutions have been proposed, as we shall see later in this chapter, and the most important has been the Human

Revolution, the subject of Chapter 2. However, between the 1950s and 1970s when large field projects in the Near East, Europe and Mesoamerica were amassing evidence concerning the origins of agriculture, and using the scientific revolution of radiocarbon dating to establish historical conjunctures that Childe (1958a) could only dream of, loud voices were raised in support of continuity.

For a short time, two of the loudest, backed by the Cambridge prehistorian Sir Grahame Clark, were Eric Higgs and Michael Jarman. In several papers (1969; 1972) they made the case for repeated experimentation in crop and animal husbandry rather than a single invention. Their guiding tenet was that from the Neanderthals of the Middle Palaeolithic onwards there had been a general trend in economic developments to increase control over resources and produce more per unit of land (Higgs and Jarman 1972:12). Cambridge exam papers of the time invited students to discuss 'that agriculture was neither Neolithic, nor a revolution' (Sherratt 1997a:271), and the smart answers concluded it was a 'continuously developing natural process of great selective value' (Higgs and Jarman 1972:13). Subsistence practices such as husbandry fluctuated during the long term that they advocated as the correct time scale for a meaningful economic prehistory. Furthermore, they successfully questioned Childe's Neolithic Revolution by showing that key artefacts such as ground stone axes, pottery and stone blades that could have been hafted to make sickles were found at earlier times at sites with hunting and gathering economies. Once expanded to a global scale the concept of the Neolithic Revolution, based primarily on the archaeology of Southwest Asia, started to leak like an archaeological sieve.

These archaeological challenges to Childe's Neolithic Revolution are examples of the gradual approach to change that is best summed up as a study of transitions. Here there are no locomotives to hurry change along and usher progress in. Instead change takes the form of future-creep. In future-creep there are no crisp divisions, only some gentle shunting that moves things forward until difference is inescapable. Such differences are expected to happen eventually and can be explained simply by the passage of enough time, a commodity with which human prehistory is abundantly blessed.

One of the best illustrations of archaeological future-creep are the seriation studies of artefact types and their agglomeration into archaeological cultures (Figure 1.1). These archaeological icons take the form of battleship curves describing the levels of occurrence through time that start thin, grow fat and end by tapering away to nothing. The explanation for

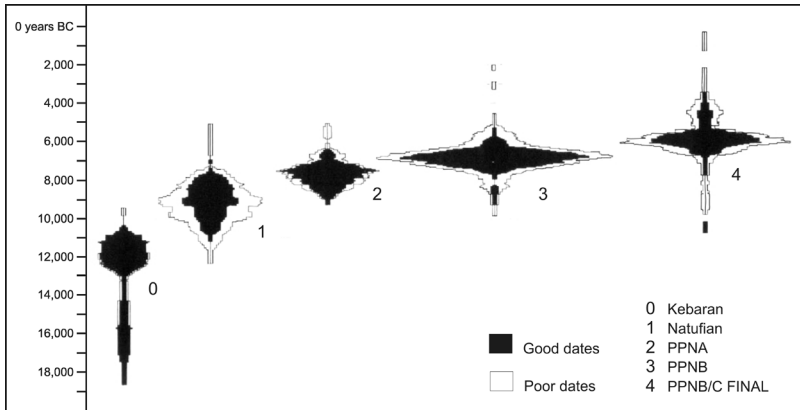


FIGURE 1.1. A chronological fleet of battleship curves. The data are radiocarbon dates that have been assessed for their reliability. They chart the timing of the origins, rise and fall of five Near Eastern archaeological cultures (after Aurenche et al. 1987).

their changing shape might be functional differences and improvements in a single artefact type, the replacement of one people's cultural inventory by another's in a site or across a region, or perhaps the transition from hunting to farming.

These battleship curves, as opposed to the step-like progression of revolutions, show archaeologists concentrating not on change but on the transition between well-defined points. These origin points are established in advance; for example, we might begin with a time with wild animals, small settlements and no pots and finish with one that had pots, domestic animals and large settlements. Transitions then become the passageways between two very different conditions, which of course we have previously defined as significant. Stone to Bronze and Bronze to Iron Ages would be another instance. Then the point of interest becomes the speed of the transition and whether it conforms to a model of slow gradual replacement, the incremental addition of novel traits and the loss of existing ones, or a more punctuated, sudden change. With a concept of transitions, even the most static archaeological evidence can become part of the long-term process of change and the 'revolution' rolls on over the millennia.

The paradox of change

But now we encounter a paradox. If archaeologists like myself regard the explanation of change as their main task, why do we spend so little time establishing what we mean by change?

Explanations abound for the appearance of literacy, urbanism and plough agriculture. They deal with the magnitude of change as well as the tempo, fast or slow. Competing explanations, be they social, functional, ecological or ideological, are fully debated (Table 1.1). And this is the problem. We think we know change when we see it, which is why the Neolithic Revolution has made sense for such a long time. However, when is a change really a change and not just variation on an existing theme? That is precisely the criticism directed by Higgs and Jarman at the list of traits and the timings of their appearance used to identify the Neolithic Revolution. Rather than a neatly bounded package of first appearances for items such as pottery, ornaments, villages, domestic animals and cemeteries there now exists a picture blurred by both time and geography. We shall see in the next chapter that the criticisms are even louder for the Human Revolution.

This was the unique perspective of Childe: by concentrating on the entwined historical relations between Europe and the Near East, he provided one of the few explicitly drawn contexts for understanding change as the transfer of political power between two different continents. His terminology and analytical approach to prehistoric evidence was directed towards uncovering this evolving international relationship. The context he set is rarely acknowledged beyond his interests in the Neolithic and Urban Revolutions and the distinctive contrasts between Europe and the Orient. Those who have followed have concerned themselves more with the transfer of elements, most notably livestock and crops, the regional variations on village and urban settlement plans and the local development of metallurgy and other craft skills. These are changes in the sense of novelties that appear for the first time but they are not changes in that bigger political sense which should be commanding our attention.

The archaeology of change personified by Childe is therefore the subject of international relations. Here political change has been defined by archaeologist Ken Dark as:

the origin, growth, decline, cessation or reorganization of political systems, structures and units at any level of analysis from the intra-state group to the global system. I also mean the generation, modification or cessation of those events and processes which cause these changes... I refer to that which is 'fundamental', in that it affects the very character of politics and of international relations.

(Dark 1998:4–5)

I would agree with Dark's insistence on the 'fundamental', in Williams' (1965:10) terms a 'genuine revolution, transforming men and institutions', which elsewhere I have identified as social life. Therefore, I understand change as organisation based on novel social premises. By contrast, variation is the accommodation of novel conditions within existing social premises (Gamble 2001:174). Dark's examples of change deal with non-state to state societies and the emergence and collapse of international systems. Consequently, he contends that millennia as well as decades are appropriate time scales to study change.

As Dark (1998:8) points out, change can be analysed, using this definition, in terms of temporally discrete *events*, *structures* (frameworks of action) or as a *process* with different modes and types of change. It can also be studied contemporaneously (synchronically) or through time (diachronically) in terms of continuities and dis-continuities. But there is no predicting the when, where or magnitude of change, especially at the vast scale of the big question of human origins.

But Dark's political definition of change raises a further dilemma for archaeologists. Re-creating the past in the form of the present has quite rightly worried us for the last forty years (Chapter 3). If our understanding of change is, as Dark shows, part of the modernist project, expressed in a variety of guises under the banner of international relations, then how does the study of change in the past escape from the concerns of the present? My short answer is that it can't and shouldn't. Our continuing reluctance to discuss what we understand by change means we have already fallen into the presentist trap. We have produced imaginative archaeologies that only make sense when related to the structures regulating the interaction between different cultural worlds. The way to avoid such pitfalls is to understand better the cultural context in which this archaeological knowledge has been produced. The paradox of change in the past is that nothing changes unless it has significance for the present.

Three current revolutions

Where does this leave the Neolithic Revolution? The concept remains shorthand for a widely recognised turning point in human prehistory but has been replaced as an analytical device based on Childe's analogy with the Industrial Revolution. The terms now used are deliberately broad – food production, plant and animal exploitation, for example – to allow the worldwide investigation of transitions in subsistence economies (Byrd 2005; Gebauer and Price 1992; Harris 1996b; Harris and Hillman 1989; Price and

Gebauer 1995; Sherratt 1997b). The term 'Neolithic' only has relevance to archaeologists working in Europe and Southwest Asia. The Americas, Australia and the Pacific do not use it, and increasingly African and Asian archaeologists prefer the historically more neutral alternatives. In a sense everyone now participates in the study of the Neolithic Revolution, and as a result the term is no longer required.

The secondary products revolution of 1981

The continuity backlash has become the new orthodoxy. Kent Flannery declared in 1969 that it was erroneous to believe that early cultivation was either an improvement or a drastic change (1969:74). This seemed to settle for good any return to the great leap forward that Childe and many others had envisaged.

However, revolutions are still alive and retain the rhetorical power to grab the headlines and set the agenda. Andrew Sherratt (1997b:156) owned up to this strategy when he decided in 1981 on an 'ugly title' with revolution in it as a necessary evil to give his concept legs. His 'secondary products revolution' (Sherratt 1997b:158–98) stressed the character of the transition to farming in the Old World where the interaction between plant and animal domesticates was crucial. In the Americas some herd animals became important pack animals but none of them were ever ridden or pulled ploughs and carts. Similarities between the Old and the New Worlds existed in that wool for textiles and milk were secondary products, meat being the primary one. Sherratt showed how the use of animal traction, and its importance for further agricultural intensification, came much later than the initial domestication of cattle and equids. These secondary products revolutionised the societies of Europe as they spread from a zone that stretched from southern Russia to the Nile delta and eastwards to Mesopotamia. 'Plough and pastoralism', the more handsome handle to the same article, summed up the transformation and re-positioned the impact of domestication and the resulting transformation of society at about five thousand years ago. Sherratt concluded that the axis of Old World development from Europe to India was a direct result of the diffusion of these new forms of energy by exchange and contact. And where they touched existing cultures these were transformed, 'their character was completely altered by the secondary products revolution, which created many of the basic features of the modern world' (Sherratt 1997b:198).

Sherratt's revolution has been criticised by Alasdair Whittle (2003:83) for lumping too much together as it searches for those broad historical patterns.

Instead Whittle (2003:166) favours a retreat from such grand narratives (Sherratt 1995), with their predilection for the single story of directed change, and argues for a move towards different kinds of history in which varying patterns of local diversity and density produce the complexity and layered nature of Neolithic ways of life.

The broad spectrum revolution of 1969

Two recurrent themes have followed accounts of the origins of agriculture: climate change and environmental circumscription (Sherratt 1997b). Childe (1934 (1952):25) had favoured an oasis or propinquity theory that brought potential domesticates and people together, while Braidwood (1960) had argued on the basis of his fieldwork in Iraq that nuclear zones, or hearths of domestication, existed (see also Sauer 1952). Desiccation had the effect of concentrating people in these favourable habitats where in Sherratt's phrase 'agriculture was an accident waiting to happen' (Sherratt 1997a:283). More recently the detailed climate curves that now exist for the period have been interpreted by archaeologist Ofer Bar-Yosef (Bar-Yosef and Belfer-Cohen 1992; Bar-Yosef and Meadow 1995) as evidence that the transition to agriculture was a punctuated event. The Younger Dryas cold phase that occurred between 11,500 and 12,650 years ago saw temperatures plummet across Europe (Renssen et al. 2001). For those Near East populations that had already become sedentary, Bar-Yosef argues, the local effect of the Younger Dryas was to select for an intensification of food production. Selection for change was felt most strongly in those settlements in the highly diverse but geographically compact habitats of the Levantine corridor (Bar-Yosef 1998). Sherratt has argued that such punctuation – and one thousand years qualifies in prehistory as a true revolution – has to be matched with centricity, where it happened. The Near East, he claims, in the tradition of Childe, offers a rare mix of opportunities that:

gives the region its reticulate aspect: not just stark environmental contrasts but their intimate admixture, providing refuges and opportunities for unusual conjunctions – all subjected to rapid and large-scale climatic changes.

(Sherratt 1997a:284)

But such a re-affirmation of climate change and environmental circumscription have only recently re-surfaced. Climate change was discounted in the 1960s following large-scale fieldwork. Instead the locus of change was placed among the hunters of the Upper Palaeolithic

(Flannery 1969:74) and the question asked was framed by human ecology: why do cultures change their modes of subsistence? In an influential paper Lewis Binford (1968) combined a more sophisticated appreciation of what hunting entailed with an account of how intensification leading to agriculture might have occurred. He put forward a demographic argument to counter environmental determinism and asked what selective pressures led to changes in the structural organisation of cultures to their environments. His answer, greatly elaborated since (Binford 2001), took into account the changes that arise from an increased packing of social units into the same geographic space. Binford's concern is to understand why, by settling down, hunters lost their key adaptive tactic, mobility, that helps solve the problem of uncertain supplies.

Binford directed attention to the geographical margins rather than the centre as the places archaeologists should look for these changes. These ideas were elaborated very effectively by Kent Flannery (1969), who applied a cybernetic model in which stable populations situated below carrying capacity evolved mechanisms to counter disequilibrium. This allowed him to answer the question from human ecology about why subsistence practices changed. Flannery outlined a model of transitions that invoked intensification through a process he termed the broad-spectrum revolution (1969:79) in which the environment remained constraining, but the key was an increase in diet breadth that raised carrying capacity and hence population. On ecological and energetic grounds Flannery argued that broadening the subsistence base to include smaller prey and plants, while at the same time domesticating larger species, would have had a revolutionary effect. His choice of revolution takes the emphasis away from the selective forces operating on a small group of field and farmyard staples and shows how harvesting from the full array of wild resources can produce dramatic results. No one set out to invent agriculture. Instead they followed ecological rationality by broadening their resource base and this led to unintended consequences.

More recently Mary Stiner (Stiner et al. 2000) has shown when this broad-spectrum revolution might have happened. It is not so much the size of resources that is important as the work involved in their capture that is in turn conditioned by their speed of flight. Furthermore the resilience of species to predation, the pace with which their numbers bounce back, is critical in conditioning patterns of predation. Tortoises and hares, for example, demonstrate very different flight strategies and resilience. So when and in what order do we see them become a regular part of the diet?

The effects of broadening the subsistence base starts with the Neanderthals and their predation on tortoises. But their predation pressure, as revealed by the large sizes of the animals they caught, was never very high, and Stiner (Stiner et al. 2000:56–7) interprets this as indicating small, dispersed human populations well below the environmental carrying capacity. It was during the Upper Palaeolithic that the reduction in size of these slow-moving prey starts to reflect heavier harvesting. As the easy-to-capture prey declined through the period so more difficult-to-catch species such as hares and birds are found among the food remains. Human numbers had increased and selection for a greater diet breadth now proceeded. The broad-spectrum revolution is therefore deep-seated and provides an example of continuity that would gladden Higgs and Jarman and other supporters of gradual change.

In his comment on Stiner's paper, Flannery (2000:64) reminds us that the 'broad-spectrum revolution was essentially a change in ethno-scientific classification by hunters and gatherers'. What had to happen was that some foods, such as wild cereal grasses that were ignored because they were costly in terms of time and effort to harvest and process, had to be promoted up the desirability list so that by the time they finally got to first choice, 'they had paved the way for a truly profound change' (2000:65).

The symbolic, sensory and sedentary revolution of 2001

The last of the current revolutions is itself a trinity, closely in step with Childe's Neolithic Revolution. Indeed, archaeologist Jacques Cauvin (2000:67–72) wrote that the Neolithic Revolution was a transformation of the mind. This, Cauvin forcefully argued, was a 'revolution in symbolism' (2000:71) that he traced through the art of the period. He contrasted a mythic world of hunters with a divinity personified in Neolithic art and figurines. A new distinction, he claimed, lay at the heart of human imagination where a social order was now expressed as an 'above' and a 'below'. Most importantly Cauvin saw this psychological restructuring impacting on the economy. But questions remained:

How can we realise the real relationship which would unite the revolution in symbolism with the production of subsistence materials which shortly followed it? May we attribute to this transformation in the structures of the imagination a dynamic sufficient to engender this series of changes? Or again... in what way were these changes another means of making manifest the transformation of imaginative constructs?

(Cauvin 2000:71)

Prior to Cauvin's revolution, anthropologist Peter Wilson (1988) had argued that the built environment rather than the art was the touchstone to this symbolic revolution. Neolithic domestic societies, he wrote (Wilson 1988:153), live their lives by reference to a structure whereas hunters and gatherers do not. Farmers invest buildings with their metaphors for living. People are merged with places and in this way domestication anchors a person with a location (Wilson 1988:71). This process of domesticating humans by building houses had an unintended consequence on the senses, particularly vision. The basis of attention so critical to social interaction was now changed in what, to paraphrase Wilson, might be termed a sensory revolution. What resulted were novel social conditions of intimacy and privacy as houses were internally partitioned (1988:179). A poetics of architectural space (Bachelard 1964) was therefore created that transformed society not only through its means of economic production but through its sensory experience.

Wilson's message is clear. We domesticated ourselves into a different social species by living behind walls, around courtyards and in modular, cell-like villages and towns, which archaeologist Trevor Watkins (2004a) has aptly described as 'theatres of memory'. The very act of niche-construction transformed us in a revolutionary way, although Wilson does not use that terminology. Watkins (2004a:19), however, goes further, concluding that 'the world's earliest village communities were also the first to develop fully modern minds and a fully symbolic culture'. To explain why they did not appear earlier, Watkins repeats Robert Braidwood's (1960) claim that culture was just not ready.

It is this act of self-construction, making culture ready, that Colin Renfrew (2001; 2003) has termed the sedentary revolution. He spells it out with his customary clarity, combining all the revolutions involved in the trinity:

The first great revolution or transition in the experience of our species was the sedentary revolution. It was then that humans entered into a series of new relationships with the material world. It was then that they built houses, fashioned images of deities and constructed shrines . . . The key to this process was the development of material symbols – symbols of power, symbols of rank and prestige, coveted materials that were the repositories of value.

(Renfrew 2003:115)

The genesis for this sedentary revolution was people exploring the symbolic and cognitive structures of their new, more densely populated

material worlds. The built environment carried all before it. Those first houses were foundation stones indeed.

But before we get swept away with the rhetoric, there are wider implications to consider. Was this sensory, symbolic and sedentary revolution really what made us human and conclusively defined our humanity? If so, then history begins with the Neolithic, whose greatest secondary product we now see was our distinctive humanity. But where does that leave the rest of prehistory, before these varied revolutions took place? Is it the case that our universal humanity is only as old as a collection of mud-brick houses by a dwindling water source with a dry wind blowing? Or is an imaginative archaeology at work here? If that is the case then the place that is described is not universal but instead one where the West and the East can, for the first time in history, be prised apart. And by prising them apart the Neolithic Revolution becomes the origin point of the modern project of European history and culture that gained definition by opposing and containing the Orient.