

The Last Big Meltdown

Our prehistoric ancestors survived rapid climate change and rising temperatures as extreme as those we face today, says Kate Prendergast. What can they tell us about global warming?

Between 18–20,000 years ago, average temperatures in Europe probably fell to at least 10°C below the levels they are today. In the last great Ice Age, glaciers expanded rapidly and covered large areas of northern and central Europe in ice sheets. Much of Europe resembled tundra and steppe: vast open landscapes, dominated by grasses and unimpeded by trees, over which huge herds of cold-adapted game such as reindeer, wild horse, steppe bison and woolly mammoth followed predictable migration paths between summer and winter pastures. Our ancestors of the Upper Paleolithic (Late Stone Age) survived by hunting these animals and exploiting their resources, enabling them to continue to develop their social and cultural presence in Europe, despite the harsh conditions they faced.

The end of the Pleistocene (the latest period of repeated glaciation) and the start of the Holocene, the inter-glacial period in which we are now living, is dated to around 10,000 BC. Then, around 9500 BC, the Earth experienced the kind of temperature shifts we may face in the near future if global warming is allowed to get out of control: temperatures went up by at least 7°C within a fifty-year period. Although such rapid warming may have happened at different times according to latitude, and the full effects of the shift to inter-glacial conditions occurred over several thousand years, people across the world were subject to huge and often rapid environmental changes, and had to adapt.

In northern Europe, much of the open tundra gave way to grasses, shrubs and cold-tolerant tree species such as birch, aspen, willow and juniper. As the temperatures increased, pine and hazel became established and were then followed by the broad-leaf species of oak, lime and elm. Many of the animal species that thrived in the glacial landscapes – woolly rhino, mammoth, and giant deer – became extinct. Reindeer and elk migrated into far northerly latitudes to be replaced by red deer, roe deer, wild pig and aurochs. Northern oceans became home to a far wider range of marine vertebrates and fish, and freshwater habitats teemed with a rich variety of fish, mammals and birds.

Faced with the loss of their traditional hunting grounds, the hunter-gatherers of mainland Europe adopted a variety of strategies. Some groups were forced to push further north into areas such as Britain and Scandinavia. Mesolithic (Middle Stone Age) peoples everywhere exploited the newly available freshwater and coastal

resources, while tending to abandon interior regions, with their thick forest cover and less diverse resources. There were some notable technological innovations during this period, including the use of bows and arrows among an increasingly specialized tool kit, and the invention of pottery in southern Scandinavia. In rare cases, such as at Lepenski Vir on the Danube, people adopted a more sedentary way of life. Overall, however, life continued much as it had before, with an abundant set of natural resources available to make viable the continuation of age-old hunting and gathering traditions.

Agriculture was adopted independently in many parts of the world. The innovations that occurred in the Fertile Crescent and the Levant (Syria, Jordan, Lebanon, Israel, Palestine, Turkey, Iraq and Iran) from c.12,000 to 8000 BC led to the eventual spread of domesticated cereal production and animal husbandry across the Near



A hunting scene from Catal Hüyük, Anatolia, c. 6850–6300 BC

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and Middle East, North Africa, the Mediterranean and eastern and western Europe. However, the archaeological record in these areas, across such a timescale, is complex, and there is no hard and fast interpretation of the ways in which hunter-gatherer groups responded to environmental changes. Indeed, the relationship between climate change and social and economic innovations remains hotly debated. But few doubt that climatic changes and their environmental impacts had a profound effect on the range of survival strategies employed in the Near and Middle East.

The Natufian people of the Levant were among the first hunter-gatherers to adopt a sedentary way of life, establishing large base camps with stone structures in the Mediterranean hills. This seems to have coincided with a period of warm and wet conditions around 12–11,000 BC, when forests spread and the availability of fresh water increased, providing prime

conditions for wild cereal growth. Then the onset of a much colder and more arid climate brought a marked fall in the distribution of wild cereal grasses, which appears to have forced the Natufians to return to hunting-gathering in order to survive.

The beginnings of agriculture occur at the transition to the warmer (OK?) Holocene. This has led some archaeologists to speculate that cultivation began under the stresses engendered towards the end of the cold period. Others, however, point to the relationship between rising temperatures and optimal conditions for cereal production, and argue that it was the onset of the Holocene that kick-started agriculture. Certainly there is no doubt that the beginnings of domesticated food production was causally related to changing climate, and it had a powerful effect on social organization. Population increased with the sustenance provided by cultivation, and settlements become larger and more substantial.

Some early Neolithic farming settlements, such as Jericho on the West Bank and Catal Hüyük in Anatolia, went on to become very substantial indeed, and are considered to be the forerunners of the first cities to emerge in the Fertile Crescent, around 4000 BC. This is why the origins of agriculture arouses so much interest: because perhaps more than any other innovation in prehistory, it raises the issue of the *longue durée*: of how far we can read back subsequent developments into the cultivation of the first cereals and the domestication of the first animals. The archaeologist Vere Gordon Childe, in the first half of the twentieth century, believed that the beginnings of settlement and agriculture represented a revolution in social and economic practices, one that laid the foundations for surpluses, trade and urban development – and the wealth and warfare that went with it. More recent archaeologists have urged caution in reading too much back into the early Neolithic (New Stone Age). Julian Thomas has argued that the early Neolithic landscape in no way resembled what we would understand as a farmed landscape, and the evidence bears him out.

At Catal Hüyük, small-scale cultivation and husbandry was practised in a landscape that was still largely wild. Moreover, the layout, decoration, material culture and evidence for ritual at the site indicates societies concerned – obsessed even – with the interplay between the domestic and the wild. James Mellaart, the original excavator at Catal, discovered many female figurines, including a seated or enthroned woman flanked by two lions. Murals on the interior and exterior walls depict groups of hunting men, hunted animals and vultures swooping down on headless bodies. Ian Hodder, the current director of excavations at the site, interprets this evidence



in terms of societies attempting to negotiate and come to terms with the domestication of what was still understood as a very 'wild' world.

Similar themes are evident in the ways agriculture spread across Europe. The take-up of agricultural practices by indigenous groups was slow and variable, and they too showed a similar concern to interpret and understand 'domestication' ritually, most notably through the elaborate megalith-building culture that sprang up across much of western Europe

from southern Sweden and Orkney to Spain, and which virtually defines the Neolithic of these areas.

Such societies are far from the warring civilizations of later prehistory, and we should not seek the origins of our civilization directly in these distant groups which made the transition to domestication almost entirely in terms of the veneration of the power of natural processes. Indeed, evidence for a 'mother goddess', the continued emphasis on hunting and on the power of nature indicates societies looking back to their hunter-gatherer traditions as much as forward to an increasingly 'tamed' landscape. Nevertheless, the issue of the *longue durée* cannot simply be magicked away either. Settlements, megaliths and cultivation 'fixed' points in the landscape, and within a few thousand years human practices on and over that landscape had irrevocably changed it.

So what lessons do our ancestors' responses to climate change hold for us? Most obvious is the degree to which they prove how adaptive we are as a species. Large climatic and environmental changes did not make them 'give up and go home'; instead they adapted, survived – and lived to tell the tale. We might draw some comfort from this, and hope that, unless present-day global warming precipitates a mass extinction event, our descendants will be able to adapt to almost anything, even if the effects of our current actions are hugely destructive.

If we want to see our connection to our ancestors, the first agriculturalists, then our industrialized world lies at the tail end of a millennia-long process in which we have tamed and exploited the Earth and its resources. Indeed, it is these very processes that have caused global warming. But we can't invoke such continuity without acknowledging the differences. Prehistoric hunter-gatherers and early farmers lived simply in the landscape and adapted to it by respecting and worshipping it. If we want to bequeath a stable environment to our descendants, we need to respect the values our ancestors bequeathed to us. It may be time for us to come full circle and return to more localized agriculture, to the veneration of nature and its fertility and to the interplay between the tamed and the wild, so powerfully expressed in Neolithic ritual, and upon which our lives, like theirs, still depend. ■

A melting glacier in India today.

What lessons do you think we have to learn from the ways our ancestors adapted to the end of the Ice Age? Let us know your views, on www.historytoday.com