



World archaeology

Archaeology: Origins of Agriculture

Phil Perkins

For tens of thousands of years humans were foragers. Yet, in a relatively short period, circa ten thousand to five thousand years ago, agricultural systems appeared in several parts of the world. This transformed human ecology, social organisation, demography and even art and religion. Yet there isn't a consensus of opinion as to why, as opposed to how, it occurred.

Chris Scarre

The need to feed people raises the question why do people start to develop agriculture at all. If you have got the right circumstances, and then there is a change in environment which makes it difficult to continue to feed people with the lifestyle you have had, then it may be that in those circumstances people find alternatives, and those alternatives then enable you to feed more people. And so, even if the environment improves again, the chances are you have too many mouths to feed to easily revert to hunting and gathering.

Phil Perkins

Chris Scarre, Professor of Archaeology at Durham University, is describing what is known as the oasis theory, which suggests that the relationship between humans and the environment is the key reason why agriculture developed. The closely related demographic theory, on the other hand, suggests that the rise in world population following the end of the Ice Age forced people to adopt agriculture. But did this improve the lives of the first farmers?

Chris Scarre

One of the things that people have said about agriculture is that on the whole it is more labour intensive than hunting and gathering, and that's one of the reasons why people have looked to explanations which, you might say, are kind of coercive factors – that people have been forced into agriculture because they had no alternative. That is ultimately what may happen. But at the very beginning it could be that agriculture was developed because people wanted special status foods for feasting; that it was actually a social need. I mean, how much of what we do in our lives is generated by competition with others? And a lot of that is powered by desire for new things, new statuses, new whatever it might be. Respect and recognition also are important. And in small-scale societies a lot of those sorts of factors are generated by the ability to, for instance, throw feasts. One possibility is that some of these foods that were being grown were actually intended especially as feasting foods. I have always been interested in the idea that some of the wheat that was grown, some of the barley that was grown, may have been turned into beer. And you can just imagine the impact of having an early form of beer to use in feasts, to impress your neighbours, to use as

hospitality food. And the way that that would perhaps have been the route to social status.

Phil Perkins

This is the feasting hypothesis, where social competition and emulation drive the practice of developing a reliable, consistent food source. But is there a really sharp distinction between hunter-gatherer and farming societies? Is it necessarily a case of either/or? Professor Trevor Watkins, based at Edinburgh University, has worked extensively on sites in Southwest Asia.

Trevor Watkins

There are plenty of places in the Near East where we now know that there isn't a simple tipping point where people stop hunting and gathering because they've switched to farming. Now we are seeing places – Çatalhöyük is one, in Central Turkey, and there are several others – where people do begin to farm and are reliant on the cereal crops they are growing and the legumes they are growing and on the sheep they are herding. But they are still supplying a significant part of their meat diet from hunted animals and they are not bothering to domesticate them, probably because they don't need to. And they are also gathering all sorts of other wild plant foods, which they don't replace with the cereal and legume diet that they are farming.

Phil Perkins

So, farmers supplement their diet with wild food. But there are equally hunter-gatherers who supplement their diet with forms of farmed food.

Trevor Watkins

There are a lot of ethnographic examples of societies, which are hunters and gatherers in our terminology, that may help to propagate the plants that they actually rely upon. So, for instance, in Northern Australia there are communities that live on wild yams and will dig a yam up and will actually cut a part of it off and put it back in the hole and take away the rest to eat, so ensuring that the plant regenerates, which shows that the sort of relationship between people and their food sources isn't necessarily simply of exploitation and collecting. They have been very careful to make sure that they keep their resources.

Phil Perkins

The transition is also difficult to detect when studying the animals that were initially domesticated.

Trevor Watkins

There are some cases, particularly in Southwest Asia, where you have a wild form which is domesticated in that area, so you have to be careful to distinguish between wild and domesticated forms of an animal. But equally there are other cases where the wild species never becomes domesticated. And I was thinking of this transition from gazelle hunting to sheep and goat herding, where it seems that gazelle never were brought into the domesticated category and that when domesticated animals come into use it's actually replaced by sheep and goat.

That's one of the indicators where, if you know enough about the natural environment ten thousand years ago in round figures, and you know something about animal ecology, then you say, yes, gazelle has never been known to be domesticated. So if

there are fallow deer there, then they are being hunted. That's one of the indicators. And the other indicator is, if you have got a lot of species generally, people are hunting. If you have got a lot of birds and tortoise and hare and fox and sheep and goat and gazelle and wild bull and something else, then the chances are that this is a spectrum of hunted animals. Whereas if you have got sheep and goat, or sheep, goat and pig, then almost certainly it's farming. It's intensive herding of a very limited number of species.

Phil Perkins

In terms of the material remains, being able to gauge whether a society is hunter-gatherer or farming or at what point between the two, requires expert assistance from an archaeobotanist or an archeozoologist.

Trevor Watkins

As a crude dirt archaeologist with black fingernails I can recognise when there is animal bones coming out of the ground and I can sometimes say, oh that's cattle as opposed to deer as opposed to sheep and goat. When you are in critical times, I mean there are some times, the medieval period, ninety nine times out of a hundred of course, it's going to be herding. If you are deep in the Palaeolithic, it's going to be hunting. But when you get into critical times, like we are talking about, then you are reliant on the archaeozoologist getting a sufficiently decent sample of bone from the excavation. Even more so for the plant remains. You may be able to see in the field that yes, you are getting cereal grains, yes you are getting lentils and various other things, but you still need the archaeobotanist to examine that material under a microscope, usually.

Phil Perkins

On the whole, most farming societies have one or two plant species on which they rely very heavily. And equally a small range of animals, whereas a hunting society will have a much wider range of foods that they can collect or hunt in their local environment. So, for food lovers, the hunter-gatherer diet is likely to offer more variety.

Chris Scarre

The beginnings of agriculture probably corresponds to a reduction in the range of foods eaten. The culinary range is probably greatly reduced and we know of course from studies that sometimes that seems to have resulted in a reduction in health.