How did human beings turn from food gatherers, which they have been for two million years, not counting earlier hominids, to food producers? And why did they take this big step?

A complicated question and one with no pat answer. As in other areas of ancient history and prehistory, new evidence and new thinking is appearing all the time.

In this lecture we will look at:

- the **Agricultural Revolution**, often called the **Neolithic Revolution** (the revolution of the **New Stone Age = 9300-4000 B.C. in the Middle East**).

- the **Urban Revolution**, the development of the first cities. This also took place in the New Stone Age.

One of the most interesting facts of human history is that agriculture (which we consider a rural phenomenon) has almost from the beginning been associated with cities -- with large groups of people living together in a restricted area, engaging in a large number of practical, religious and recreational activities, and supporting specialized workers to support those activities. One of the most important of these specialized urban activities is trade within the city and with other settlements.

Agriculture is one of many specialized skills developed in the New Stone Age, and is closely associated with the earliest cities.

**Why agriculture, when we had done without it for so long?**

Around 10,000 B.C., about 12,000 years ago, certain conditions convinced our ancestors that producing food on a regular basis for themselves was preferable to the hunting-gathering life that they had been following for millenia. The response was to domesticate certain plants and animals. These plants and animals were raised by people, instead of being collected by them.
Most of the reasons suggested for this tremendous change are guesswork. I sympathize with the uncertainty here: there are many periods in the past where agricultural production and population both increased, and it is always very difficult to figure out which came first, or at least, how the two processes are related.

One reason offered by a past textbook I find rather lame: "Also, it is surely more agreeable to have a settled home, with areas for storage and permanent defenses against aggression, than to face constant danger and upheavals of a nomadic existence."

When this statement is examined in the light of human development, it looks very curious. When wandering around and hunting has been satisfactory for millions of years, when thousands of people are quite happy doing it today, we cannot assume that our ancestors were miserably searching for a way to stabilize their lives, and just waiting for the right technology to come around to make it possible. Perhaps they were forced, by population and game conditions, to settle down, and find a way of supporting themselves in a given spot.

The move from hunting and gathering food has taken place in more than one place in human history. Each time, there has been a key crop that made it possible to create a stable agricultural society:

- Millet, a small grain used mostly to make flatbread and porridge, or eaten like rice, was the basis for the earliest Chinese civilization, in North China, and was the basis for the first African agriculture.
- Rice was domesticated in southeast Asia and is the dominant food source for most of Asia's population.
- Native American agriculture developed in Mexico and was originally based on corn -- though the potato, domesticated in Peru, is one of the world's most important crops now.

Middle Eastern and European agriculture is based primarily on two closely related plants, barley and wheat. This type of agriculture is the earliest we know of, and a very important one. Barley and especially wheat are very nutritious, and can be made into a variety of foods -- porridge, flatbreads, raised breads, and beer. These crops quickly spread from their original Middle Eastern home to Europe, North Africa, and Northern India. The civilizations that we talk about in this course were fed on wheat and barley bread.

Before about 10,000 B.C., wheat and barley were wild grasses that grew only in Palestine, Lebanon, the coast of Syria, and northern Syria and Iraq, near the headwaters of the Tigris and Euphrates rivers. The human population of this area was
very familiar with these plants. At least 5,000 years before agriculture (15,000 B.C.), we know that people living on the shores of the sea of Galilee had an elaborate technology to utilize grains: at a place called Ain Gev archaeologists have found flint and wood sickles used to harvest grain and grindstones to turn it into flour.

The people at Ain Gev were still hunters and gatherers, but about 4000 years later, around 11000 B.C., a culture archaeologists call Natufian was depending on grain, peas, and chickpeas to a much greater extent. They wandered a lot less than hunter-gatherers and lived in bigger groups. One community, now called Ain Mallaha, probably held 200 or 300 people, up to 6 to 10 times the size of a hunter-gatherer band. Agriculturalists? Experts disagree. They were already using plants that would be, in the future, fully domesticated.

After 9000 B.C., grains were certainly domesticated, and other breakthroughs followed over the next 2000 years: A number of other breakthroughs were made within two thousand years, including large-scale domestication of animals.

Some of the useful species first tamed in the Middle East:

- Dogs (c. 11000 B.C.)
- Goats, sheep, pigs, cattle, and cats (between 8500 B.C. and 7000 B.C.)
- Donkeys, ducks, and geese (later yet)

The historical prominence of the Middle East owes something to this genetic richness (also seen in plant life).

A human invention that contributed to the agricultural revolution was the invention (in the M.E.) of pottery around 8000 B.C. (early Japanese beat them to it: 11000). Its most important use was for storing food over a long period. People who could store their most important form of wealth, their new agricultural surpluses, were in a position to create larger and more complex societies.

**Even before pottery and the large-scale domestication of animals, such larger societies were coming into existence.**

The biggest found so far was Jericho, on the Jordan river. In 9000 B.C. there was a settlement at Jericho of about 3 or 4 hectares (less than ten acres) and about 1500 inhabitants -- the size of a village in today's world, but 50 times the size of a hunter-gatherer band. Jericho of the year 9000, was notable for having a wall. At some point the people of Jericho decided it was worthwhile to protect themselves from
someone or something and moved 10,000 tonnes of rock to accomplish this, plus a stone tower.

Jericho, like similar sites (e.g. Jarmo in Iraq) is often described as "early agricultural village." I can't help but wonder if, in context, it should be considered a city. Jericho had a diversified economy. This alone does not make it a city. Any healthy village today has a diversified economy. But today's villages depend on other, larger, more diversified settlements, located in cities, near or far away. Jericho was the biggest, most diversified economy in its era. It was the big apple.

If I'm right about this, then the full domestication of wheat and barley very quickly produced some sort of urbanization. The connection between agriculture and urbanization is clearer when we look at another, later settlement, Çatal Hüyük in southern Turkey.

Today Çatal Hüyük is, a mound made up of crumpled clay bricks from successive settlements on the same location over centuries. It was occupied for at least 800 years, so it is a big double mound, covering 32 acres. But the town that created the mound was entirely unknown to history until 1961, when a British team under James Mellaart began digging.

They found a huge settlement, far bigger and far older than anything they had expected. Different dating methods give different ranges for the time of occupation: Carbon-14 says between 6250 and 5400 B.C.; tree-rings indicate initial settlement between 7200-7100 and abandonment between 6400 and 6300 B.C.

This means Çatal Hüyük is after the invention of pottery, and after the big wave of animal domestication. It was based on a far more varied and productive agriculture than Jericho. At its height, it contained perhaps as many as 5,000 inhabitants.

We have a pretty good picture of its early town life.

Çatal Hüyük is made up of a large number of houses and shrines made up of clay brick and the occasional piece of lumber. The city itself looked something like a honeycomb. There were no town walls -- each house was a little fortress, with mostly blank exterior walls that it usually shared with neighboring houses, though there were intervening courtyards too. Access was through the roof or doors in second stories, and light was through very high windows for security reasons. It was a town without streets, where traffic and socializing went over the roofs.
The houses were well-made, with care taken for protecting the mud brick from the winter rains, and for the disposition of garbage. It was thrown in the courtyards, which were not streets, you'll remember, and then covered with a layer of wood ash.

The average house was made up of a main room, six meters by four meters, with a storage room along one side. In this main room a family of between five and seven lived, cooked and slept. When someone entered the house from the roof, he or she came into the kitchen area, which had both a hearth and an oven. Along other walls were platforms for working, sitting and sleeping. The interiors were often decorated, and except for the smoke we would probably think them reasonably comfortable. If you got sick of your family, there was always the second story porch-storage room, the roofs, or outside the city altogether.

One peculiar aspect of the Çatal Hüyük house is that the bed was also the family burial plot. If archaeologists have it right, dead members of the family were exposed to the vultures outside the city, and when their bones were picked clean, they were buried under the clay sleeping platform. This may seem rather gruesome to us, but to them, it was probably homey.

Çatal Hüyük had a culture of some social and religious complexity. In the part of the city that has excavated, lots of shrines have been found, decorated with paintings, statues, and especially skulls, human skulls included but mainly the horned skulls of bulls, a big favorite in Çatal Hüyük and elsewhere in the very ancient Middle East. Shrines also had plaster reliefs: clay and plaster bulls’ heads and horns joined the real ones.

James Mellaart thinks that bulls represented the male element of the supernatural. There are lots of reliefs showing women. One favorite theme was female fertility, and the most common figure is a goddess giving birth.

There was social stratification in Çatal Hüyük. The old hunter-gatherer groups may or may not have been socially egalitarian, but no one member could have much more physical property than another. In Çatal Hüyük, it is quite clear that some people owned more than others.

The local economy was far from primitive. The city herded sheep, and ate cattle. The citizens hunted, though few wild animal bones are found in the city. Skins of wild animals were used extensively for clothing. Many varieties of cultivated plant food were cultivated, including grain for bread, peas, oil from mustard seed, and acorns, capers, crab apples, hackberries, grapes, junipers, walnuts and pistachios were commonly eaten. So were birds’ eggs, fish, and game birds.
The town was also a very developed industrial center. Though no big workshops have been found in the excavated area, there is evidence of weavers and basketmakers, matmakers, carpenters, stone tool makers, beadmakers "who drilled in stone beads hoses that no modern steel needle can penetrate and who carved pendants and used stone inlays," makers of shell beads, workers in obsidian and flint, workers in bone who made knives, scrapers, ladles, belthooks, pins and cosmetic sticks, carvers of wooden bowls and boxes, people who pounded native copper into sheets and made jewelry out of it, builders, merchants and artists. The variety of cosmetics was quite large, and the users had highly polished obsidian mirrors in which they could see the results.

There is no doubt in my mind that this was an urban community. Çatal Hüyük is on a plain with no natural resources except mud close by, but a number of things in the middle distance. Despite its early date it was a city of thousands, bigger than many medieval cities, and had to live on its brains, the skills it had developed, skills that were agricultural, industrial, and commercial.

Çatal Hüyük was a trading city. It imported pigments, marble, semiprecious stones, timber, obsidian, from the Taurus mountains, Syria, and the Mediterranean coast. One export was its distinctive pottery, which has been found 160 km away. It also exported its skilled inhabitants. The small neolithic agricultural villages in the vicinity are not prior to Çatal Hüyük, they are colonies whose way of life depends on the metropolitan center.

It is very interesting that hunting and not agriculture provided the people of Çatal Hüyük with the main theme of their art. This underlines the fact that outside the city walls was an environment, that despite thousands of years of agricultural experimentation and progress, was still pretty wild.

The city of Çatal Hüyük inspired one urban theorist, Jane Jacobs, to speculate that cities produced agriculture, and not vice versa. The basis of her theory is the well-known fact that urban people, crowded together and constantly interacting, produce more than their per capita share of new ideas and economic innovations. Prehistorians say Jacobs is probably wrong in saying that cities created agriculture. But another aspect of her theory is relevant. Jacobs says that cities grow and thrive because they create new kinds of work, the products of which, and the techniques of which, they trade for other things and techniques. Jacobs also believes that one city alone cannot thrive -- it needs other specialized centers to trade with, to exchange innovations with. This is an interesting point, because since James Mellaart found Çatal Hüyük, similar if smaller sites have been found from the same early period, in Syria, northern Iraq, northern Iran and elsewhere in Turkey. There was
indeed a network of trading towns in this part of the world, almost as soon as there was any agriculture to speak of.

This really gets us no closer to the ultimate origins of agriculture than the guesses I talked about earlier. But Çatal Hüyük and its trading partners shed interesting light on the processes of the agricultural revolution. Historically, developed agriculture has been associated with thriving cities, because the active market makes innovation profitable. It also seems that once agriculture reached a certain level of sophistication, it produced the first cities quite quickly; and it is very likely that much further agricultural innovation took place in an urban environment.

BIBLIOGRAPHY


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