

The Neolithic Revolution, Reading #1

The most important technological development ever to occur in human history was the domestication of plants (agriculture) and animals (pastoralism). Together these developments are called the Neolithic Revolution and they allowed the development of urban centers (towns and, later, cities), trade and most of the other things we consider to be components of "civilization." When and how did this most important event occur?

The Neolithic Revolution occurred first in the so-called "Fertile Crescent" or Mesopotamia in what is now modern Iraq. It also occurred independently (probably) at later dates in China, the Americas and possibly in parts of Africa and New Guinea. Agriculture and pastoralism diffused from Mesopotamia to Egypt, Western Europe and the Indus Valley (modern Pakistan).

To understand how the Neolithic Revolution occurred it is necessary to understand the economic system it replaced. Until the Neolithic, and in most areas for a long time after, all humans engaged in an economic activity called "hunting and gathering" which is exactly what it sounds like—the acquiring of food by hunting wild animals and gathering wild plants. This system is called "food extraction" as opposed to "food production" by agriculture and pastoralism. Hunting and gathering is actually a very efficient system that much of the time produces ample food. The main disadvantages are an inability to maintain surpluses against bad times or for supplying non-food producers (craftsmen, leaders, etc.) and the fact that it can only maintain (in most areas) a very low population density.

By comparison, agriculture and pastoralism, even in fairly primitive forms, provide large surpluses and can supply a much larger population per square mile. This allows a growth in population, an ability to store food against bad times and the maintenance of non-food producers who can specialize as craftsmen, warriors and leaders. These developments, in turn, allow for a more complex society and the possibility of urbanization. There are, however, drawbacks. Farmers, especially in ancient and medieval times, had to work much harder and thus had less leisure than hunter-gatherers. In essence, agriculture is much more labor intensive than hunting and gathering. Agriculture also led to a much greater dependence on a smaller range of foods, so there is evidence that early farmers were more malnourished than hunter-gatherers. So farmers could produce far more food (and thus could have more children) but the food was of lower nutritional quality.

The Neolithic revolution was actually a gradual event. It probably developed from the practice that some hunter-gathering societies have of encouraging their favorite plants to grow by clearing away competing plants (weeding or burning) and saving the seeds and planting them. In other words, you don't have to actually be a farmer to know that if you give your favorite plants a little bit of help, then next time to pass through that area you may find more of your favorite food available. Many hunter-gatherers practice this to some degree. From this practice probably came the idea of clearing a whole area (by fire, for example) and planting the WHOLE area with several of your favorite foods. Then you move on to hunt and gather elsewhere and, hopefully, when you come back to that area you will find lots of your favorite foods growing. The only step that is left to take is for the hunter-gatherers practicing this technique to settle down next to the cleared area and tend it more systematically. Once they do this, they become farmers, even though they may very well still hunt and gather to some degree to supplement their farming. So agriculture (and by an analogous method, pastoralism) developed directly from already existing practices among hunter-gatherers.

Given that both economic systems (food extraction and food production) have advantages and disadvantages, why has agriculture essentially taken over the world and hunting and gathering is now found only in very marginal and supposedly "backwards" area like New Guinea and the Australian outback? There seems to be a tradeoff between having more leisure and better nutrition versus simply being able to feed more mouths. Any given person may well choose to have a more varied and interesting diet and more free time than to be able to feed more people but otherwise be more miserable. Why, then, did the latter option win out in the end?

Simply put, it is an evolutionary process. As with the development of a species, the development of cultures is greatly determined by what strategies produce the most offspring. In any evolutionary competition, the strategy that produces the most children generation after generation will eventually win over strategies that allow the production of fewer children no matter how happy or unhappy those children are. So agricultural societies simply fed more people, allowed for larger families and so could push out, absorb or slaughter the hunter-gathering societies in the long run.

Neolithic Revolution, Reading #2

This is the story of a revolution. It's not as well-known as the French Revolution, or the Industrial Revolution, or the Information Revolution. Neither did it take place quite so quickly. No records were kept, so there is still much we do not know about it. Even so, it stands alone as the greatest revolution in the history of mankind. Were it not for the Neolithic¹ Revolution, society as we know it today would be vastly different, and none of these other revolutions mentioned would have ever taken place.

Hunter-gatherer Life

For most of our time on Earth², we humans lived as hunter-gatherers. Every day, groups of people would trap and kill wild animals, while others collected and prepared wild plants, nuts, fungi, and berries. If they were lucky and food was abundant, they were able to provide enough food for themselves and their children. If they were unlucky, they starved and died. In order to stay close to their food sources, hunter-gatherers needed to be mobile. They set up temporary camps, lived there for a while, and moved on when the food supply began to dwindle. For mobility, tribal units were small – just a few families, all of whom worked hard to keep themselves and their children alive. Because of the vagaries of weather, animal migrations, and the long seasons³, starvation was always just one step away. People had precious little time to do anything other than find food, warmth, and shelter for themselves and their families⁴.

The Dawn of the Neolithic Age

Fourteen thousand years ago, at the end of the last Ice Age, a new lifestyle, known to archaeologists as the *Natufian* culture, began to emerge in the Middle East. The Ice Age was coming to an end and temperatures were warming very quickly. Food became available in relative abundance for the first time in thousands of years. Instead of having to travel long distances to find food, some groups were able to live in the same place all year round. People started to build permanent dwellings. By 10,000 BC, the end of the **Younger Dryas** period, they were discovering that **certain animals**, such as goats, sheep, **cattle** and pigs, had temperaments and dispositions that made them easy to manage within close proximity to their dwellings. They selected and cultivated certain grasses, such as oats, wheat and barley, which provided nourishment to larger groups of people. These plants became common anywhere there was human settlement, eclipsing all other plant-food sources. They discovered how to store and preserve food over the harsh winter months. Thus, farming began and a new age, the Neolithic Age, was ushered in.

The Effects of the Neolithic Revolution

The move from a hunter-gatherer lifestyle to a sedentary farming lifestyle did not take place overnight. Neither was it unique to the Middle East: Latin America and China experienced totally independent Neolithic Revolutions at later periods in time. In fact, it can be argued that in the beginning, it was in many ways an *inferior* lifestyle to hunter-gathering, since settled people were easier targets for attack, their nutrition undoubtedly suffered due to lack of a balanced diet, and they were more likely to suffer diseases. However, by 7000 BC, it was the dominant occupation in the Middle East, and it was already taking hold in Southern Europe and Northern Africa. For those people affected, the change that had taken place was enormous. The changes were so profound they live on with us today.

Population Growth

The changes brought about by farming can be distilled into two key concepts - a sedentary lifestyle, and a food surplus.

In hunter-gatherer societies, women need a gap of at least three to four years between children, as multiple, highly dependent babies are incompatible with a mobile lifestyle. No such limitation existed when people lived in permanent settlements, and so it became possible for women to have children much more frequently. Additionally, as the techniques of plant cultivation and animal husbandry became more refined, it was possible to feed entire groups of people from relatively small numbers of food-sources, and still have food left over for storage during the winter months. People in agricultural communities were less subject to the whims of nature than hunter gatherers and thus had a higher chance of survival. Thus, a population explosion occurred, and over time villages, then towns, and eventually cities, took shape.

Specialisation

Another effect of the food surplus was that not everybody needed to be involved almost solely in the activity of finding and preparing food. People now had more time to do other things and some people were at liberty to dedicate themselves entirely to other pursuits. New skilled professions were born such as tool-making, milling, **pottery**, weaving, and carpentry, to name a few. Thus, the Neolithic Revolution gave rise to rapid technological progress that continues unabated to the present day.

Trade

Trade was always a feature of hunter-gatherer societies; however, with the development of farming it increased greatly in scope and scale. With excess food and newly created specialist crafts available, societies had a greater capacity to produce goods of value to others. A new class of specialists emerged to facilitate the exchange of goods: the merchants. In many cases these people became enormously wealthy and powerful. Inequality had arrived, and a whole new set of systems and structures would be required to deal with this.

Security

All this wealth, prosperity, and stability had a downside. There were lots of people around who greatly coveted it, and would stop at nothing to get hold of it themselves. New security measures were required to keep unwanted people away from other peoples' possessions. Barriers and walls were constructed, leading in time to forts and citadels. Yet another group of specialists, soldiers, emerged, either to defend the property of the rich, or to attack others in order to achieve greater enrichment. Rules governing the rights of property ownership had to be devised and enforced, leading much later to the legal system as we know it today. Security still remains one of our biggest concerns today, with huge armies of soldiers and lawyers a common feature of developed societies.

Government

The problems of these new, complex societies were many and varied: Dramatic increases in population with pressing demands on housing and food supply; disputes flaring up regularly due to the close proximity of families to each other; crime and threats from both within and without, made strong leadership and organisational skills absolutely necessary to the survival of a community.

A new political class emerged, specialising in the skills of governance. These people were in a position to enforce laws, punish law-breakers, rule over internal disputes, fight wars, and commission public works. They surrounded themselves with close groups of advisors and experts to help maintain their position of privilege. They raised finance for their endeavours by demanding tribute, or **taxes**, from their subjects. Myths were often invented to guarantee their exalted position over many generations. The art of kingship was born.

Disease

The new sedentary lifestyle brought with it an unprecedented and enduring threat. For the first time in history, large groups of humans, animals, waste material, and rubbish were concentrated together in the same households⁵. This close proximity conferred advantages to select organisms who were quickly able to jump species, infecting the human population in large numbers for the very first time. Examples included smallpox, tuberculosis and measles, influenza and **malaria**. It was around this time also that the **rat** attached itself to human societies and has prospered ever since. Although medicine has played a major role in quelling many diseases in modern society, many of them continue to kill millions of people each year.

Other Outcomes

Additional direct effects of the Neolithic Revolution would include pet ownership (cats, dogs), selective breeding (all farm animals, cereal crops, fruit, and vegetables), the foods that we eat today (e.g. bread, milk, beef, chicken, eggs), the clothes that we wear (wool, cotton, leather), the landscapes of today (massively denuded of trees, and in the Middle East, arid desert caused to some extent by over-farming

during the Neolithic Age) and even, as has been suggested, our histories, in that relative agricultural advantages often led to political domination of one society by another in many parts of the globe.

Conclusion

Although it is widely acknowledged that agriculture did not occur overnight and that the transition from hunter-gatherer society to an agricultural society took a few thousand years to complete, it would be folly to underestimate the effects on society caused by its introduction. Fourteen thousand years on, the Neolithic revolution still dominates our everyday lives.

Further Reading

Diamond, Jared. *Guns, Germs and Steel: The Fates of Human Societies*. *Vintage*. 1998.

Mithen, Steven. *After the Ice : a Global Human History 20,000BC-5,000BC*. *Weidenfield & Nicholson*, 2003

¹Otherwise known as the New Stone Age.

²Anatomically modern humans appear to have originated around 100,000 years ago.

³Not to forget that Ice Age climates dominated most of human pre-history

⁴To say they did nothing else but look for food would, of course, be wrong: hunter-gatherers, similar to their contemporaries today, had many basic technologies available to them such as axes, knives, bows and arrows, and cooking utensils. They also held spiritual rituals and dances, and organised themselves in battle against each other.

⁵Hunter-gatherers could always up and leave when conditions in any one place became too putrid. Sedentary farmers did not have such luxuries available to them.

Article Reading Question: Answer the following questions from the readings in 3-5 sentences. Please provide as much detail as possible from the reading. You will need to consult both readings in order to fully respond. You must *handwrite* your responses.

1. What does the term “Neolithic Revolution” refer to?
2. What factors led to the NR (Neolithic Revolution)?
3. What disadvantages existed for hunter-gathers?
4. What changes did hunter-gathers make to their lifestyles during the NR?
5. What are some examples of the first plants and animals to be domesticated?
6. In what places did the NR occur?
7. Why would farming be a more beneficial way of life?
8. Explain any three major outcomes of the NR.
9. Why do we call the NR a “revolution?”