INTRODUCTION

Since the earliest appearance of modern humans more than 150,000 years ago during the Pleistocene (Ice Age), people had always relied on hunting herds of wild animals, fishing, and gathering wild plants to feed themselves. This required humans to organize themselves in small-scale groups as nomadic hunter-gathers, migrating across the landscape to follow their prey, and to collect a variety of widely scattered wild plant species. However, with the major climate changes that marked the end of the Pleistocene and the beginning of the Holocene (or modern) Age, a major cultural change took place as well. About 10,000-8300 BCE, people in the Middle East first began to settle down in village communities of sedentary (settled) hunters and gatherers. Approximately 8300 BCE, these communities began to domesticate those key plants and animals that they had previously been hunting and gathering: wheat, barley, chickpeas, sheep, goats, cattle, and pigs. Domestication is the process of increasing human control over the breeding of wild plants and animals in order to select for traits that make them more useful for human needs, such as food, transportation, or other animal products, such as wool, hides, or dairy products. This selective breeding process results in genetic changes in the plants and animals so that they become recognizably different species from their wild ancestors. This shift to a new agricultural (farming) way of life based on the combination of sedentism and the domestication of plants and animals as the Neolithic Revolution. As settled agriculture developed around the world, people were able to live in large settled communities with a reliable, predictable, and abundant food supply that was able to support the development of cities, craft specialization, social stratification, temple priesthoods, and kingship – the complex of connected institutions that we call “civilization”. However, not everyone agrees that this was a good thing…

QUESTION: What kind of changes in the way people lived took place as part of the Neolithic Revolution? Remember to explain the before and after!

DIRECTIONS: Scholars continue to debate over whether the development of agriculture was an improvement to human life. The first article below argues that farming was a mistake, while the second challenges that claim. Read both selections, annotating as you go, and then come to a decision for yourself as whether the Neolithic Revolution was a positive or negative change. Write a one-page hand written response on the back of this page (double-spaced if typed) arguing for your view, supported with evidence from the texts.
THE WORST MISTAKE IN THE HISTORY OF THE HUMAN RACE

Jared Diamond, Evolutionary Biologist, Discover Magazine, 1987 (adapted and abridged)

…[R]ecent discoveries suggest that the adoption of agriculture, supposedly our most decisive step toward a better life, was in many ways a catastrophe from which we have never recovered.

Here's one example of an indirect test: Are twentieth century hunter-gatherers really worse off than farmers? Scattered throughout the world, several dozen groups of so-called primitive people, like the Kalahari bushmen, continue to support themselves that way. It turns out that these people have plenty of leisure time, sleep a good deal, and work less hard than their farming neighbors. For instance, the average time devoted each week to obtaining food is only 12 to 19 hours for one group of Bushmen, 14 hours or less for the Hadza nomads of Tanzania. One Bushman, when asked why he hadn't emulated neighboring tribes by adopting agriculture, replied, "Why should we, when there are so many mongongo nuts in the world?"

One straight forward example of what paleopathologists (scientists who study ancient diseases) have learned from [ancient] skeletons concerns historical changes in height. Skeletons from Greece and Turkey show that the average height of hunter-gatherers toward the end of the ice ages was a generous 5' 9" for men, 5' 5" for women. With the adoption of agriculture, height crashed, and by 3000 B. C. had reached a low of only 5' 3" for men, 5' for women. By classical times heights were very slowly on the rise again, but modern Greeks and Turks have still not regained the average height of their distant ancestors.

Another example of paleopathology at work is the study of [Native American] skeletons from burial mounds in the Illinois and Ohio river valleys... that paint a picture of the health changes that occurred when a hunter-gatherer culture gave way to intensive maize (corn) farming around A. D. 1150. Studies by George Armelagos and his colleagues then at the University of Massachusetts show these early farmers paid a price for their new-found livelihood. Compared to the hunter-gatherers who preceded them, the farmers had a nearly 50 per cent increase in enamel defects indicative of malnutrition, a fourfold increase in iron-deficiency anemia,... a threefold rise in bone lesions reflecting infectious disease in general, and an increase in degenerative conditions of the spine, probably reflecting a lot of hard physical labor. "Life expectancy at birth in the pre-agricultural community was about twenty-six years," says Armelagos, "but in the post-agricultural community it was nineteen years. So these episodes of nutritional stress and infectious disease were seriously affecting their ability to survive." The evidence suggests that [these Native Americans] took up farming not by choice but from necessity in order to feed their constantly growing numbers. "I don't think most hunter-gatherers farmed until they had to, and when they switched to farming they traded quality for quantity," says Mark Cohen of the State University of New York at Plattsburgh...

There are at least three sets of reasons to explain the findings that agriculture was bad for health. First, hunter-gatherers enjoyed a varied diet, while early farmers obtained most of their food from one or a few starchy crops. The farmers gained cheap calories at the cost of poor nutrition, (today just three high-carbohydrate plants -- wheat, rice, and corn -- provide the bulk of the calories consumed by the human species, yet each one is deficient in certain vitamins or amino acids essential to life.) Second, because of dependence on a limited number of crops, farmers ran the risk of starvation if one crop failed. Finally, the mere fact that agriculture encouraged people to clump together in crowded societies, many of
which then carried on trade with other crowded societies, led to the spread of parasites and infectious disease… Epidemics (widespread diseases) couldn't take hold when populations were scattered in small bands that constantly shifted camp…

Besides malnutrition, starvation, and epidemic diseases, farming helped bring another curse upon humanity: deep class divisions. Hunter-gatherers have little or no stored food, and no concentrated food sources, like an orchard or a herd of cows: they live off the wild plants and animals they obtain each day. Therefore, there can be no kings, no class of social parasites who grow fat on food seized from others. Only in a farming population could a healthy, non-producing elite set itself above the disease-ridden masses.

Similar contrasts in nutrition and health persist on a global scale today. To people in rich countries like the [United States], it sounds ridiculous to extol the virtues of hunting and gathering. But Americans are an elite, dependent on oil and minerals that must often be imported from countries with poorer health and nutrition. If one could choose between being a peasant farmer in Ethiopia or a bushman gatherer in the Kalahari, which do you think would be the better choice?

**HUNTER-GATHERERS: NOBLE OR SAVAGE?**

The Economist, 2007 (adapted and abridged)

About 12,000 years ago people embarked on an experiment called agriculture and some say that they, and their planet, have never recovered… Recently, though, anthropologists have subtly revised the view that the invention of agriculture was a fall from grace. Maybe it was not an 80,000-year camping holiday after all…

Several archaeologists and anthropologists now argue that violence was much more pervasive in hunter-gatherer society than in more recent eras. From the !Kung in the Kalahari to the Inuit in the Arctic and the aborigines in Australia, two-thirds of modern hunter-gatherers are in a state of almost constant tribal warfare, and nearly 90% go to war at least once a year. War is a big word for dawn raids, skirmishes and lots of posturing, but death rates are high—usually around 25-30% of adult males die from homicide. The warfare death rate of 0.5% of the population per year that Lawrence Keeley of the University of Illinois calculates as typical of hunter-gatherer societies would equate to 2 billion people dying during the 20th century.

At first, anthropologists were inclined to think this a modern pathology. But it is increasingly looking as if it is the natural state. Richard Wrangham of Harvard University says that chimpanzees and human beings are the only animals in which males engage in co-operative and systematic homicidal raids. The death rate is similar in the two species. Steven LeBlanc, also of Harvard, says Rousseauian (philosophy that people are naturally good) wishful thinking has led academics to overlook evidence of constant violence. Not so many women as men die in warfare, it is true. But that is because they are often the object of the fighting. To be abducted as a sexual prize was almost certainly a common female fate in hunter-gatherer society. Forget the Garden of Eden; think Mad Max.

Constant warfare was necessary to keep population density down to one person per square mile. Farmers can live at 100 times that density. Hunter-gatherers may have been so lithe and healthy because the weak were dead. The invention of agriculture and the advent of settled society merely swapped high mortality for high morbidity, allowing people some relief from chronic warfare so they could at least grind out an existence, rather than being ground out of existence altogether.

Notice a close parallel with the industrial revolution. When rural peasants swapped their hovels for the textile mills of Lancashire, did it feel like an improvement? The Dickensian view is that factories replaced a rural idyll with urban misery, poverty, pollution and illness. Factories were indeed miserable and the urban poor were overworked and underfed. But they had flocked to take the jobs in factories often to get away from the cold, muddy, starving rural hell of their birth.