

Gerhard Lenski: Society and Technology

Describes how societies have changed over the past 10,000 years.

Lenski **focuses on** the importance of **technology** in shaping any society.

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What makes the way of life of people such as the Tuareg of the Sahara so different from your life as a college student in the United States?

How and why do all societies change over time?

What forces divide a society? What forces hold a society together?

Technology and social changes

- The work of Gerhard Lenski (Nolan & Lenski, 2010) helps us understand the great differences among societies that have existed throughout human history.
- Lenski uses the term sociocultural evolution to mean changes that occur as a society gains new technology.
- Inventing or adopting new technology sends ripples of change throughout a society.
- The more technology a society has, the faster it changes.

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- How many people in U.S. society can say that they live the way their grandparents or great-grandparents did?
- Modern, hightechnology societies such as our own change so fast that people usually experience major social changes during a single lifetime.
- Imagine how surprised your great-grandmother would be to hear about “Googling” and texting, artificial intelligence and iPods, replacement hearts and test-tube babies, space shuttles and screamo music.

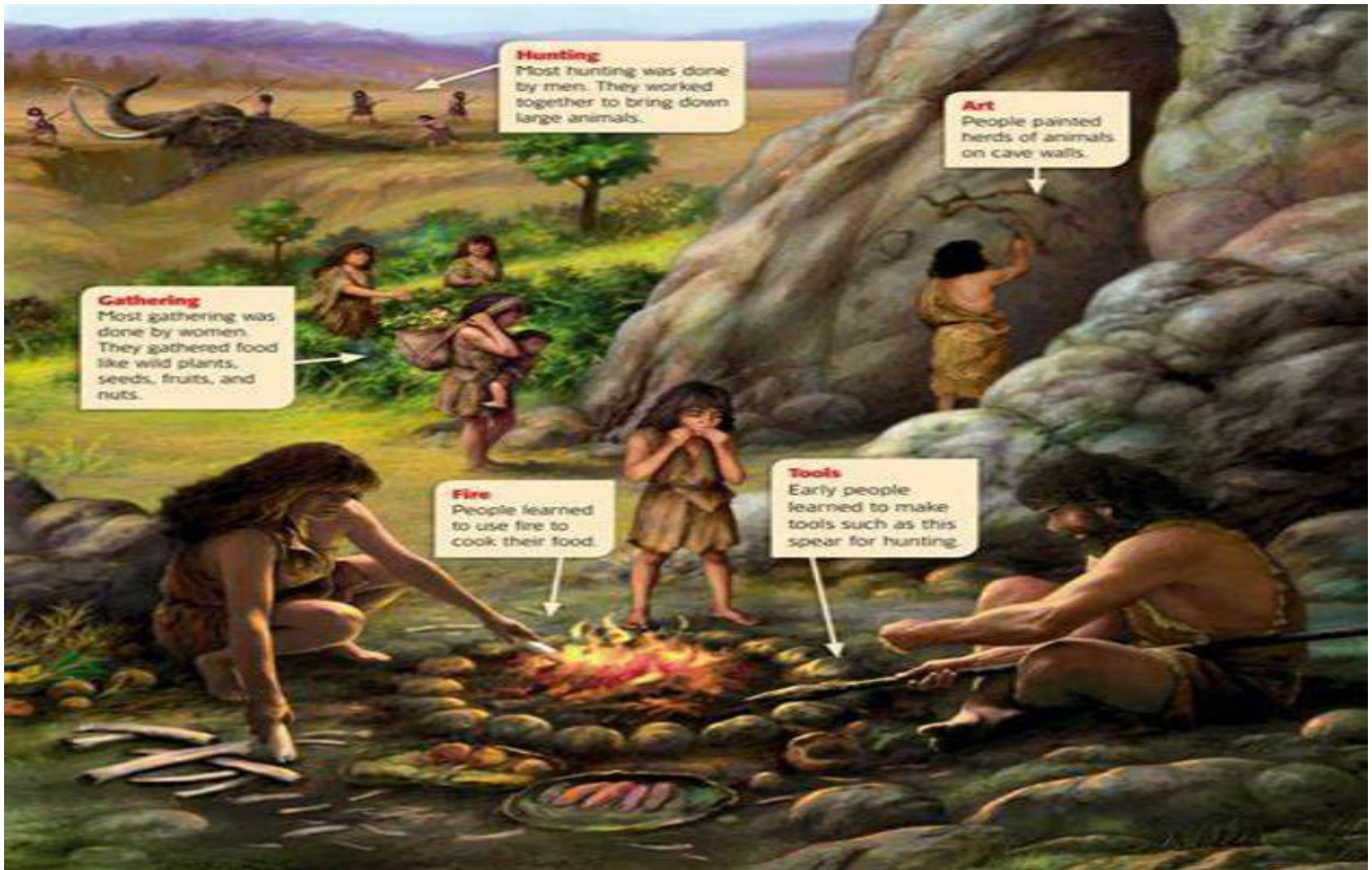
Lenski: 5 types of societies based on technology

- 1. Hunting and gathering societies**
- 2. Horticultural and pastoral societies**
- 3. Agrarian societies**
- 4. Industrial societies**
- 5. Postindustrial societies**

Hunting and Gathering Societies

- 12,000 years ago, all humans were hunters and gatherers. Even in 1800, many hunting and gathering societies could be found around the world.
- But today just a few remain, including the Aka and **Pygmies** of Central Africa, the **Bushmen** of southwestern Africa, the **Aborigines** of Australia, the **Kaska Indians** of northwestern Canada, the Batek and **Semai** of Malaysia, and isolated native people living in the Amazon rain forest.

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Features :

**Hunters and gatherers use simple weapons—
the spear, bow and arrow, and stone knife**

- Nomadic in nature
- No desire to acquire wealth
- Family and kinship are the only defined institutions
- Absence of political institution
- Limited division of labor/ no gender inequality
- Constant need to face danger
- Simple religious belief

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- Being constantly at risk in this way encourages people to cooperate and share, a strategy that raises everyone's chances of survival. But the truth is that many die in childhood, and no more than half reach the age of twenty.
- Fortunately, study of this way of life has given us valuable information about human history and our basic ties to the natural world.

Horticultural and Pastoral Societies

A new technology began to change the lives of human beings. People developed horticulture, the **use of hand tools** to raise crops. Using a **hoe** to work the soil and a **digging stick** to punch holes in the ground to plant seeds may not seem like something that would change the world.

The first humans to plant gardens lived in fertile regions of the Middle East

Pastoral societies

- People living in **dry regions** (such as the deserts of Africa or the Middle East) or **mountainous areas** found **little use for horticulture** because they could not grow much anyway. Such people (including the Tuareg) were more **likely to adopt pastoralism, the domestication of animals**. Today, societies that mix horticulture and pastoralism can be found throughout South America, Africa, and Asia.

Continue..... Features

- Relatively larger in size
- Pastoralist nomadic but horticulturalist formed settlements
- As growing plants and raising animals greatly increased food production so surplus began and starts inequality
- Nomadism coupled with trading
- Warfare
- Horticulturalists, however, are more likely to think of **one God** as **the creator of the world**. Pastoral societies carry this belief further, seeing God as directly involved in the well-being of the entire world. The pastoral roots of Judaism and Christianity are evident

Agrarian Societies : Plough

- About 5,000 years ago, another revolution in technology was taking place in the Middle East, one that would end up changing life on Earth. This was the emergence of agriculture, large-scale cultivation using plows harnessed to animals or more powerful energy sources. So important was the invention of the animal-drawn plow, along with other breakthroughs of the period—including irrigation, the wheel, writing, numbers, and the use of various metals—that this moment in history is often called the “dawn of civilization.”

Features

- Cultivation of the land through the plough
- Combining irrigation system
- Increased food production enormously
- Big size of the society
- Appearance of the cities
- Emergence of elaborate political institutions
- Emergence of different social classes
- Economic institutions, used money as medium of exchange
- Warfare and Empire building
- Enrichment of culture
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- In agrarian societies, religion reinforces the power of elites by defining both loyalty and hard work as moral obligations.
- Many of the “Wonders of the Ancient World,” such as the Great Wall of China and the Great Pyramids of Egypt, were possible only because emperors and pharaohs had almost absolute power and could order their people to work for a lifetime without pay. Of the societies described so far, agrarian societies have the most social inequality

Industrial Societies

Industrial era began, the major source of energy had been the muscles of humans and the animals they tended. Around the year 1750, people turned to water power and then steam boilers to operate mills and factories filled with larger and larger machines.

By 1900, railroads crossed the land, steamships traveled the seas, and steel-framed skyscrapers reached far higher than any of the old cathedrals that symbolized the agrarian age.

Industrial Societies ...associated with industrial revolution and industrialism

- **Work also changed.** In agrarian communities, most men and women worked in the home or in the fields nearby.

Industrialization drew people away from home to factories situated near energy sources (such as coal fields) that powered their machinery. The result was a weakening of close working relationships, strong family ties, and many of the traditional values, beliefs, and customs that guide agrarian life.

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- The new industrial societies **changed more in one century** than the earlier agrarian societies had changed over the course of the previous **thousand years**.
- Although at first **new technology only benefits the elite few, industrial** technology is so productive that over time just about **everyone's income rises so** that people live longer and more comfortable lives.
- Even social inequality decreases slightly.

Features

- Vast technology and rapid change
- Larger societies with huge populations
- Large scale division of labor
- Losing importance of family and kinship
- Religion losing its hold over people
- Increasing importance of science and education
- Increasing importance of the role of the state
- widening gap between the rich and the poor
- Spread of heterogeneous culture

Postindustrial Societies

Daniel Bell (1973) coined the term post industrialism to refer to the production of information using computer technology.

Production in industrial societies centers on factories and machinery generating material goods; postindustrial production relies on computers and other electronic devices that create, process, store, and apply information. Just as people in industrial societies learn mechanical skills, people in postindustrial societies such as ours develop information-based skills and carry out their work using computers and other forms of high-technology communication.

Features.....

- Postindustrial society uses less and less of its labor force for industrial production.
- The postindustrial society is at the heart of globalization.
- Most evident in rich nations.

Differences between pre-industrial society and industrial society

- Simple Vs complex social structure
- Life in the context of primary groups Vs secondary group.
- Ascribed Vs Achieved status.
- Homogenous Vs heterogeneous.

The Limits of Technology

- New technology not only solves old problems but also creates new ones.
- More complex technology has made life better by raising productivity, reducing infectious disease, and sometimes just relieving boredom. But technology provides no quick fix for social problems.
- Technology also creates new problems that our ancestors could hardly imagine.

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- Industrial and postindustrial societies **give** us more **personal freedom**, but they often **lack** the **sense of community** that was part of preindustrial life.
- Most seriously, an increasing number of the world's nations have used **nuclear technology** to **build weapons** that **could send the entire world back to the Stone Age**—if humanity survives at all.
- Advancing technology has also **threatened** the **physical environment**.
- Technological advances **have improved life** and brought the **world's people closer**. But **establishing peace, ensuring justice, and protecting the environment** are problems that technology alone cannot solve.