VII. Responses to Industrialism

A. The First Anti-Industrial Response: Ludditism

1. When the Steam Engine was applied to create new technologies, it wasn't always easy for people to adapt to the change, and people began to resist industrialization in different ways.
2. Just prior to the Steam Engine, a mechanical invention called the *Spinning Jenny* was invented **c.1764** that allowed an individual to create thread (an activity called "spinning") more quickly than ever before.
3. The idea of the *Spinning Jenny* was pushed to a more advanced level in the form of a machine called a *Spinning Mule* and similar machines like the *Power Loom* that were large, heavy, and complex — and could only be run by the power of a Steam Engine, and in short order the manufacturing of clothing was revolutionized.

The simple, homey activity of "spinning" thread passed down from mothers to daughters, started to change with the introduction of the *Spinning Jenny* (top right). The *Spinning Mule* (bottom left) led to the industrialization of spinning. Soon massive amounts of thread were being produced in steam-powered factories.

4. *Ludditism* was a reaction against this transformation. The *Luddites*, apparently named after a man called Neil Ludd, objected to the *mechanization* of human work. They saw the factory system as "dehumanizing," because workers were reduced to the tasks required to make machines work. (One might say that instead of machines helping people, people were serving machines.)
5. *The Luddites* infamously took sledgehammers to textile (clothing) machinery to protest the industrialization of this part of the life.

B. The Second Anti-Industrial Response: Transcendentalism

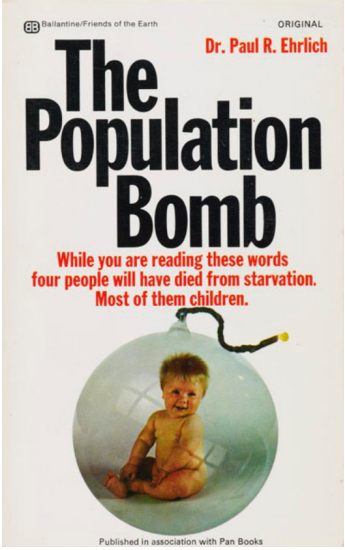
1. As steam technology was applied to different kinds of manufacturing and to transportation technology (such as steamships and steam trains), life began to speed up and increasingly focussed on material goods. This produced another anti-industrial response: transcendentalism.
2. In 1854, the American author Ralf Waldo Emerson wrote a book entitled *Walden; or, Life in the Woods.*
3. Emerson's goal was to describe the value of disconnecting from the increasingly hectic and materially-focussed character of industrial life and "return to nature."
4. Emerson went to live in nature, built himself a small cabin, and immersed himself in a non-industrial lifestyle.
5. This is known as "transcendentalism," because, as the name suggests, the goal is to "transcend" material concerns, and focus on something that is non-material and believed to be more meaningful.
6. Transcendentalism takes many forms. Anyone who believes in "spiritual" values—whether it's religion, mindfulness or meditation practices, or even "communing" with nature—embodies this perspective in some form.
7. Although widespread, transcendentalism has not stopped industrial progress. The benefits of material progress have been too great to resist.

C. Conservationism and Preservationism

1. As the proto-industrial phase gave way to the industrial phase, changes came even more rapidly and technology became even more advanced. The population rose as people lived longer, better lives. More food was produced. Cities grew. In general, human life began to flourish on a scale never before seen.
2. This also meant that human beings were using the resources found in nature at a great rate than ever before: cutting down trees to build house, drawing oil from the ground to power lamps, and later cars and planes, building railroads, and otherwise transforming the landscape to suit their needs.
3. For some this rapid expansion of human activity was cause for concern. What if all this activity was too rapacious? Was it possible that nature could be used up?
4. People who valued nature, such as soon-to-be president Theodore Roosevelt, came to believe that *some* natural resources should be *conserved.* To achieve this end, Roosevelt helped found an organization called the *Boone and Crocket Club* in 1887.
5. The concept behind this club, and behind government organizations championed by Roosevelt such as the US Forest Service is "conservationism." Conservationism holds that natural resources should be managed carefully so that they can be conserved for future generations.
6. Similarly, other worried observers, believed that "unspoiled" nature was at risk of disappearing, and this should be view as a crucial value—to be *preserved.*
7. John Muir, a naturalist and friend of Theodore Roosevelt, took this view in founding the *Sierra Club* in 1892.
8. Preservationism is the view that nature should be viewed as an "end in itself," as opposed to a "means to an end." (Industrialization, of course, holds the opposite view that nature must be *used* by human beings in order to create the material values that sustain human life.) In preservationism, the goal is not to "manage" natural resources so that human beings can take advantage of them in perpetuity; the goal instead is to cordon of nature so that human beings cannot ever use it and it is maintained as a "wilderness."
9. In some regards, the national parks of America are run according to this perspective, as part of a *National Wilderness Preservation System.*

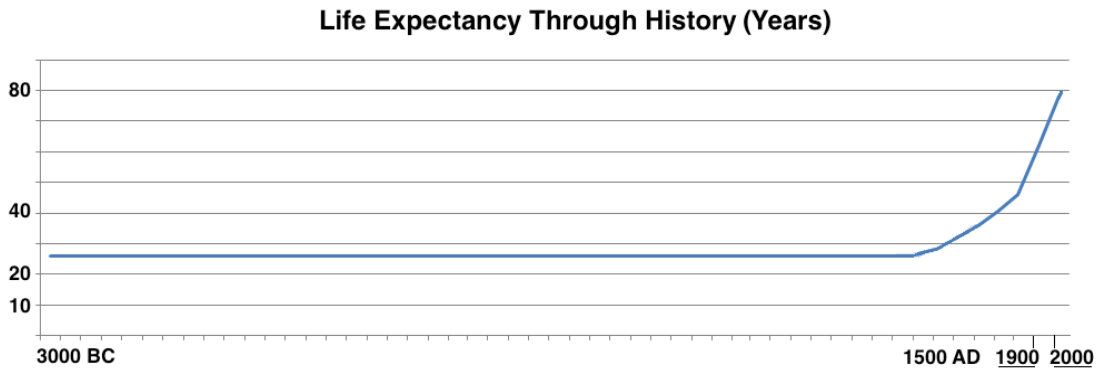
D. Environmentalism and Environmental Alarmism

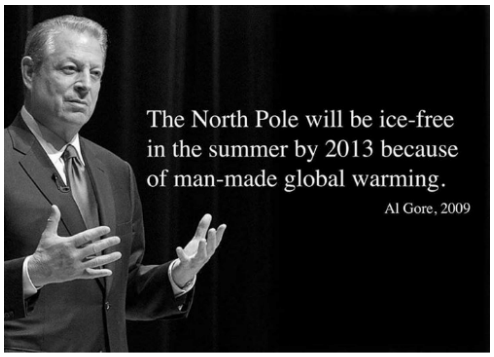
1. As industrial development gave way to *advanced* industrial development, a new phase of anti-industrialism also arose.
2. One trigger for this response was the development of nuclear weapons, which have such tremendous destructive power, not only of human life, but of life in general, because of the energy of their explosions and the radioactivity they produce.
3. When the United States developed and used nuclear weapons in World War II, it caused other countries (such as Russia and China) to want to possess them too. As more countries developed and tested nuclear weapons, literally *hundreds* of nuclear explosions were conducted to prove their capabilities and as part of an "arms race" between rival powers in the world.
4. In addition to nuclear technologies, the accelerating use of chemicals in agriculture concerned many scientists, due to its foreseen effects on different forms of life. If pesticides, for instance, were widely used, what would their effects be on other forms of life?
5. A biologist named Rachel Carson found that because of the widespread use of a pesticide called DDT, certain bird populations had also died. She published her findings and interpretations in a famous book called *Silent Spring* in **1962.**
6. Carson did not call for the elimination of pesticides or other industrial technologies, but she did raise concerns about their effects on the "environment."
7. This, in the broadest sense, is the root of what is known as "environment*alism."* Environmentalism holds that industrial activity must be judged on the basis of its effects on the "environment." Key to this conception is what the word "environment" means. Typically, it is *preservationists* who have insisted on a use of the term to means *nature—apart from humans* —as opposed to the world that surrounds and affects humans.
8. Despite the concerns expressed by Carson and others like her, industrialization has continued at a very rapid rate. For preservationists this has resulted in a belief that the outcome will be catastrophic for the environment, and a new view has arisen in contemporary society known as environmental alarmism.
9. Since the beginning of advanced industrialization, alarmists have been predicted that doom is just around the corner. In the 1960s, the main form of alarmism was the notion that human beings would run out of food, because the "population bomb" was about to explode.
10. A recent form of alarmism makes the claim that the ice caps are melting at a catastrophic rate, which will result in all the coastal cities in the world, like New York, San Francisco, and Miami, being flooded, and human life experiencing horrendous setbacks.
11. The anti-industrialism of environmentalists coupled with the exaggerated pessimism of environmental alarmists makes it very difficult for people to determine the validity of environmental claims today. There can be no doubt that human beings affect the "environment" more today than ever. It also seems obvious that the changes human beings have made are *cumulative*, meaning that they add up. What are the consequences of such changes?



A notorious example of environmental alarmism is the book the "Population Bomb" by Paul Ehrlich, who predicted there would be widespread famine in the 1970s.

12. It is now commonly believed that human activity is producing "climate change." Given the level of human technological development and the rampant industrialization of countries like China and even India and (soon) Africa, this seems possible.
13. It is scientifically undeniable, however, that industrialization has produced the greatest improvements in human life, raising the average lifespan of human beings from 25 years in pre-industrial times to over 80 years today, with fantastic improvements in the *quality* of life as well.





Industrialism has produced the greatest advances in human life in all of history. At the same time, there are environmental consequences. The hectic industrialization of China, as an example, has produced massive air quality issues (bottom left). The challenge is to understand and address these issues in the context of alarmism (bottom right) so that we can continue to improve life for human beings.